East African Medical Journal Vol. 92 No. 3 March 2015
PERCEPTION OF LABOUR PAIN AMONG RURAL WOMEN PRESENTING TO A TERTIARY HOSPITAL IN KENYA
W. Waweru-Siikam MBChB, MMed, FRCA, Consultant Anaesthetist, Department of Anaesthesia and Critical Care, Moi Teaching and Referral Hospital, P.O. Box 4606, Eldoret, Kenya, E-mail: karisiika@doctors.org.uk

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W. WAWERU-SIIKA

ABSTRACT

***Background*: Childbirth results in severe pain for many women. In many hospitals in Resource-Limited Countries (RLCs), women endure the pain of labour with little or no pain relief. There have not been any studies done within 36 hours of a recent delivery to determine how rural Kenyan women perceive the pain of labour, and whether they have embraced the concept of labour analgesia.**
***Objectives*: To find out how rural women who had recently given birth at the Moi Teaching and Referral Hospital (MTRH) rate the severity of their pain, and whether the expectations of these women with regards to pain relief for labour were met.**
***Design*: A retrospective cohort study.**
***Setting*: The Moi Teaching and Referral Hospital (MTRH) post-natal wards.**
***Subjects*: Women who had had a normal vaginal delivery in the preceding 36 hours.**
***Interventions*: A structured questionnaire was administered.**
***Results*: Three hundred and eighy nine women who fulfilled the eligibility criteria were interviewed. Two hundred and eighty seven (73.8%) of 389 women rated their pain as severe to unbearable. Only 43 (11.0%) received any labour analgesia. This was in the form of an anti-spasmodic injection (Buscopan®). Thirty four (79%) of the 43 women who received an anti-spasmodic rated the pain relief obtained as good to very good. The level of knowledge of possible labour analgesia options was very low. Three hundred and thirty four (86%) of 389 women indicated that they would want to be given analgesia for future deliveries.**
***Conclusion*: The majority of rural women who give birth at the MTRH do so without any labour analgesia. Although the level of knowledge is low regarding possible labour analgesia options, the majority of these women would welcome medical intervention that would reduce their discomfort. There is need to establish a formal labour analgesia service at MTRH and to educate rural Kenyan women on the various labour analgesia options, to enable them make informed choices regarding their use.**

INTRODUCTION

Childbirth results in severe pain for many women (1). Up until the 19th century, there had been a lot of resistance to the concept of pain relief in labour in the western world. Indeed, in 1591, a prominent Scottish woman who was bold enough to ask her midwife for analgesia was put to death (2). Labour analgesia was first described in the 19th century when, at the request of the Queen's obstetrician, John Snow gave analgesic doses of chloroform to Queen Victoria (3). It was the Queen's approval of "*this blessed chloroform*" (4) that gave rise to modern day labour analgesia services. In many hospitals in RLCs however, women continue to endure the pain of labour with minimal or no medical intervention.

The pain experienced in labour ranges from moderate to severe for most women. Regardless of the severity of pain experienced, the memory of this pain gradually diminishes with time. This is probably due to the fact that the pain of childbirth is associated with a positive life event, making it decidedly different from that associated with disease, trauma or surgery. Recall of labour pain appears to be intact within 36 hours of delivery (5). Any attempts to score maternal pain in labour are therefore best validated when performed within this window of

recall. Other factors that influence pain perception include adverse maternal and neonatal outcomes, parity, age and level of preparation for childbirth.
Before the introduction of anaesthesia, post-operative pain was an inevitable consequence of surgery (3). The development of anaesthesia brought great relief to both surgeons and patients alike, and was rapidly adopted worldwide. That provision of pain relief for women in labour has not been as well established in many Kenyan hospitals whereas surgical pain suggests that there may be cultural reasons for this disparity.

Culture has a powerful influence on pain perception, coping strategies, pain tolerance and accepted pain behaviour (6). In many communities in the developing world, the pain of labour is perceived as a brief period of intense suffering that a woman must endure. Pain-related behaviour for women in labour is therefore culturally defined, and differs among the various communities. In some, women are expected to endure their pain in silence. To them, childbirth is viewed as a test of womanhood, a test of personal competence and the first act of motherhood (6). Pain however is highly subjective and, unless one asks the parturient to rate their pain, one is likely to over- or underestimate the severity of their pain based purely on behaviour. The use of pain behaviours by healthcare workers to quantify the degree of pain experienced by Kenyan women in labour is therefore likely to be highly unreliable.

Labour analgesia methods may be pharmacological or non-pharmacological. The latter may be used alone or in conjunction with pharmacological methods. Psychoprophylaxis is one commonly used non-pharmacological method and is based on the belief that the pain threshold in labour is lowered by lack of knowledge, misinformation, anxiety and fear. The philosophy of prepared childbirth therefore maintains that with education and adequate information, there is little or no need for analgesia in labour (3).

The policy of the American Society of Anaesthesiologists (ASA) is that adequate pain relief by an appropriate method, unless medically contraindicated, should be available to every patient (1). Indeed, many practitioners have long held the opinion that pain relief in labour is not only mandatory, but a basic human right (1,7). The aim of this study was to find out how rural women who had recently given birth at the Moi Teaching and Referral Hospital (MTRH) rate the severity of their pain, and to find out whether the expectations of these women with regards to pain relief for labour were met.

MATERIALS AND METHODS

This was a retrospective cohort study. The setting of the study was the MTRH post-natal ward. The study population consisted of women aged 18 years and above whose labour had ended in an uncomplicated, normal vaginal delivery in the preceding 36 hours. Exclusion criteria included women delivered by Caesarean section, women who had given birth more than 36 hours prior to contact with the research team and women whose labours had culminated in a stillbirth or other adverse neonatal outcome. A minimum sample size of 384 women was calculated to obtain a 95% confidence interval around a population estimate of 50%, at the 0.05 level. Statistical significance was set at 0.05. Structured questionnaires were administered by research assistants who used the admissions register in the postnatal wards to identify women who met the study criteria.

Analgesia options mentioned in the questionnaire were explained clearly to each participant before a response was recorded. Pain severity was assessed using a four-point scale describing pain as none/mild, moderate, severe or unbearable. A pilot questionnaire was initially administered to 20 women to test for ambiguity or lack of clarity in the questions following which some questions were modified. Data were analysed using the SPSS/PC+ MicrosoftTM (Statistical Programme for Social Sciences) computer software.

RESULTS

Ethical approval to conduct the study was obtained from the MTRH Institutional Research and Ethics Committee (IREC). Written, informed consent was obtained from all participants. One thousand three hundred and eighty nine women were admitted to the MTRH labour ward during the study period. Of these, 391 who met the eligibility criteria were interviewed. One woman was later excluded from the study as she was not of Kenyan origin.

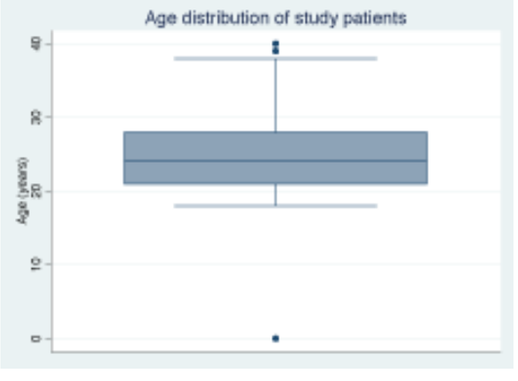
Table 1
Demographics of study population, n=390

Characteristic	
Age (years)	Mean 25.1±5.2, median 24
Parity	Mean 2.4 ± 1.8(range 1-10), median 2
Occupation	
Housewives –no.(%)	228(59.0)
Post-primary education – no.(%)	214(54.9)
Christian – no.(%)	381(98.7%)
Communities represented- no.(%)	
Kalenjin	208(53.3)
Luhya	73(18.7)
Kikuyu	67(17.2)
Other	43(10.8)

The mean age of study patients was 25±5.2 years (range 18-40) with a mean parity of 2.4± 1.8(range 1-10). Over half of the women in this study were Kalenjin. Two hundred and forty seven (54.9%) of 390 women had been educated beyond primary school level but only 57 (14.6%) of the 390 women had tertiary level education. Almost all the women interviewed were Christians.

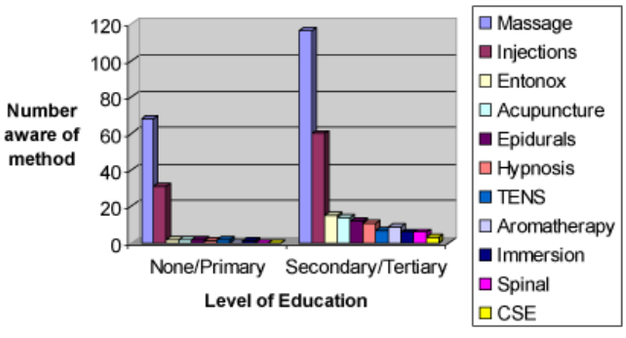
Two hundred and eighteen (55.9%) of 390 women had received some form of childbirth education during the antenatal period that prepared them for labour. One hundred and four (60.8%) of 171 of these women received this information from family and friends. Only 51(29.8%) of 171 received any childbirth education from healthcare workers during the antenatal period.

Figure 1
Age distribution of study population



One hundred and eighty four (47.3%) of 389 women correctly identified back massage as a non-pharmacological pain relief method. Ninety one (23.4%) of 390 women were aware of the existence of pain-relieving injections in labour. The level of awareness of all other pharmacological or non-pharmacological analgesia options was less than 5%. Women with secondary or tertiary level education were more likely to be aware of existing labour analgesia options than were women with no formal education or those educated only to primary school level.

Figure 2
Level of awareness of labour analgesia options



Two hundred and eighty seven (73.8%) of 389 women rated their pain as severe to unbearable. No difference was noted with respect to age, parity or community of origin. Women with secondary education were less likely to report pain as severe (p=0.011, CI-0.95, -0.122). Three hundred and forty five (89%) of 387 women found the pain of childbirth as bad or worse than expected. Seventy nine percent of these rated their pain as severe to unbearable. Forty three percent of these women were giving birth for the first time. There was no difference when we adjusted for age, parity, community of origin or level of education.

A total of 118 (30.6%) of 389 women had some form of pain relief but only 43 (11.0%) of these received intervention from a healthcare worker. This was in the form of an anti-spasmodic injection (Buscopan®). The other 75 had back massages from accompanying family members or friends. Women having their first baby were more likely to get an anti-spasmodic than women who had given birth before (p=0.026, CI 0.06, 1.08). Thirty four (79%) of the 43 who received an antispasmodic rated the pain relief obtained as good to very good. Thirty four (49%) of the 69 women who had back rubs as their sole pain relief method found the pain relief fair to poor.

Two hundred and seventy one (69.7%) of 389 women did not receive any analgesia during their deliveries. Two hundred and thirty five (86.7%) of these attributed this to the fact that they did not ask for any. Thirteen (4.8%) of the women who did not receive analgesia requested some form of pain relief but this was not provided. Only seven (2.6%) women of the 271 who did not receive analgesia chose not to have any.

Three hundred and thirty four (86%) of 389 women indicated that they would like to receive analgesia for future deliveries. Thirty five (9%) women indicated that they would not want any analgesia, while 19 were not sure if they would want any.

DISCUSSION

A significant number of women in this study reported severe to unbearable pain during childbirth. The results of this study were therefore consistent with findings in other African countries (8). The women in this study were interviewed within 36 hours of vaginal delivery during which time recall of labour pain is largely intact (5).

Despite the severity of their pain however, only a minority of the women in this study received any pain relief. A study done in Nairobi found that only 18% of the women interviewed had been offered analgesia for labour for a previous delivery (9). A study done in Nigeria also found that a significant number of healthcare providers do not prescribe labour analgesia (10). The reasons for this include the fear of prolonging labour, anxiety around respiratory depression in the newborn and a perceived higher Caesarean section rate with certain labour analgesia methods (15). The need for labour analgesia is less contentious when the woman has underlying cardiovascular or respiratory disease. However, although severe pain during childbirth is not life-threatening in healthy women, untreated labour pain has been associated with post-natal depression and post-traumatic stress disorder (1).

A small proportion of women received an anti-spasmodic injection during labour. These medications are largely used to make uterine contractions more effective during labour but the women interviewed considered them a form of analgesia. The level of pain-relief reported by the women who received this treatment was rated as good to very good in nearly 80%. A recent Cochrane review of 21 trials however found no evidence that anti-spasmodics offer pain relief. In addition, most of the studies were of poor quality, and only one study explored pain-relief as the primary end point, making it difficult to draw any meaningful conclusions (11).

Knowledge levels of possible pain relief options were poor in the women we interviewed. In contrast, a Kenyan study conducted in urban women found an awareness level of 56% (9). Our study population however consisted of rural, relatively young women, only about half of who had had formal education beyond basic primary education. Most women attributed the fact that they had not received any analgesia in labour to their own lack of knowledge. These findings were similar to those found in a Nigerian study, in which a significant proportion of women were not offered analgesia in labour (12). Education of all women during the antenatal period is therefore crucial, to fill in these gaps in knowledge and ultimately empower women to request for analgesia where this has not been offered to them. Healthcare professionals however have a duty of care towards women in labour, regardless of their level of education, to ensure that their needs are met, and that appropriate pain-relief techniques are discussed and offered.

Since this study was performed, intramuscular opioids such as tramadol and pethidine are increasingly being prescribed by obstetricians at MTRH. This practice is inconsistent however, and not standardised. In addition, opioids are sedating and may cause respiratory depression in the newborn. Tramadol is also known to cause nausea and vomiting and needs to be co-administered with an anti-emetic. Some RLCs have explored the use of intravenous paracetamol and found it to be as efficacious as tramadol but with a better side effect profile (13). However, a recent Cochrane review of over 54 studies that looked at over 7,000 women found the pain relief provided by parenteral opioids for instance to be only moderate at best, yet are associated with adverse effects (14).

Epidural analgesia is the gold standard of care for the relief of pain in labour due to the high maternal satisfaction rates reported worldwide, with minimal effects on the newborn. Trials comparing neuraxial techniques, entonox and parenteral opioids have consistently demonstrated the superiority of neuraxial techniques in relieving the pain of labour (15). Although epidurals have been associated with prolonged second stage of labour and a possible increase in instrumental deliveries, they do not lead to an increase in the Caesarean section rate as had previously been thought.

Establishment of a labour epidural service has however not been aggressively pursued in many RLCs due to the costs involved, as an epidural service is expensive to set up and maintain. One option that has been proposed for RLCs includes reusing autoclavable epidural needles in order to mitigate the cost of providing such a service (16). Unfortunately however, this would only work for single-shot epidural techniques, and these provide relatively short-lived periods of pain relief. The need for sufficient numbers of suitably trained anaesthetists to provide a safe epidural analgesia service is another challenge for RLCs. This is not insurmountable however, as Nigeria and India have shown.

Over 85% of the women in our study expressed the desire for labor analgesia for future deliveries. This finding was similar to the 90% found in women in Nairobi (9). Our study and that of the Nairobi cohort demonstrate that the desire for pain relief among Kenyan women cuts across all cultures and levels of education.

It is important to appreciate that not every woman needs or desires analgesia in labour. Indeed, in RRCs, a number of women have gone back in search of the 'natural' childbirth experience (17). Non-pharmacological options such as water baths, music, massage and accupuncture provide relief to those who prefer to avoid what has been termed 'medicalisation' of childbirth (18). The difference here though is that the women in RRCs are given choice. Their elaborate birthplans describe in detail how they would like to go through their labours, and at what point if any they will accept medical intervention. What we advocate is that Kenyan women be given the option to receive pharmacologic pain-relieving options when in labour, for those who find the 'natural' childbirth experience unbearably painful.

African cultural practices that revolved around painful events have evolved in recent years. It is now widely accepted in many communities for instance that offering pain relief for male circumcision by performing it under local anaesthesia does not diminish the importance of this rite of passage (19). Kenyan women should not be expected to endure the pain of childbirth in this day and age simply because that is the way it has always been.

The American College of Obstetricians and Gynecologists and the American Society of Anesthesiologists state ,"There is no other circumstance where it is considered acceptable for an individual to experience untreated, severe pain amenable to safe intervention, while under

a physician's care. In the absence of a medical contraindication, maternal request is a sufficient medical indication for pain relief during labour" (1).

ACKNOWLEDGEMENTS

Dr. Violet Naanyu-Ayah for her assistance with data analysis and Dr. Thomas Chokwe for reviewing the manuscript.

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