Provision of labour analgesia and its related barriers among maternal healthcare providers in Kenya: an institutional-based descriptive survey.

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Abstract

Background: Although pain relief is a key component of modern obstetric care, it remains a poorly established service in sub-Saharan countries such as Kenya. Maternal health care providers have an extensive role to play in meeting the analgesic needs of women during childbirth. The study sought to examine the practice of labour pain relief and its deterrents among Kenyan maternal health care providers.

Methods: This was an institutional based, cross-sectional descriptive survey. The study population included midwives, obstetricians and anaesthesiologists working at the second largest referral hospital in Kenya. A structured, self-admininisterd questionnaire was used. The pattern of provision of labour analgesics, knowledge, attitude and perceived barriers to labour pain management was described.

Results: One hundred and seventeen respondents participated in the study with a response rate of 97.5%. The prevalence of routine labor analgesia provision was 61.5%. The commonest pharmacological method prescribed was nonopioids (13.4 %). Regional analgesia was provided by 4(3.6%) of the respondents. Majority of maternal healthcare providers (53.0%) had poor knowledge of labour pain management. Almost all (93.9%) of the respondents had a positive attitude towards the provision of labour analgesia. Non-availability of drugs and equipment (58.1%), lack of clear protocols and guidelines (56.4%) and absence of adequate skilled personnel (55.6%) were reported as the health system factors that hinder the provision of labour analgesia.

Conclusions: More than half of maternal health care providers routinely relieve labour pain; gender, cadre, and years of experience are significantly associated with routine provision of labour analgesia. Epidural analgesia is still quite underutilized. There is a need for development of institutional labour pain management protocols to meet the analgesic needs of women during childbirth.

Background

Labor pain management is a universal concern in modern obstetrics. Although the childbirth experience is subjective and multifaceted, pain associated with labor has been described as one of the most intense forms of pain (1, 2). Adverse consequences of labor pain may result from neuroendocrine stress responses, including increasing maternal peripheral vascular resistance and decrease uteroplacental perfusion (3, 4). Unrelieved labor pain has also been shown to contribute to the development of postpartum psychological trauma; such as postpartum depression(5).

Labour analgesia practise reflect a complex interplay of knowledge, values, and interests of both maternal health care providers (MHCP's) and parturients. Both pharmacological and non-pharmacological approaches are necessary for effective labour pain management. Moreover, the ideal labour analgesic should be safe, effective and centred around the parturients' choice (6).

In developed economies, pain relief during labor is an integral part of intrapartum care (7);with most studies focusing on comparison of effectiveness of various methods and alternative therapies(8, 9). Despite the body of evidence on labour pain management, the practise in Africa is suboptimal with institutional routine provision reported as low as 13.8% (10).

There is limited literature on maternal healthcare provider labour pain practise in Kenya. This has resulted in difficulty in assessing trend in this population, and comparison of evidence. It is important to fill the knowledge gap in order to make decisions based on local figures. In clinical practice, the results of this study could serve as a baseline for interventions that could inform care for women in labor. By identifying modifiable factors that hinder labour pain management, the study could improve the overall quality of obstetric care in Kenya.

Conceptual Framework

Interview data was constructed by adopting the Reciprocal Determinism (Reciprocal Causation) model, which has been shown to be superior as compared to other models in assessing pain management practices by healthcare workers (11). According to reciprocal determinism, any human behaviour is the result of external environmental factors (via social stimulus events) and internal personal factors (through cognitive processes)(12). In our study, the internal personal factors included health care provider factors: demographic factors (e.g., sex, age, professional cadre, and duration of practice), knowledge and attitude. The environmental factors included the social milieu within which MHCP's continually interact i.e., health system factors (e.g., availability of adequate skilled personnel, clear protocols and guidelines, drugs and equipment).

The study aim was to assess the practice of labour pain relief and its related barriers among maternal health care providers working at a tertiary healthcare facility in Kenya.

Methods

Study design

An institutional based, cross-sectional descriptive survey of labour analgesia practise was conducted by means of a structured, self-admininisterd questionnaire to maternal health care providers.

This study site was the Moi Teaching and Referral Hospital (MTRH), Eldoret, Kenya. MTRH is the second largest public teaching and referral hospital in Kenya. The hospital serves a population of approximately 24 Million, with an average of 13,000 deliveries annually. Review and approval was obtained from the Moi University School of Medicine/MTRH Institutional Research and Ethics Committee. All participants provided informed consent for data collection.

Study population

The study population comprised of midwives, residents and consultants in both anesthesia and reproductive health, working at MTRH during the data collection period. The study period was between 1st January 2021 and 31st March 2021.

Sample size and sampling

A census was employed and included all the 120 MHCP's at MTRH. A consecutive sampling method was used until all eligible participants in the study were enrolled.

Study instrument

After written informed consent, MHCPs who met the inclusion criteria were requested to complete a paper based structured questionnaire. The questionnaire contained 44 questions and was self-administered. The study adopted a questionnaire based on multiple similar studies in accordance with the conceptual framework and study objectives (13, 14).

The questionnaire comprised of the following sections:

Section A: sociodemographic characteristics i.e., sex, age, professional cadre, and duration of practice. Section B, assessed the provider's knowledge and attitude related to labor analgesia. A total of 10 items were included in the questionnaire to assess the respondents' knowledge and 5 items to assess the respondents' attitude. The reliability analysis of these 10 items on knowledge was performed and found at an acceptable level of standardized Cronbach Alpha (α = .718).

Participants overall knowledge level was categorized using modified Blooms cut-off point, as good if the score was between 80 and 100% (12-15 points), moderate if the score was between 50 and 79% (7-11points), and poor if the score was less than 50% (≤7 points).

Attitude toward labor analgesia was assessed using five Likert-type items. The response options for these items were 'disagree,' 'unsure,' and 'agree.' The reliability of these five items was acceptable with a standardized Cronbach Alpha (α = .804). Similarly, the attitude of health care providers towards the provision of labour analgesia was categorized using the original Bloom cut–off point. Attitude was considered positive if the score was 80-100% (12-15 points), neutral if the score was 60-79% (9-11 points) and negative if the score was less than 60% (≤ 9 points)(15). A positive attitude towards the provision of labour analgesia meant having a perception that labour pain is significant enough to warrant intervention and that provision of labour analgesia should be a routine and not an exception.

Section C included questions on the type and frequency of use of the various forms of labour analgesia.

Only participants who responded to be providing any form of labour analgesia 'routinely' were considered to be practising the provision of labour analgesia.

Section D assessed the factors influencing the provision of labour analgesia and employed a 5-point Likert scale from strongly agree to strongly disagree. The first three questions assessed the health system

factors influencing the provision of labour analgesia while the remaining nine assessed other perceived barriers to the provision of labour analgesia.

The concluding section enquired about the provider's willingness to receive further training on labour analgesia.

Results

Of the 120 maternal health care providers approached, 117 responded, representing a 97.5% response rate. Table 1 demonstrates the socio-demographic characteristics of the participants. The participant's age ranged from 27-60 years, with a mean age (±standard deviation) of 38.44 (± 7.41) years. Most of the participants (71.8%) were aged between 31 to 40 years. Among them, 50.2% were males and 49.6% females. The study included 48 (41.0%) midwives, 53 (45.3%) obstetricians and 16 (13.7%) anesthesiologists. The participants' mean duration of practice (±standard deviation) was 9.54 (±4.94) years. A majority of the participants (66.9%) had been in practice for 10 years or less.

Table 1

Socio-demographic characteristics of the respondents, N=117.

Socio-demographic characteristics	Frequency	Percentage (%)
Sex		
Male	58	49.6
Female	59	50.4
Age (years)		
≤30	7	6
31 – 40	84	71.8
41 – 50	17	14.5
51 – 60	9	7.7
Min. – Max.	**27.0 – 60.0**	
Mean ± SD.	**38.44 ± 7.41**	
Profession		
Anesthesiologist	16	13.7
Midwife	48	41
Obstetrician	53	45.3
Duration of practice (years)		
≤5	16	13.7
6 to 10	62	53
10 to 15	27	23.1
16 to 20	8	6.8
≥21	4	3.4
Min. – Max.	**2.0 – 26.0**	
Mean ± SD.	**9.54 ± 4.94**	

Pattern of provision of labour analgesics by maternal healthcare providers.

Seventy-two respondents (61.5%) provided some form of labour analgesia routinely. Of these, 88.9% reported offering both pharmacological and non-pharmacological methods, while 11.1% provided only pharmacological methods. Slightly more than half of the respondents (55.7%), reported routinely providing non-pharmacological methods of labour analgesia. Non-opioids were the most common pharmacological method prescribed, by 13.4% (n=15) of the respondents. Nine (8.7 %) participants

reported routinely providing opioids. Regional analgesia was routinely prescribed by 3.6% (n=4) of respondents. Labour pain management by inhalational analgesics was not routinely practised by any of the MHCPs.

Figure 1 illustrates the frequency of provision of labour analgesia as reported by anesthesiologists. Non-opioids as routine labour analgesia was reported by 30.8% of the anesthesiologists. Opioids were provided by 23.1% (n=3) of the respondents within this cadre while regional analgesics and non-pharmacological methods of pain relief were each provided by 13.3% (n=2) of the respondents. Inhalational analgesics were not provided by any of the anaesthesiologist respondents. No response was obtained from 3 out of 16 respondents within the cadre.

Of the 48 midwife respondents, a majority (75%), reported providing non-pharmacological methods for labour pain management.

Non-opioids were the most routinely provided pharmacological treatment for labour pain by 6.4% (n=3) of the midwives. None of the midwife respondents reported routine provision of opioids, regional and inhalational methods for labour analgesia (Figure 2).

Half (50%), of the obstetrician respondents reported providing non-pharmacological modes of labour pain management. Nonopioids were the primary pharmacological agents provided by the majority (15.4%) of respondents, and 11.8% (n=6) reported providing opioids routinely. Regional analgesics were provided by 3.8% (n=2) of the respondents while none of the obstetrician respondents reported providing inhalational agents for labour pain management (Figure 3).

Cumulatively, tramadol was the most routinely provided opioid analgesic, by 88.9% (n=8) of the maternal healthcare providers. Buscopan and paracetamol were the most routinely (66.7%) prescribed non-opioid analgesic. Epidural analgesics was the most preferred regional analgesia by 75% (n=3) of MHCPs. The four most routinely prescribed non-pharmacological methods for labour analgesia were: Touch and massage (93.8%), deep breathing /patterned breathing (Lamaze techniques) (81.3%), maternal movements and positional changes (81.3%) and social support (reassurance) (79.7%) (Table 2).

Table 2

Types of labour analgesia provided by maternal healthcare providers who routinely offer labour analgesia at MTRH (N=117)

Agent	Frequency	%*
Opioids		
Tramadol	8	88.9
Morphine	5	55.6
Pethidine	3	33.3
Fentanyl	3	33.3
Reported provision of any opioid	**9**	**8.7**
Non-Opioids		
Buscopan	10	66.7
	10	66.7
Diclofenac	2	13.3
Reported provision of any non-opioid	**15**	**13.4**
Regional		
Epidural	3	75.0
Spinal	2	50.0
Reported provision of any regional	**4**	**3.6**
Non-pharmacological		
Touch and massage	60	93.8
Deep breathing /patterned breathing (Lamaze)	52	81.3
Maternal movements and positional changes	52	81.3
Social support (Reassurance)	51	79.7
Audio analgesia	24	37.5
Yoga	3	4.7
Intermittent local heat and cold therapy	1	1.6
Acupuncture	1	1.6
Reported provision of any non-pharmacological	**64**	**55.7**

***** Percentages do not add to 100% because some respondents reported providing multiple methods for labour analgesia.

Knowledge and attitude towards labour analgesics

Knowledge

The majority of surveyed MHCP's (53.0%) had poor knowledge of labour pain management. Only 4.3% (n=5) of respondents rated as having good knowledge. All the consultant anaesthesiologists, 70% of the resident anaesthesiologists and 52.6% of the consultant obstetricians rated moderately in terms of overall knowledge of labour analgesia. The proportion of those who rated as having poor knowledge of labour analgesia was higher among resident obstetricians (70.6%) and midwives (60.4%). Based on the composite score of 6.7, MHCP's at MTRH generally had poor knowledge of labour analgesia, as assessed using the modified Blooms cut-off points (Table 3).

Table 3

MHCPs' Knowledge on labour analgesia, (N=117).

CADRE	GOOD	MODERATE	POOR	AVERAGE SCORE*	% SCORE
Anesthesiologist (N=6)	0 (0.0%)	6 (100%)	0 (0.0%)	**9.5**	**63.3**
Resident anesthesiologist (N=10)	0 (0.0%)	7 (70.0%)	3 (30.0%)	**7.4**	**49.3**
Midwife (N=48)	1 (2.1%)	18 (37.5%)	29 (60.4%)	**6.2**	**41.3**
Obstetrician (N=19)	3 (15.8%)	10 (52.6%)	6 (31.6%)	**7.7**	**51.3**
Resident obstetrician (N=34)	1 (2.9%)	9 (26.5%)	24 (70.6%)	**6.1**	**40.7**
TOTAL N=117	**5 (4.3%)**	**50 (42.7%)**	**62 (53.0%)**	**6.7**	**44.7**

* Maximum score of 15

In the self-assessment of previous education concerning labour analgesia 81.2% (n=95) of the participants had a "yes" response. The reported sources of the labour analgesia knowledge were; as part of the curriculum in previous education (60.8%), in-service education (52.6%), literature / the internet (39.2%), and from fellow colleagues (27.8%) (Table 4).

Table 4

Sources of MHCPs' knowledge on labour analgesia by percentage.

Items	Anesthesiologist (N=13)	Midwife (N=38)	Obstetrician (N=46)	TOTAL (n=97)
1. As part of the curriculum in previous education	76.9	55.3	60.9	60.8
2. During in-service education (C.M.E, seminars etc.)	69.2	42.1	56.5	52.6
3. Literature / the internet	30.8	34.2	45.7	39.2
4. From colleagues	7.7	23.7	36.9	27.8

A total of 72.6% (n=85) of MHCPs reported being aware of the universal pain assessment tools, however only 36.8% used these tools in the assessment of labour pain. Notably, 65.8% of respondents had awareness of the WHO analgesic ladder. Of these, 47.0% used this tool during labour pain management. Overall, anesthesiologists had better knowledge of the pain assessment tools compared to the other cadres surveyed (table 5).

Table 5

Percentage of maternal HCPs' who use pain assessment tools in managing Labour pain.

			Universal pain assessment tools			
Cadre	**WHO analgesic ladder(N=55)**		**Numerical**	**Visual**	**Verbal**	**Total using UPA* (N=43)**
Anesthesiologist (N=16)	81.3		42.9	71.4	28.6	43.8
Midwife (N=48)	31.3		21.8	34.8	74.0	47.9
Obstetrician (N=53)	50.9		30.1	38.4	30.8	24.5
		Total†	**27.9**	**41.9**	**53.5**	
Total (N=117)	**47.0**					**36.8**
† Values do not add up to 100% because some respondents reported using more than one tool						
UPA*: Universal pain assessment tools						

There was overall poor knowledge of opioid dose properties, with only 23.7% (n=27) of all the respondents being aware that opioids do not have a ceiling effect. More than half (58.1%) of the MHCPs' were aware that non-pharmacological pain relief methods are safer compared to pharmacological

analgesics and 76.1% were also aware that pharmacological pain relief methods increase the comfort of women in Labour as compared to non-pharmacological analgesics.

Attitude

Based on the composite score of 13.3, 88.7% of MHCP's at MTRH generally had a positive attitude towards the provision of labour analgesia, as assessed using the original Blooms cut-off points (Table 6).

Table 6

Providers' attitude towards the provision of labour analgesia (N=116).

CADRE	POSITIVE	NEUTRAL	NEGATIVE	AVERAGE SCORE†	% SCORE
Anesthesiologist (N=6)	6(100.0%)	0(0.0%)	0(0.0%)	13.2	**88**
Resident anesthesiologist (N=10)	9(90.0%)	1(10.0%)	0(0.0%)	13	**86.7**
Midwife (N=48)	45(93.8%)	3(6.3%)	0(0.0%)	13.2	**89.3**
Obstetrician (N=19)	18(94.7%)	1(5.3%)	0(0.0%)	13.4	**89.5**
Resident obstetrician (N=33)	31(93.9%)	2(6.1%)	0(0.0%)	13.5	**90**
TOTAL N=116	**109(94.0%)**	**7(6.0%)**	**0(0.0%)**	**13.3**	**88.7**

†Maximum score of 15

Forty-three (36.8%) respondents expected women to feel pain during labour. A majority (82.1%) of the respondents agreed that labour pain should be relieved with an equal number also agreeing that relief of labour pain improves the overall maternal experience. Ten (8.5%) of the study subjects however believed that labour is a natural process that does not require any analgesia, 17.1% were unsure, while the remaining 74.4% disagreed.

Health system factors.

A majority (91.7%) of maternal healthcare providers at MTRH reported experiencing health system factors that hindered their provision of labour analgesia. These included: non-availability of drugs and equipment (58.1%), lack of clear protocols and guidelines (56.4%) and absence of adequate skilled personnel (55.6%).

Other barriers/factors hindering the provision of labour analgesia as reported by maternal healthcare providers at MTRH included (N=117):

i. Fear of foetal distress (47.1%)
ii. Fear of adverse maternal effects (41.8%)
iii. Cost implications (perceived as expensive) (36.7 %)
iv. Fear that it may increase the incidence of caesarean sections and instrumental delivery (34.2%)

Thirteen (11.1%) respondents reported that oftentimes, patients decline labour analgesia.

Almost all the participants (94%), reported that the introduction of labour analgesia guidelines would improve the management of labour at MTRH while 95.7% indicated that regular courses on effective labour analgesia would be useful in their practice of labour analgesia.

In the bivariate logistic regression analysis, there was no significant association between the provision of labour analgesia and age, knowledge, and attitude of the MHCP's. A higher proportion of female MHCP's (72.7%) reporting use of labour analgesia routinely compared to males 46.4% (COR=0.33; 95%CI:0.14,0.71).

Midwives were four times more likely to provide labour analgesia compared to anaesthesiologists (COR=4.32; 95%CI: 1.33, 14.9). Maternal health care providers having more than 10 years of experience were almost ten times more likely to provide labour analgesia than those with less than 10 years of experience (AOR: 9.85, 95% CI 1.52, 1.96) (Table 7).

Table 7

Factors associated with the provision of labour analgesia by MHCP's at MTRH (n=117)

Variable	Use labor analgesia		COR	95%CI	AOR	95%CI
	No (N=45)	Yes (N=72)				
Age (years)						
<=40	34 (37.4%)	57 (62.6%)	1		1	
>40	11 (42.3%)	15 (57.7%)	0.81	0.34, 2.01	0.1	0.00, 0.82
Sex						
Female	15 (27.3%)	40 (72.7%)	1		1	
Male	30 (53.6%)	26 (46.4%)	0.33	0.14, 0.71	0.87	0.24, 3.28
Profession						
Anesthesiologist	9 (56.2%)	7 (43.8%)	1		1	
Midwife	11 (22.9%)	37 (77.1%)	4.32	1.33, 14.9	1.94	0.44, 8.79
Obstetrician	25 (47.2%)	28 (52.8%)	1.44	0.47, 4.58	0.7	0.18, 2.67
Duration of practice						
<=10	32 (41.6%)	45 (58.4%)	1		1	
>10	12 (31.6%)	26 (68.4%)	1.54	0.69, 3.58	9.82	1.52, 1.96
Knowledge						
Moderate/Good	24 (44.4%)	30 (55.6%)	1		1	
Poor	16 (44.4%)	20 (55.6%)	1	0.43, 2.35	1.03	0.38, 2.75
Attitude						
Neutral	2 (28.6%)	5 (71.4%)	1		1	
Positive	41 (38.0%)	67 (62.0%)	0.65	0.09, 3.19	0.94	0.10, 8.81
1=reference						
Abbreviations: AOR, adjusted odds ratio; COR, crude odds ratio; CI, confidence interval						

Discussion

The study revealed that 61.5% (55.7% non-pharmacological and 11.1% pharmacological) of respondents provided some form of labour analgesia routinely. This proportion of labour analgesia practice may be considered inadequate considering the tertiary health institution status and, might allude to a lesser provision of pain relief in lower tier facilities in Kenya. These figures are however in contrast to similar studies conducted in Ibadan, Nigeria, 34.4% and Hawassa, Ethiopia, 13.8% (10, 16). The difference in practice might be due to inclusion of different tier public healthcare institutions in the preceding studies,

and consequently a difference in knowledge and availability of resources. The routine provision of labour pain relief in Kenya is lower than the reported provision in Australia, 75%(3).

The use of non-pharmacological methods of labour analgesia in this survey, was consistent with studies done in North Ethiopia and Bangladesh; back massage, deep breathing, reassurance, maternal movement and position change were the most routinely provided non-pharmacologic pain relief methods(17, 18). Non-pharmacological pain relief methods were preferred among the majority (75%) of midwives, probably due to their safety profile. Pharmacological methods also require a doctor's prescription, making alternative modalities convenient among midwives.

The world health organization (WHO) recommends epidural analgesia for healthy pregnant women requesting pain relief during labour, depending on a woman's preferences (19). Data on epidurals in developing countries is scarce, but there is a general low provision of labour epidurals(20, 21). In this study, only 3.6% of the respondents reported offering regional analgesia routinely. This result is slightly higher than data from South Africa, with a regional hospital in Gauteng province reporting a labour epidural rate of 1.6% (22). There are markedly different figures from developed countries. Epidural analgesia is provided to about 30% and 73% of women in labour the United Kingdom and US, respectively, with increasing rates expected globally(23, 24). In the study setting, use of labour epidural was limited, and preserved predominantly for medical indications, this represents a major difference between the Kenyan public hospital and developing nations. The higher rates of provision of labour epidural may be due to established epidural services in developed nations, mainly within university hospitals. Existing staff shortage, unavailability of adequate drugs and equipment and lack of labour analgesia guidelines, as adduced in this study, are hindrances to routine provision of epidural service.

Non-opioids were routinely provided by 13.7% of respondents in this survey, of which Buscopan and paracetamol use were the most frequently reported. Globally, the use of systemic opioids is a common option of labour analgesia. Worldwide, pethidine injection was the most commonly used opioid for labour pain relief by 2002, although there are considerable doubts about its analgesic effectiveness and safety (29). The use of opioids by MHCP's in the study was 8.7%. The most preferred opioid was tramadol. This may be due to its familiarity, availability and convenience of use by MHCP's as pethidine is a highly restricted drug at the study facility.

The present study showed that 53.3% of the surveyed MHCP's had poor knowledge of labour pain management. These findings were slightly higher than findings reported from the Amhara region, Ethiopia, 48.5% (25) but lower than reported from Ibadan, Nigeria, 66.7%(21). The difference may be due to the study participant variance in carde, years of experience and demographic characteristics. The study also found that majority of the resident obstetricians (70.6%) and midwives (60.4%) had poor knowledge scores, which, could be considered alarming as knowledge as a significant factor for obstetric analgesia use. This might be reflect gaps in the curriculum content of reproductive health courses delivered to health professions.

In the current findings, almost all (93.9%) of MHCP's had a positive attitude towards the provision of labour analgesia. This is higher than in similar studies in Ethiopia, 57.2%(25).

However, in this study, there was no significant association between the provision of labour analgesia and age, knowledge, or attitude of the MHCP's, this is inconsistent with studies from Ethiopia and Nigeria where health care providers who had adequate knowledge and a positive attitude more likely to provide labour pain relief for parturients (25, 26).

Moreover, the current study reported that MHCP's having more than 10 years of experience were almost ten times more likely to provide labour analgesia than those with less than 10 years of experience ((AOR: 9.85, 95% CI 1.52, 1.96)). This finding is similar to studies done in Ethiopia and the US which showed that more experienced MHCP's provide more labour support (27, 28). This may be attributed to years of application, exposure and improved confidence that make this cohort comfortable prescribing and administering labour analgesia routinely.

In this study, health system barriers i.e. non-availability of drugs and equipment, lack of clear protocols and guidelines and absence of adequate skilled personnel were reported as the major hindrances (by 91.7%) to use of labour pain relief methods. This finding is similar to studies done in Tigray region general hospitals, Ethiopia (17) , Saudi Arabia (28) and Nigeria(20).

Limitation of the study

This was an institutional-based study conducted in Eldoret, Kenya; hence the conclusions can only be generalized to similar tier hospitals with equal capacity. We also recommend further studies to explore a wider scope of MHCP's perspectives to comprehensively address the cause and effect relationship of the factors affecting provision of labour analgesia.

Conclusions

More than half of maternal health care providers routinely relieve labour pain. These involves mostly non-pharmacological methods such as touch and sacral massage, encouraging deep breathing, providing instructions on changing positions and providing psychological support.

Epidural analgesia, despite being the gold standard for labour analgesia is still quite underutilized. A majority of maternal health care providers have poor knowledge on labour analgesia. This knowledge gap could be reduced by comprehensive labour pain management education in health professionals` training programs in Kenya and establishment of standard operating procedures within institutions.

Providers' work experience had shown statistical significance with the use of labour pain relief methods. Regular supervision of obstetric caregivers in training and increased mentorship may also be needed for effective labour pain relief.

The optimal use of labour pain management approaches is hindered by health system barriers. To move forward with quality care for pregnant women during labour and delivery, there is need for interventions targeting health systems in Kenya. We recommend further studies to explore the in depth perspectives of providers as well as pregnant women on labour pain management, as they play a key role in labour and birth.

Abbreviations

MTRH Moi Teaching and Referral hospital

RMBH Riley Mother and Baby Hospital

KAP Knowledge, attitude and practices

Declarations

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Authors' contributions

All the authors contributed immensely in the conception, design, collection of data and interpretation of results as well as the drafting of this manuscript. All authors read and approved the final manuscript.

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Availability of data and materials

Not applicable.

Declarations

Ethics approval and consent to participate Ethical clearance was obtained from the from Moi University Institutional Research Ethics Committee (IREC). Permission from MRTH administration was also obtained. A consent form explaining the rationale, benefits and risks of the study was used to seek informed consent from potential participants. Autonomy was respected by giving all the necessary information and freedom to withdraw from the study at any point throughout the study without the need for justification. Confidentiality and privacy were assured. All data was maintained as confidential, and no individual was identified in the dissemination of findings.

Consent for publication

All authors have given their consent for the publication of this manuscript in your insightful journal.

Competing interests

The authors declare that they have no competing interests.

References

1. Ranta P, Spalding M, Kangas-Saarela T, Jokela R, Hollmén A, Jouppila P, et al. Maternal expectations and experiences of labour pain--options of 1091 Finnish parturients. Acta Anaesthesiol Scand. 1995;39(1):60-6.
2. Melzack R. The myth of painless childbirth (the John J. Bonica lecture). Pain. 1984;19(4):321-37.
3. Brownridge P. The nature and consequences of childbirth pain. Eur J Obstet Gynecol Reprod Biol. 1995;59 Suppl:S9-15.
4. Shnider SM, Wright RG, Levinson G, Roizen MF, Wallis KL, Rolbin SH, et al. Uterine blood flow and plasma norepinephrine changes during maternal stress in the pregnant ewe. Anesthesiology. 1979;50(6):524-7.
5. Hiltunen P, Raudaskoski T, Ebeling H, Moilanen I. Does pain relief during delivery decrease the risk of postnatal depression? Acta Obstet Gynecol Scand. 2004;83(3):257-61.
6. Care PEP. Essential Antenatal, Perinatal and Postpartum Care. Training module WHO. 2002.
7. Nunes VD, Gholitabar M, Sims JM, Bewley S. Intrapartum care of healthy women and their babies: summary of updated NICE guidance. BMJ. 2014;349.
8. Czech I, Fuchs P, Fuchs A, Lorek M, Tobolska-Lorek D, Drosdzol-Cop A, et al. Pharmacological and non-pharmacological methods of labour pain relief—establishment of effectiveness and comparison. International journal of environmental research and public health. 2018;15(12):2792.
9. Labor S, Maguire S. The pain of labour. Reviews in pain. 2008;2(2):15-9.
10. Wakgari N, Mekonnen M, Lema B, Negasu A, Lulu B, Abebe E. Labour pain management practices among obstetric care providers in Hawassa city, Ethiopia. African Journal of Midwifery and Women's Health. 2020;14(2):1-12.
11. Alzghoul BI, Chew Abdullah NA. Psychosocial theories and pain management practices: A review of empirical research. Mediterranean Journal of Social Sciences. 2015;6(6 S2):60-7.
12. Bandura A. Social cognitive theory of personality. Handbook of personality. 1999;2:154-96.
13. Mulugeta H. The practice of labor analgesia and its perceived Barriers among Health Care providers working in Public Hospitals of Addis Ababa, Ethiopia: Addis Ababa University; 2016.
14. Endalew NS, Tawuye HY, Melesse DY. Knowledge and attitude towards pain relief in labor among final year midwifery students: A cross-sectional study. International Journal of Surgery Open. 2020;24:38-42.

15. Seid MA, Hussen MS. Knowledge and attitude towards antimicrobial resistance among final year undergraduate paramedical students at University of Gondar, Ethiopia. BMC infectious diseases. 2018;18(1):1-8.
16. Ohaeri B, Owolabi G, Ingwu J. Skilled health attendants' knowledge and practice of pain management during labour in health care facilities in Ibadan, Nigeria. European Journal of Midwifery. 2019;3.
17. Sahile E, Yemaneh Y, Alehegn A, Nigussie W, Salahuddin M, Yekoye A, et al. Practice of Labour Pain Management Methods and Associated Factors among Skilled Attendants Working at General Hospitals in Tigray Region, North Ethiopia: Hospital Based Cross-Sectional Study Design. Health Science Journal. 2017;11(4).
18. Tasnim S. Perception about pain relief during normal labour among health care providers conducting delivery. Medicine today. 2010;22(1):20-3.
19. Organization WH. Defining competent maternal and newborn health professionals: background document to the 2018 joint statement by WHO, UNFPA, UNICEF, ICM, ICN, FIGO and IPA: definition of skilled health personnel providing care during childbirth. 2018.
20. Ogboli-Nwasor E, Adaji S, Bature S, Shittu O. Pain relief in labor: a survey of awareness, attitude, and practice of health care providers in Zaria, Nigeria. Journal of pain research. 2011;4:227.
21. Geltore TE, Taye A, Kelbore AG. Utilization of obstetric analgesia in labor pain management and associated factors among obstetric caregivers in public health facilities of Kembata Tembaro Zone, Southern Ethiopia. Journal of Pain Research. 2018;11:3089.
22. Leonard T, Perrie H, Scribante J, Chetty S. An audit of the labour epidural analgesia service at a regional hospital in Gauteng Province, South Africa. South African Journal of Obstetrics and Gynaecology. 2018;24(2):52-6.
23. NHS patient survey programme. 2019 survey of women's experience of maternity care. [Internet]. 2019 [cited January 7th 2022]. Available from: https://www.cqc.org.uk/sites/default/files/20200128_mat19_statisticalrelease.pdf.
24. Butwick AJ, Bentley J, Wong CA, Snowden JM, Sun E, Guo N. United States state-level variation in the use of neuraxial analgesia during labor for pregnant women. JAMA network open. 2018;1(8):e186567-e.
25. Bishaw KA, Sendo EG, Abebe WS. Knowledge, and use of labour pain relief methods and associated factors among obstetric caregivers at public health centers of East Gojjam zone, Amhara region, Ethiopia: a facility based cross-sectional study. BMC pregnancy and childbirth. 2020;20(1):1-9.
26. Almushait M, Ghani RA. Perception toward non-pharmacological strategies in relieving labor pain: an analytical descriptive study. J Nat Sci Res. 2014;4(2).
27. Gido R, Yadeta TA, Tura AK. Utilization of Obstetric Analgesia for Labor Pain Management and Associated Factors among Obstetric Care Providers in Public Hospitals of Addis Ababa, Ethiopia: A Cross-Sectional Study. Obstetrics and gynecology international. 2021;2021.

28. Aschenbrenner AP, Hanson L, Johnson TS, Kelber ST. Nurses' own birth experiences influence labor support attitudes and behaviors. Journal of Obstetric, Gynecologic & Neonatal Nursing. 2016;45(4):491-501.

Figures

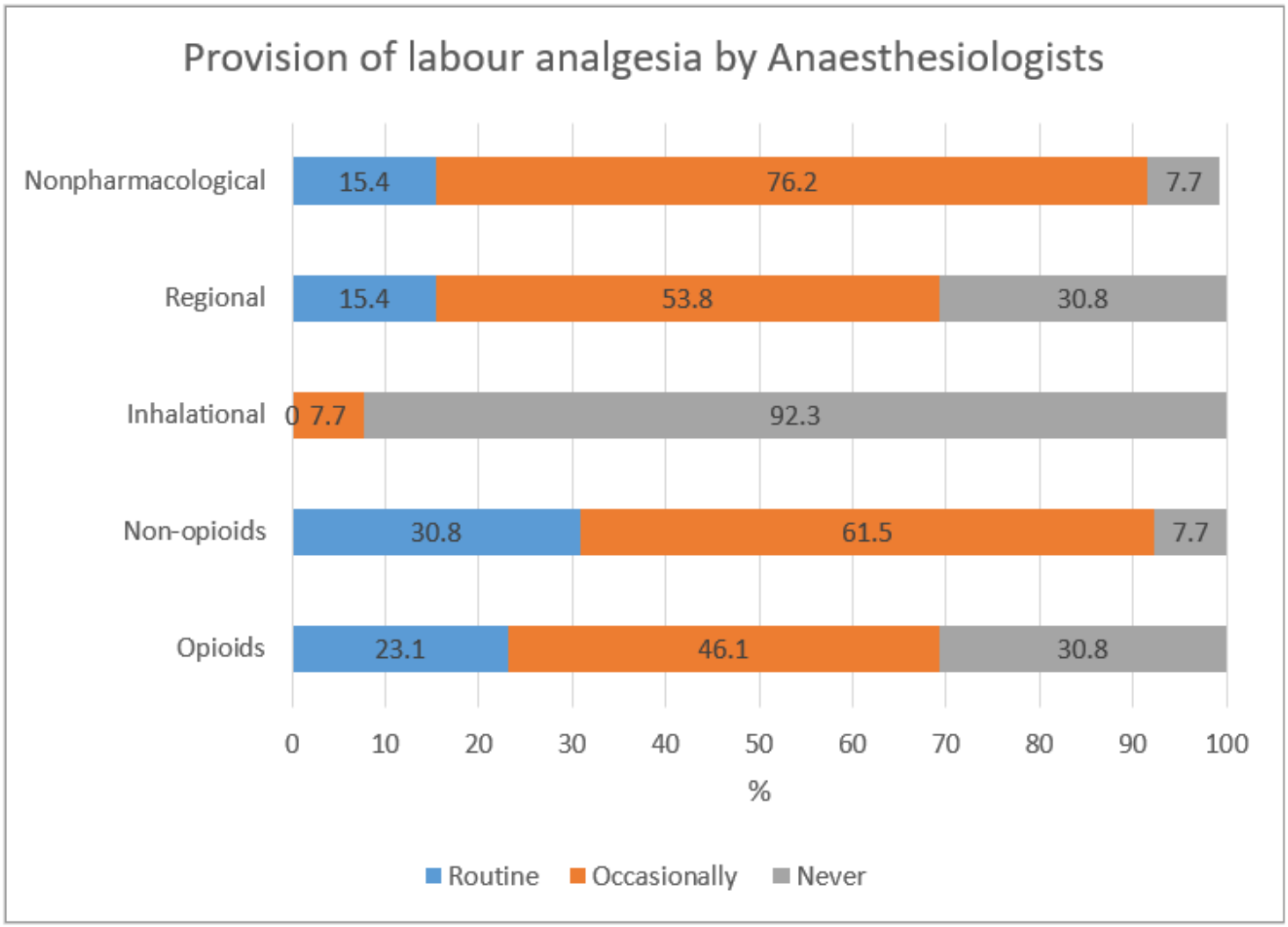

Figure 1

Frequency of provision of labour analgesia as reported by anaesthesiologists at MTRH (n=13)

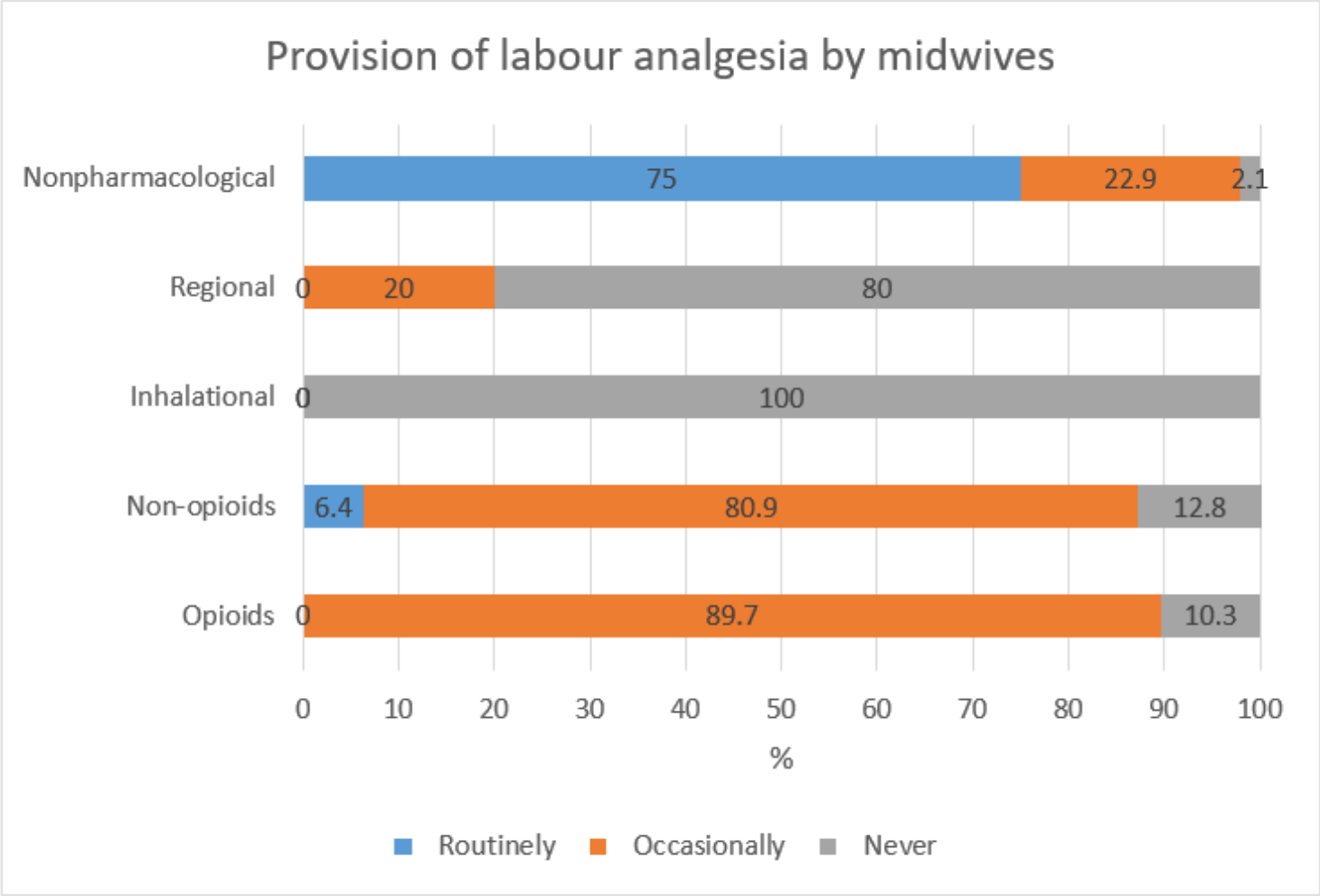

Figure 2

Frequency of provision of labour analgesia as reported by midwives at MTRH (n=48).

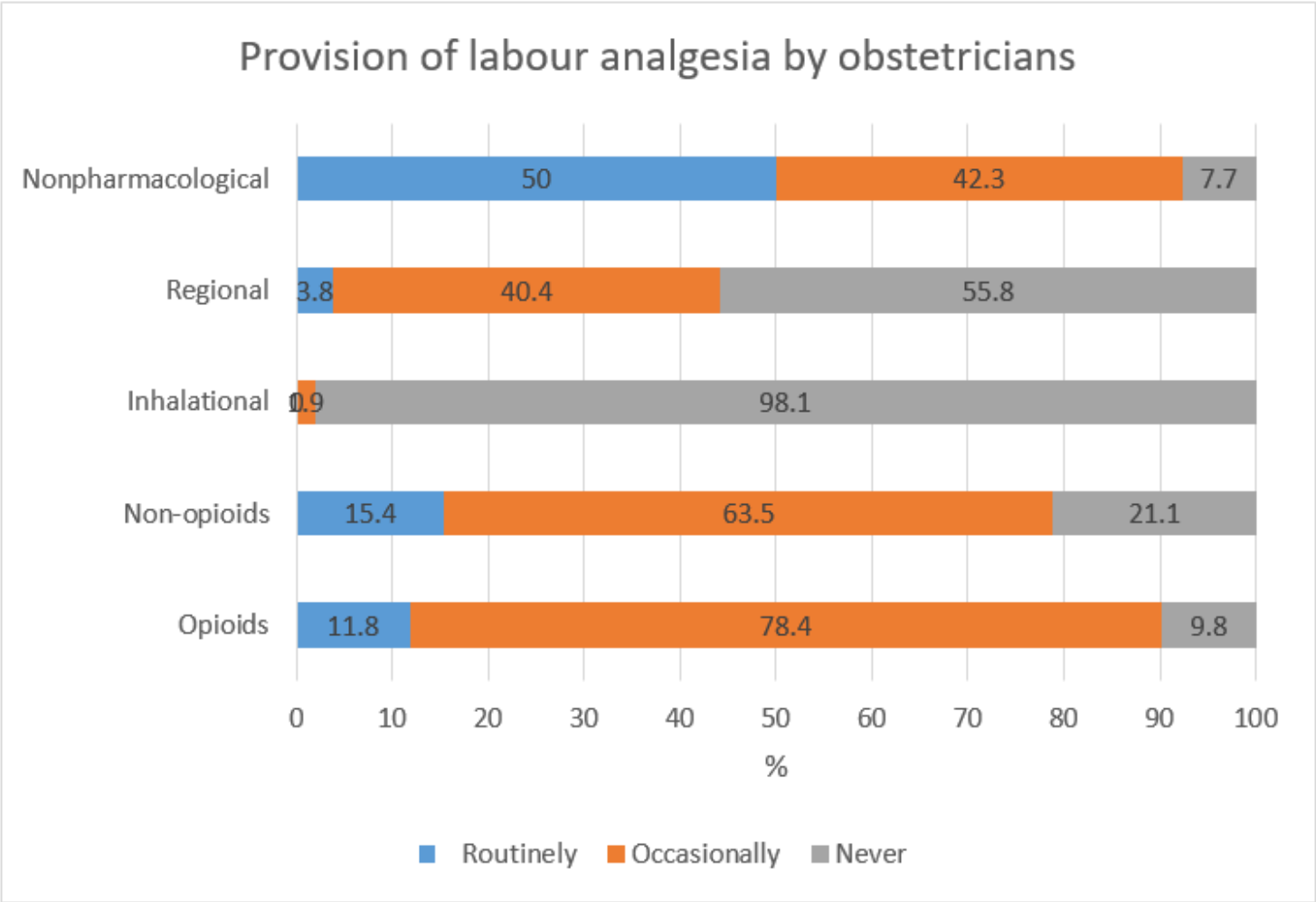

Figure 3

Frequency of provision of labour analgesia as reported by obstetricians at MTRH (N=52).