LABOUR PAIN RELIEF: SURVEY ON THE AWARENESS OF METHODS AND ATTITUDE AMONG HEALTH CARE PROVIDERS IN THE GAMBIA

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Department of Obstetrics and Gynaecology

LABOUR PAIN RELIEF: SURVEY ON THE AWARENESS OF METHODS AND ATTITUDE AMONG HEALTH CARE PROVIDERS IN THE GAMBIA.

By

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A Dissertation Submitted in Partial fulfillment of the requirements for the Degree of Master of Medicine (Obstetrics and Gynaecology)

Muhimbili University of Health and Allied Sciences
October, 2019

CERTIFICATION

The Undersigned certifies that he has read and hereby recommends for acceptance by the Muhimbili University of Health and Allied Sciences, a dissertation entitled ***"Labour pain relief: Survey on the awareness of methods and attitude among health care providers in the Gambia",*** in fulfillment of the requirements for the Degree of Master of Medicine (Obstetrics and Gynaecology) of Muhimbili University of Health and Allied Sciences.

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Prof. H.N. Mgaya

(Supervisor)

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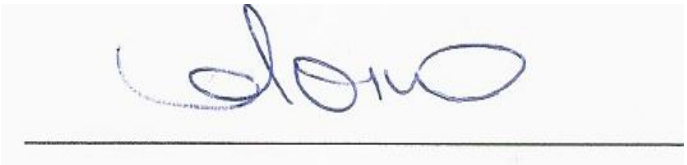
Date



Dr. Patrick Idoko

(Co-supervisor)

DECLARATION AND COPYRIGHT

I, **Jose T.K. Green Harris** declare that this **dissertation** is my own original work and that it has not been presented and it will not be presented to in any other university for a similar or any other degree award.

Signature _____Date_____

ACKNOWLEDGEMENTS

I thank God through Jesus Christ for the grace to accomplish this study.

The study would not have been complete without the dedicated supervision of my supervisor, Prof Hans Mgaya. I sincerely thank him for his guidance and timely corrections during preparation of the proposal and report writing. I am grateful for his pivotal role as my teacher, supervisor and mentor.

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Special thanks and appreciation to my beloved family for their prayers, moral and financial support.

DEDICATION

This Dissertation is dedicated to My Beloved Parents, Mrs Phebean L.M. George-Harris and Hon. Jose T.K. Green-Harris, for their unending love and support throughout my life.

To my wife Inola D. Green Harris, My son- Anthony G.N. Green Harris and daughter- Phebean E.D.B. Green Harris for the love, support and patience whilst I was away studying. I love you all.

ABSTRACT

Background: The joy and fulfillment of delivering a healthy baby cannot be overemphasized though it can be a painful experience for women. In high income countries, pain relief is an integral part of intrapartum care, however in low and middle income countries like the Gambia, it is overlooked due to the debate over the need, its benefits, disadvantage, traditional beliefs and practices. This study aimed to determine the awareness of methods and attitude to pain relief in labour among obstetric health care providers in the Gambia.

Methodology: A descriptive cross-sectional study was conducted, 285 participants were sampled from 22 health facilities of different levels in The Gambia using multi stage sampling technique. Self-administered structured close ended questionnaires inquired on health care provider's socio-demographic information, awareness and concerns regarding labour pain relief and attitude towards pain relief in labour. A likert scale was used to measure their attitude concerning labour pain relief. Data were coded, entered and analyzed by SPSS version 23.0. Continuous variables were summarized using mean and standard deviation. Categorical variables were summarized using proportions. Frequency tables and bar charts were used to display summary of analyzed data. Study lasted 6 weeks.

Results: Respondents were 285 obstetric health care providers of different cadre, from tertiary-121(43%), secondary-118(41%), and primary-46(16%) health facilities. The mean age of participants was 33 (SD-7) years. More than half were aware of pethidine (59%), epidural (58%) and morphine (51.9%) as pharmacological labour analgesia. Popular non-pharmacological methods were touch and massage (76%), continuous emotional and physical support during labour (68%), and breathing techniques (55%). Attitude to labour pain relief was positive among respondents-88.8%, and 72% felt that pain relief should be routinely offered to women in labour, 97% felt that continuous emotional support was needed during labour. Concerns about labour pain relief of which respondents were aware of are that it affects the baby's breathing and reduce uterine contraction.

Conclusion-There was a high proportion of obstetric health care providers unaware of labour pain relief methods both pharmacological and non-pharmacological. The commonly mentioned methods were the pain relief methods commonly used in the setting. This may be due to the gap in the training midwifery curriculum, insufficient time and material dedicated to the concerned topic in the training of health care providers. The attitude towards relieving labour pain is strongly positive.

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LIST OF ABBREVIATIONS

EFSTH	-	Edward Francis Small Teaching Hospital
HCP	-	Health Care Provider
LMIC	-	Low to Middle Income country
OBGYN	-	Obstetrics and Gynaecology
SPSS	-	Statistical Package for Social Scientist
TENS	-	Transcutaneous Electrical Nerve Stimulation
WHO	-	World Health Organization

OPERATIONAL DEFINITIONS

Health care providers: are obstetrician gynaecologists, registrars, medical officers, house officers, midwives and nurses working in the department of Obstetrics and Gynaecology.

Awareness of labour pain relief: health care provider's general awareness of pain relief methods/agents during labour, pharmacological and non-pharmacological alike and awareness of health care provider's concerns regarding labour pain relief/analgesia.

Attitude: is the health care provider’s feelings about labour pain relief, continous support during labour and its benifits to the paturient.

1.0 INTRODUCTION

1.1 BACKGROUND

Childbirth is naturally a fulfilling life event, yet it can be a very painful experience for women. Majority of high income countries (HIC) have incorporated pain relief to be an essential part of intrapartum care and all women have a choice and access to a range of pain relief options during labour (1). There are many methods to relieve labour pain, both pharmacological and non-pharmacological. Ideally pain relief method should be safe for both the mother and the fetus, offer adequate relief, effective, timely, efficient, equitable, women-centered and ideally should not interfere with labour or the freedom of the parturient (2). Non-pharmacological options include antenatal counselling about labour, continuous support of a companion or doula, directed breathing and relaxation techniques, massage, labouring in water, acupuncture, hypnosis and the use of transcutaneous electrical nerve stimulation (TENS). Pharmacological options include oral tablets (paracetamol, codeine or tramadol), inhalation analgesia (nitrous oxide), intravenous and intramuscular opioids (pethidine or diamorphine) and various types of local (para-cervical and pudendal blocks) and regional analgesia (3).

The experience of labour pain is subjective and differs from one woman to another. In view of this, every woman should have a choice of labour pain relief according to her preference, individual circumstances and availability of labour analgesia (1). WHO recommends pain relief for healthy parturients requesting pain relief depending on their choice (4). American college of obstetricians and gynaecologists notes that there is no other circumstance in which it is considered acceptable for an individual to experience severe pain, amenable to safe pain relief (pharmacological or non-pharmacological), while under a physician's care (5). Thus in high income countries, pain relief in labour is readily offered to a parturient. In low and middle-income countries (LMIC), the continuous support of a companion during labour is the most common form of pain relief. Providing further pain relief is often overlooked owing to the controversy over the need, advantages and disadvantages of labour pain relief, especially pharmacological options, traditional beliefs, attitude and practices of providers (6). Lack of awareness, misunderstanding regarding acceptability, safety and availability of pain relief options are considered to be the main reasons why women in many LMIC do not receive labour analgesia (6,7).

The Gambia is a low income country in West Africa with an estimated population of two million and has one of the highest maternal mortality ratios in the world - 706 per 100 000 live birth (8). The proportion of women who attend at least one antenatal visit is eighty-six percent (86%) and fifty-six percent (56%) of births are attended by a skilled birth attendant working in healthcare facilities (9). Majority of the women state that they prefer having a health worker attending their childbirth: of the women who have their birth attended by a traditional birth attendant, only few have intentions to give birth at home (10). Women complain of severe pain during labour and often request for help to ease the pain.

Health care providers have an important role to play in supporting women's choice and access to pain relief options during labour. A woman's desire for and choice of pain relief during labour is influenced by many factors; personal expectations, support from HCPs, awareness of HCPs on available means of labour pain relief, quality of the relationship between the woman and the HCP and the woman's involvement in decision making (11).

In many LMIC, HCPs awareness of the need for labour pain relief and the possible choices of labour pain relief is not well documented. In public hospitals in The Gambia, pain relief in labour is infrequently given, the parturient may be encouraged to recite spiritual verses as tradition dictates. Most primigravids come to labour without prior counselling and thus they have no clue of what to expect during labour, how to counteract or ease labour pain. In the lives of several Gambian women, the conditions surrounding childbirth can potentially promote unhappiness and distress (12).

The curriculum for registered nurse midwifery training in West African Anglophone countries has no specific module on pain relief/analgesia during labour. This topic is covered under the second module referred to as normal midwifery for a period of one hour. State enrolled nurse and community health nurse midwifery training curriculum in The Gambia falls short of the aforementioned topic. During OBGYN rotation of medical students only one session lasting 45 minutes is dedicated to labour pain analgesia (13).

This research was therefore conducted with the aim of exploring HCPs awareness and attitudes towards pain relief for women in labour in The Gambia.

1.2 LITERATURE REVIEW

1.2.1 Awareness of pain relief in labour among obstetrics healthcare providers.

There is a considerable amount of literature on the awareness of pain relief in labour among obstetrics healthcare providers. Many studies focused on the overall awareness of common relief agents and the methods used, from most popular choice to the least popular choice.

Studies from North America report high awareness of labour pain relief reflecting an interplay of advanced technology, knowledge and values among obstetric HCPs. Pharmacological methods are more widely used than non-pharmacological methods (14). As of 2001, a twenty-year update on obstetric analgesia highlighted remarkable increase in awareness of labour pain relief among HCP in the USA. It was found that in 2001, of 378 hospitals with more than 200,000 deliveries per year, that were surveyed, only 6%-12% of women did not receive labour analgesia. Thirty four percent had parenteral analgesia, 2% para-cervical analgesia and 51% epidural analgesia. Non-pharmacological methods were known by majority of HCPs but not used widely as patients opted for pharmacological methods (14). Simkin and O'hara reviewed the available literature in the USA in 2002 and found that most reports show high level of awareness of labour pain relief among obstetric HCPs, almost up to ninety percent preferring epidural anaesthesia while non-pharmacological methods are less widely used (15).

Studies from Europe, Australia and South America report high level of awareness although less than what was found from the USA and Canada. A systematic review of literature across European nations has demonstrated high awareness of pain relief during labour with the use of epidural analgesia increasing while the use of pethidine and other parenteral opioids is decreasing (16). One study in Australia found that 80.4% of participants (midwives) were aware and applied warm packs to the perineum to relieve labour pain (17). Another report from Australia found that 42.5% of midwives who participated were aware and used sterile water injections to relieve pain in labour, of the remaining 57.5% which did not use sterile water injection as labour pain relief, 82.5% were aware of this method (18). Most studies from Brazil highlighted the awareness and use of non-

pharmacological methods to relieve labour pain such as massage, breathing techniques and encouraging movement (19).

Reports from Asia highlight similar high proportions of awareness of pain relief in labour amongst HCPs especially non-pharmacological approaches. A study conducted among 44 HCPs from 9 centres in Japan found that majority were aware of the pain relief methods. They preferred non-pharmacological approaches including birth pool, aromatherapy, massage, emotional support by companion, listening to music and breathing techniques (20). Qian and colleagues collected provider's views about pain relief during labour across China and found that majority were aware of pain relief during labour (21).

Reports from Africa demonstrate variable levels of awareness about pain relief during labour and variations in the methods used to relieve pain during labour ranging from pharmacological to non-pharmacological approaches. In their multicentre cross-sectional study with 95 respondents, Ogboli-Nwasor and colleagues from Nigeria reported that more than 85% HCPs were aware of systemic opioids as a method of pain relief during labour whilst the least popular methods were acupuncture and hypnosis. Sixty five percent of respondents were aware of epidural analgesia which is considered to be a gold standard of pain relief during labour (22). A report from Ethiopia that included 164 respondents pointed out that only 75% of obstetrics HCPs from three public hospitals were aware about pain relief during labour, many of them (57%) were not supportive of their use owing to their concern for adverse effects of drugs used. Eighteen percent (18%) of all respondents reported using tablets for pain relief, 23% injectable and 6% regional analgesia (23).

One study in Ghana reported that of 27 midwives who were enrolled, all were aware that labour pain can be relieved using religious artifacts such as religious herbal concoctions, drinking consecrated/holy water and watching pastor's pictures. Other religious methods used include listening to radio or television religious programs, whilst others were instructed to recite holy books verses (24).

1.2.2 The attitude of obstetric healthcare providers towards labour pain relief.

A growing body of literature has evaluated the attitude of obstetric health care providers towards pain relief in labour.

Reports from North America point out that majority of obstetric HCPs have positive attitudes towards labour pain relief however, some studies have highlighted growing concerns among HCPs over an increasing number of clients who desire obstetric analgesia (25). A survey designed to explore the use of epidural analgesia and attitudes towards epidural analgesia among members of the American College of Nurse-Midwives found that 53% of HCPs have a negative attitude over the wide use of labour analgesia, 39% remained neutral and 8% had positive attitude. Majority of respondents who had negative attitude described labour pain as a valuable experience for a woman (26). In their survey to assess attitudes of obstetric HCPs across Canada, Klein and colleagues found that majority of obstetric HCPs agree that epidural anesthesia is the most comfortable technology although they agreed that it interferes with the normal process of labour. Majority of midwives strongly agreed with the provision of non-pharmacological labour pain relief by doulas (25).

Studies from Europe, Australia and South America also point out positive attitude of HCPs towards labour pain relief although variations in methods of preference exist more in these countries than in North America. Ninety one percent (91%) of midwives from an Australian study had positive attitude towards perineal warm packs application to relieve labour pain (17). In another study from Australia 42.5% of midwives had positive attitude to use of sterile water injection in relieving labour pain (18). Majority of HCPs across Brazil had positive attitude towards use of non-pharmacological methods to relieve pain in labour (19). Preference towards non-pharmacological methods for labour pain relief has been noted in Asia. Majority of HCPs were found to have positive attitudes towards labour pain relief among 44 respondents from 9 centres in Japan. In this study only 4 out of 9 centres provided epidural analgesia for pain relief, but only in specific cases where there is a 40-50% chance of providing epidural analgesia or following a woman's demand for epidural analgesia to be administered (and this was 10% of the number of parturients in the above mentioned four centre). Majority preferred non-pharmacological methods (20). In an assessment of provider’s attitude towards labour pain relief in China, Qian and colleagues

reported that HCPs preferred to employ one method of pain relief in cases of severe pain due to the fact that women tend to lose energy and cooperation in the process of hard cry (21). Another study in Shanghai highlighted the negative attitude of HCPs towards pain relief in labour and, attributed this to the large issue of resource constraints (27).

Studies from Africa demonstrate that many obstetric HCPs have positive attitudes towards pain relief in labour but there exists a conflict between their positive attitudes and the actual practice. An overwhelming majority of HCPs (94.8%) agreed that pain relief is needed during labour as highlighted by multicenter study that enrolled 95 respondents in Zaria, Nigeria. However, there is a huge conflict that was noted between this positive attitude and the actual practice where less than half (48.4%) provided any pain relief in labour. Most of these HCPs (54.5%) had no reason for not administering analgesia during labour while others pointed to lack of skills, unaffordability, lack of equipment and unavailability of analgesia as their reasons for not administering analgesia during labour (22). A report from Ethiopia with 164 respondents that covered three public hospitals in different settings found that 77% of obstetrics HCPs agreed that pain relief should be provided during labour. Of the 24% of HCPs who did not think pain relief should be provided during labour pointed out that labour is a natural process (38%), pain relief will prolong labour (19%), pain relief will affect the baby in a negative way (17%) and 20% had concerns that pain relief will cause labour complications (23).

In some parts of Africa, religious beliefs have received general acceptance among obstetric HCPs regarding labour pain. One study that enrolled 27 midwives in Ghana to assess their attitude to pain relief during labour in relation to their religious beliefs found that all religions had a belief that labour pain carried some form of curse from God and they widely acknowledge the role of prayers in labour (24).

1.3 PROBLEM STATEMENT

In The Gambia, pain relief in labour is inconsistently and inadequately offered with non-pharmacological methods of pain relief such as parturient ambulating within the labour ward, changing their positions on the bed, reciting spiritual verses being the most practiced in public hospitals. Most primigravida start labour without prior counseling and are uninformed of what to expect during labour, how to counteract or ease labour pain and what are the possible options to relieve labour pain. The curriculum for registered nurse midwifery training in West African Anglophone countries has no specific module on pain relief/analgesia during labour. This topic is covered under the second module referred to as normal midwifery for a period of one hour. State enrolled nurse and community health nurse midwifery training curriculum in The Gambia falls short of the aforementioned topic. During OBGYN rotation of medical students only one session lasting 45 minutes is dedicated to labour pain analgesia (13). Prior studies have not been conducted in Gambia to investigate awareness and attitude of HCPs towards pain relief in laboring women. In LMIC there exists a contradiction regarding the positive attitude towards labour pain analgesia and the actual practice where less than half (48.4%) are provided any pain relief during labour (22). Majority of HCPs are not well aware of available modalities for pain relief during labour and the decision towards relieving pain in a laboring woman is much affected by their norms and culture (23). Thus conditions surrounding childbirth in Gambian women can potentially promote unhappiness and distress (12) and significantly accounts for low number of childbirths attended at health facility (28).

1.4 RATIONALE OF THE STUDY

Memory of pain during birth without pain relief is associated with a negative birth experience. The ability to cope with labour pain and to have support during labour decreases the negative experience. HCPs differ in their approach to labour pain relief. Reports from Africa highlight the background of controversy over the need, advantages and disadvantages of pain relief, notably pharmacological options among HCPs. More than a half of laboring women in low resource countries have unmet needs of analgesia during child births, despite this only 50% to 75% of HCPs are aware of enough options of pain relief during labour and their decision and practice in relieving labour pain is quite insufficient. This study was conceived to assess the awareness and attitude of HCPs towards labour pain relief in Gambia which will pave the way in addressing the gap of practice on pain relief in laboring women. This will be one of gearing efforts towards achieving universal accessibility of analgesia during labour which might eventually improve experience of labour and promote women to deliver in health facilities. Analysis of the data will provide baseline information for larger future studies.

1.5 RESEARCH QUESTION

1. What is the awareness of labour pain relief methods and attitude of obstetric HCPs towards labour pain relief in The Gambia?

1.6 STUDY OBJECTIVES

1.6.1 Broad objective

To determine the awareness of labour pain relief methods and attitude to pain relief in labour among obstetrics HCPs in The Gambia.

1.6.2 Specific objectives

1. To know the proportion of obstetrics HCPs in The Gambia, aware of the different pain relief methods during child birth.
2. To describe the common methods of pain relief during child birth of which obstetrics HCPs are aware.
3. To describe the attitude of obstetric HCPs towards labour pain relief in The Gambia.

2.0 METHODOLOGY

2.1 Study Design

It was a descriptive prospective cross-sectional study, involving 285 obstetrics HCPs that were recruited from 22 different health facilities**.** Study lasted six weeks from the 10th of October 2018 to the 14th of November 2018.

2.2 Study setting

The study was conducted in health facilities providing obstetrics care in different areas (urban, peri-urban and rural) in The Gambia. The Gambia is a low income country in West Africa with an estimated population of two million and maternal mortality ratio of 706 per 100,000 live births (8). The health care system in Gambia is built around three levels namely primary, secondary and tertiary level health care systems. Primary health facilities focus on villages with a population of over 400 individuals. At this level of health care, traditional birth attendants and community health midwives are trained and allowed to provide midwifery service to the community and refer patients to the higher-level facilities when necessary. Secondary level health facilities which is comprised of district hospitals, major health centers which provide inpatient and outpatient services. It is the level that is managed by doctors, resident midwives, nurses and ancillary staff. Tertiary level health facilities are the highest level of health care which provide consultancy services comprised of 7 government referral hospitals including Edward Francis Small Teaching Hospital, Kanifing General Hospital, Farafenni General Hospital, Bansang Hospital, Bwiam General Hospital, Bundung Maternal and child health hospital, Brikama Hospital, as well as the Medical Research Council which is funded by the UK government.

Gambia has physicians density of 0.107 (per 1000 population), nursing and midwifery personnel density of 0.865 (per 1000 population) (28). Deliveries are usually conducted by maternity staffs including nurses, midwives and doctors who usually intervene in complicated labour. Doctors range from house officers, medical officers, to trained medical officers in emergency obstetric care, registrars, specialists and consultants. There are 209 doctors in The Gambia, with a proportion of medical officer per 10,000 population of 1.1 and majority of obstetrician/gynaecologist are centered in urban areas (9).

2.3 Study Participants

Health Care Personnel in the department or field of obstetrics and gynaecology in the selected health facilities were involved.

2.4 Inclusion criteria

All Health care providers working, in the department of Obstetrics and Gynaecology were included.

2.5 Exclusion criteria

Anesthetists and pharmacist were not included in this study.

2.6 Sample Size

The sample size was estimated using the Leslie Kish formula.

$$n = \frac{z^2 p(100-p)}{\varepsilon^2}$$

Whereby;

n = sample size

z = standard normal deviate = 1.96 for 95% confidence interval

p = expected proportion with characteristic of interest; prevalence 79% of health care providers who knew of pain relief in labour. The majority (79%) of respondents expected women to feel pain in labour (23).

ε = margin of error = 5%

Therefore,

$n=1.96\times1.96\times79(100-79)/ (5\times5)$

n=255.

When adjusted to 10% non-response rate = 255/0.9 = 283.3

Rounding off gives-285

Sample size 285 HCPs from the department of OBGYN in health facilities providing obstetrics care.

2.7 Sampling technique

Selection of health facilities from the 3 tiers namely primary, secondary and tertiary health facilities were all from government facilities as services in government facilities is usually uniform**.** Multistage sampling technique was used. First stage involved random selection of health facilities in which 6 facilities were selected from tertiary level, 6 from secondary level and 10 from primary level health facilities. At this stage primary, secondary and tertiary level health facilities were listed separately and thereafter 6 facilities chosen randomly (picking from a hat) from tertiary and secondary levels respectively and 10 facilities from primary health level. Six health facilities from tertiary and secondary levels respectively and 10 from primary health facility level were chosen, owing to the fact that the bulk number of Obstetric HCPs are found in tertiary and secondary health facilities, and thus sample size could be reached. Second stage involved convenient sampling of obstetric HCPs. That is to say, those present at the site both day and night shift whilst investigator was on the ground, from each selected facility who meet the inclusion criteria were included to reach the target number needed from each facility. The required sample size was attained.

2.8 Data collection method

Data on awareness and attitude of health care providers was collected using self-administered close ended structured questionnaire adopted and modified from a similar study done in Nigeria (22)**.** The researcher and 22 trained research assistants, one from each facilty sought consent and administered the questionnaire to the obstetric HCPs to fill in appropriate responses based on the objectives of the study. Initial plan to recruit participants evenly from each of the 22 health facilities was aborted owing to the sitiuation on the ground. There was an uneven distribution of HCP's among health facilities. Therefore a minimum of 4 obstetric HCPs were recruted from each of the 10 primary health facility level because on average in primary health centres, there were betwwen 4-6 HCPs serving the labour ward, ANC and family planning unit. The remaining participants were drawn from secondary and tertiary health facilities, a minimum of 18 HCPs were recruted from each of the twelve facilities making up the secondary and tertiary facilities selected. Questionaires were crossed checked upon complition to be filled and before

collection to ensure that every sectioned was answered, this is due to the fact that investigator would have found it difficult to return to the ground after leaving.

2.9 Training of research assistants

Training of the research assistants was conducted by the principal investigator. Research assistants were trained from all the regions in the Gambia upon arrival in the region, prior to the commencement of data collection. A total number of twenty two research assistants who were HCP, one from each of the selected facilities were trained. The purpose of the study was explained to the research assistants. They were trained on administering the questionnaire to collect data, on addressing any question that participants may pose concerning the questionnaire. The research assistants also helped to catch the night shift midwives and nurses. During the data collection, research assistants complemented the work of the principal investigator by also distributing the questionnaires, addressed questions from participants, collected the filled out questionnaire and crossed checked that each section of the questionnaire was properly filled, else participant's attention was called so that the unanswered section was duly answered.

2.10 Data collection tools

A closed ended structured questionnaire adopted and modified from a similar study done in Nigeria was used (22). Regarding the modification, more labour pain releif methods were listed, attitude questions were expanded to capture the feelings of the respondents in relationship to labour pain relief. Popular concerns about labour pain relief were also listed. The questionaire fitted the Gambian context as the health care system arrangement is almost the same in the African settings where this studywaspriorconducted.The questionnaire was divided into three partscontaining socio-demographic information of the study participants, their awareness and attitudes towards labour pain relief.

The socio-demographic information included: age in years, gender, position/cadre, years of experience, affiliation of respondent (hospital level), geographical location of the hospital.

The awareness of pain relief during labour was centred on general awareness about existence of pain relief methods during labour, source of information about labour pain relief, awareness of methods/agents of labour pain relief and awareness of health care provider's concerns regarding labour pain relief/analgesia.

The attitude questions on pain relief during labour employed the Likert scale (from strongly agree to strongly disagree).

Attitude questions assessed participants views about need for continuous support and pain relief during labour, views on the effect of pharmacological analgesia on both the mother and foetus.

2.11 Piloting data collection tool in Gambian setting

Piloting of the structured closed ended questionaire was carried out in two health facilities one from secondary and another from tertiary health facility. Areasof improvement such aswordings of few questions were changed to make the question more explicit, typographical errors were also rectified before proceeding with data collection process. The test was done as a pilot of 5% of the sample size, meaning that 14 HCPs meeting the inclusioin creteria were usedin the pilot study. The pilot study participants were not included in the study sample.

2.12 Data entry and analysis

Data was coded, entered, cleaned and analysed by SPSS version 23.0. Continuous variables such as age and years of experience of HCP were summarized by mean and standard deviation. Categorical variables such as awareness of labour pain relief methods, awareness of HCPs concerns regarding labour pain relief, attitude towards labour pain relief being routinely offered to women in labour, attitude towards need for continuous emotional and physical support service in childbirth care, was summarized using proportions. Frequency tables, bar charts and a pie chart were used to display summary of analysed data. Awareness of each method of labour pain relief was analyzed by the frequency and percentage of respondents who knew that particular method. Analyzed pharmacological methods were grouped into one table and so too were the non-pharmacological methods. Attitude was measured using the likert scale, which included options ranging from strongly agree, agree, neutral, disagree to strongly disagree. For each attitude question, the options to the questions were first analysed using the frequency and percentage of respondents who choose the different options. Furthermore a composite score was done. The composite score was achieved by coding each option on the likert scale from 1-5 for positive statements, meaning strongly agree coded as -1, agree as - 2,

neutral as - 3, disagree as - 4, and strongly disagree as - 5. For negative statements the reverse was done (i.e. coded from 5-1), from strongly agree - 5, agree - 4, neutral - 3, disagree - 2, to strongly disagree - 1. There were 8 attitude questions and as neutral was coded as 3, this meant that a neutral stance on all 8 question would be 8 multiplied by 3 equaling to 24. A composite score was done where one to 23 was coded as positive attitude, 24 as neutral, 25 to 40 coded as negative attitude.

2.13 Ethical Clearance

The ethical clearance was obtained from Muhimbili University of Health and Allied Sciences, The Senate Research Publication Committee, University of the Gambia Research Publication Committee. Permission to conduct the study was obtained from the director of health services by written document, and verbally from chief executive officers of the different Health facilities in The Gambia included in the study and head of department of each maternity unit. Anonymised questionnaire was used, written informed consent obtained from participants.

2.14 Ethical Issues

The participant's information remained confidential by ensuring that particulars do not appear on the checklist during data collection and data analysis. Written informed consent was sought from HCPs to participate in the study. Respondents had the right to withdraw from the study at any time when they wish so without fatal consequences. Data collected from the participants were used for the purpose of this study only and not otherwise and if published will not bear any person's particulars or identity.

3.0 RESULTS

A total number of 285 obstetrics health care personnel consented and participated in this study, representing a hundred percent response rate. Pethidine-59.3%, epidural-57.9% and morphine-51.9% were the pharmacological methods health care providers were most aware of, whereas as touch and massage-76.8%, continuous emotional and physical support-68.4% and breathing techniques-55.1% are the non-pharmacological methods health care personnel were most aware of. Most-88.8% of respondents had positive attitude towards labour pain relief.

Table 1: Distribution of socio demographic characteristics of respondent and cadre

Variables	Frequencies	Percentage (%)
Sex		
Male	108	37.9
Female	177	62.1
Age		
20-24	25	8.8
25-35	163	57.3
36-40	60	21.1
41-45	23	8.1
>45	14	5.1
Years of experience		
<5	107	37.6
5-10	110	38.6
>10	68	23.9
Affiliation of hospital		
Tertiary	121	42.5
Secondary	118	41.4
Primary	46	16.1
Location of hospital		
Urban	116	40.7
Peri-Urban	95	33.3
Rural	74	26.0
Cadre of health care personnel		
Doctors	43	15.1
Midwives	171	60
Nurses	71	24.9

The mean age of respondent was 33 years (SD-7), majority were female 177(62.1%), married 186(65.3%). Mean years of work experience were 7.64(SD-5.924). The greatest proportion of respondents were from tertiary hospitals 121(42.5%) and secondary hospitals 118(41.4%). Geographically 116(40.7%) of respondents were from urban regions and 74(26.0%) from the rural areas in The Gambia. Obstetric HCP's of different cadres were represented, doctors - 43(15.1%) and midwives 171(60%).

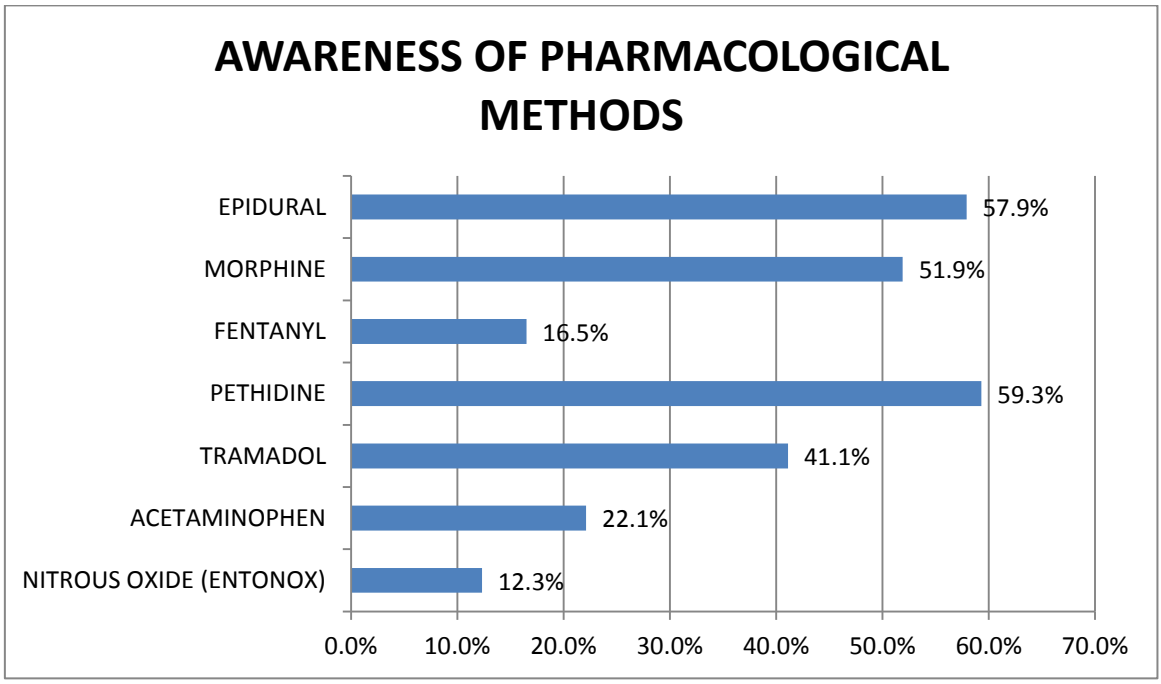

Figure 1: Shows the distribution of the responses on awareness of pharmacological labour pain relief methods.

The most commonly mentioned pharmacological methods of labour analgesia of which respondent were aware of are systemic opioids (pethidine and morphine)-59.3% and 51.9% respectively and epidural-57.9%. The least popular were nitrous oxide and fentanyl- 12.3% and 16.5% respectively.

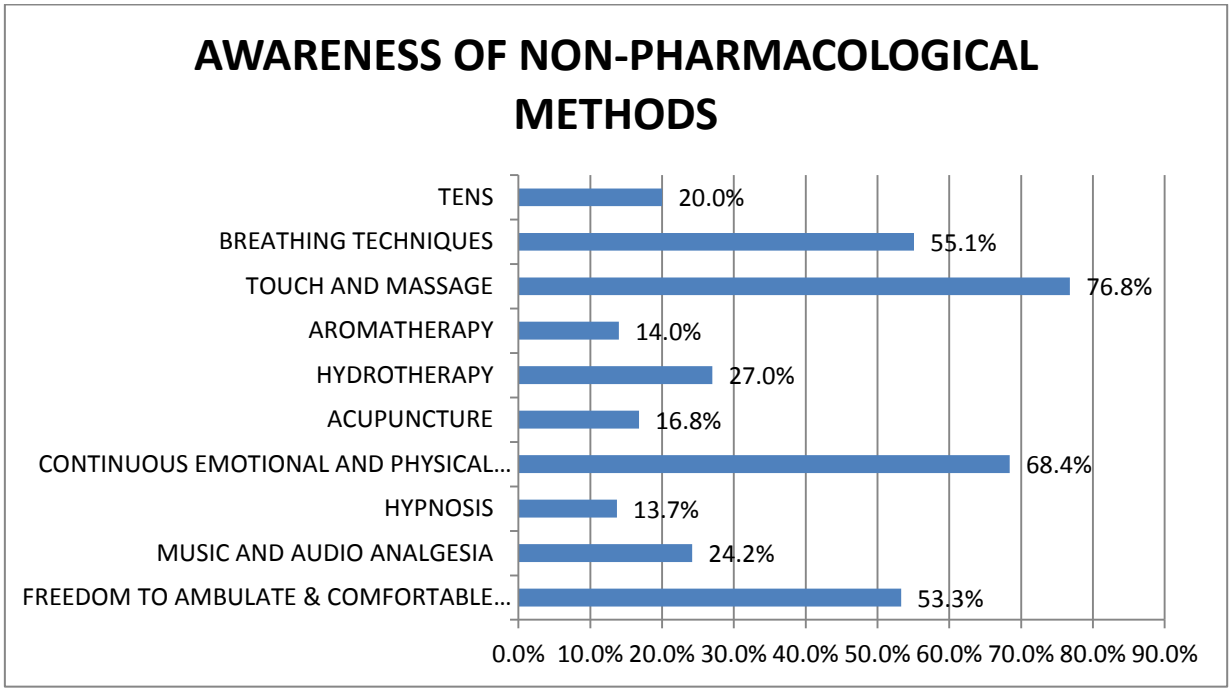

Figure2: Shows the distribution of the responses on awareness of non-pharmacological labour pain relief methods.

Amongst non-pharmacological methods, the most renowned methods were touch and massage-76.8%, continuous emotional and physical support during labour-68.4%, breathing techniques and relaxation-55.1%, whilst the least popular non pharmacological methods were hypnosis and aromatherapy with 13.7% and 14.0% respectively.

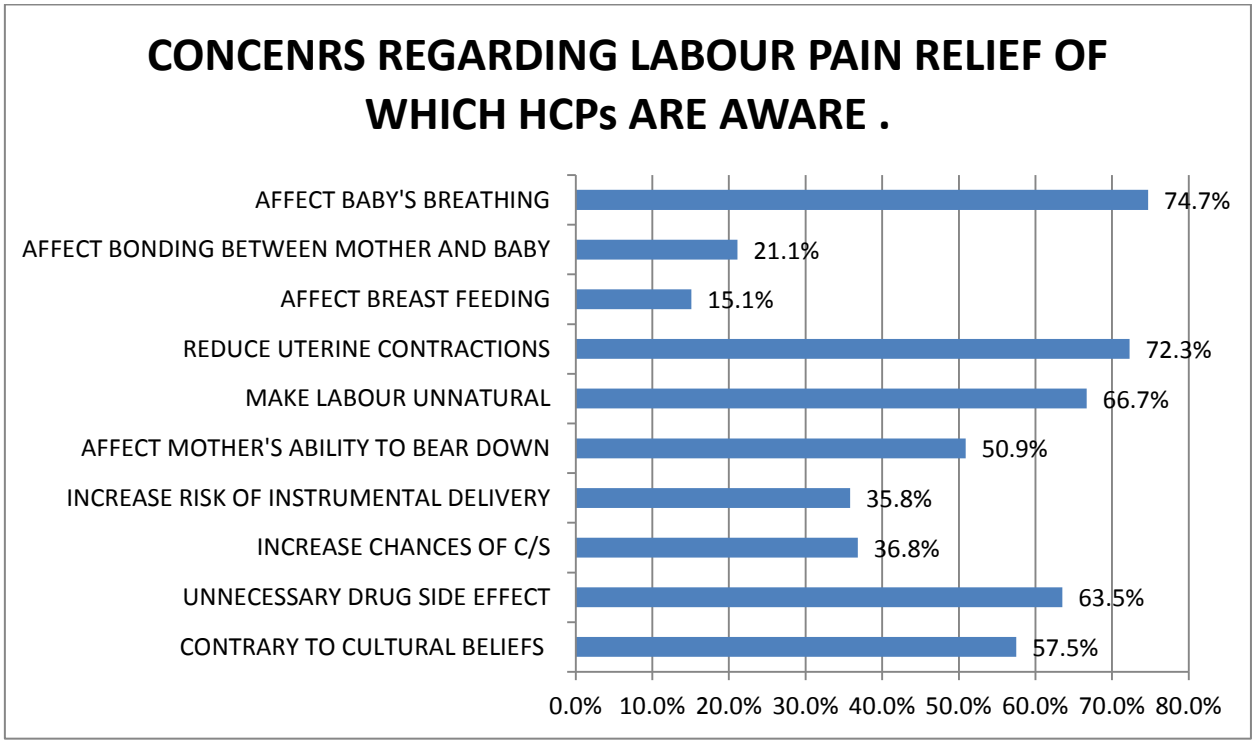

Figure 3: Concerns about labour pain relief

The study revealed concerns HCP were aware of regarding labour pain relief, with most respondents fearing it will affect the baby's breathing (74.7%), reduce uterine contractions (72.3%) and make the process of labour unnatural (66.7%), though only 21.1% had concerns that labour analgesia of any form can affect breast feeding or bonding between mother and baby (15.1%).

Table 2: HCP's attitude regarding pain relief in labour.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Labour pain relief should offered routinely to all women in labour	140 49.1%	66 23.1%	30 10.5%	40 14.0%	9 3.2%
There is a need for continuous emotional support service in childbirth care	243 85.3%	33 11.6%	5 1.8%	3 1.1%	1 0.4%
There is a need for continuous physical support service in childbirth Care	155 54.4%	67 23.5%	44 15.4%	16 5.6%	3 1.1%
Physical support during labour improve birth outcomes	129 45.3%	84 29.5%	49 17.2%	17 6.0%	5 1.8%
Emotional support during labour improve birth outcomes	196 68.8%	65 22.8%	18 6.3%	6 2.1%	0 0%
Labour pain relief (analgesics) interferes with the normal process of labour	73 25.6%	90 31.6%	43 15.1%	64 22.5%	15 5.3%
Pharmacological analgesia during labour is harmful to the mother	43 15.1%	62 21.8%	51 17.9%	95 33.3%	34 11.9%
Pharmacological analgesia during labour is harmful to the foetus	52 18.2%	90 31.6%	52 18.2%	70 24.6%	21 7.4%

Seventy two percent agreed that labour pain relief should be routinely offered to all women in labour. Two hundred and seventy six respondents (96.9%) agreed that there is a need for continuous emotional support during labour which can to a large extent improve childbirth experience. Interestingly though 142(49.8%) of respondents feel that pharmacological analgesia is harmful to the fetus.

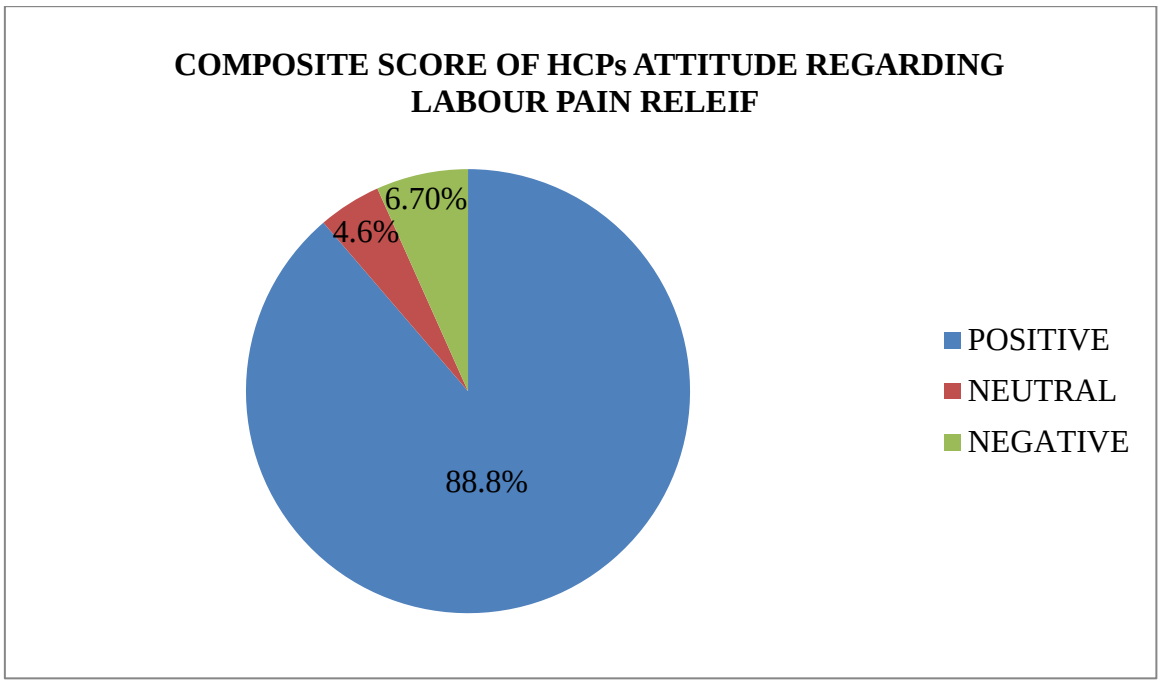

Figure 4: Shows the composite score of attitude regarding labour pain relief.

The attitude of HCP regarding labour pain relief was strongly positive, with eighty eight point eight per cent of respondents having a positive attitude towards the same. Only four point six percent had a neutral stance.

4.0 DISCUSSION

Without pain relief, labour pain undoubtedly can be one of the most intense pain a woman may experience in her life time. World health organization has strongly recommended pain relief be offered to women in labour upon their request (4). The study is the first survey done in The Gambia looking at the awareness of labour pain relief and attitude towards the same and the response suggests an overall high awareness and a positive attitude towards labour pain relief.

Regarding the awareness of pharmacological methods and agents for labour pain relief, pethidine was the most commonly mentioned method- 59.3%. This can be attributed to the fact that pethidine is widely used as a strong anti-pain in general practice in The Gambia. The findings are close to that from Ethiopia where 75% of HCP's were found to be aware about labour pain relief but that from Nigeria by Ogboli-Nwasor et al. were much higher (90%- were aware of pethidine) mainly because systemic opioids are routinely used to relief labour pain in that setting (22,23).

Epidural which is the gold standard of labour pain relief is the second most popular method-57.9%, even though it is not practiced in The Gambia and most low income countries. In north America and Europe owing to the advanced technology, there is high level of awareness and uptake of epidural anesthesia (15,16).

Amongst the non-pharmacological methods, respondents were most aware of touch and massage technique-76.8%, continuous emotional support-68.4% as means of labour pain relief and breathing techniques. Hypnosis, aromatherapy and acupuncture were the methods least aware of amongst respondents. In Nigeria Hypnosis and acupuncture were also the least popular methods (22). The infrequent practice of hypnosis and acupuncture in conventional and traditional medicine in West Africa might explain the unpopularity of these methods. The High level of awareness of non-pharmacological methods were also found in studies done in Brazil and Australia, whilst in Europe even though HCP's were aware of non-pharmacological methods, the use of pharmacological labour pain relief was more common (18,19). Awareness of pharmacological and non-pharmacological methods of labour pain relief among obstetric health care providers in The Gambia is not high and this can be attributed to the gap in the training curriculum of midwives, were only the

curriculum for registered nurse midwifery training covers an hour on labour pain analgesia/relief, other midwifery training curriculum such as state enrolled nurse and community health nurse midwifery falls short of the aforementioned topic (13).

Most HCPs agreed that pain relief should be offered during labour and 88.8% had a positive attitude towards labour pain relief. It is close to results of similar studies done in Ethiopia and Nigeria where 76% and 94.8% of respondents respectively, agreed that pain relief be offered during labour (22,23). There is a general consensus amongst obstetric health care personnel regardless of cadre or gender about the need for labour pain relief; however respondents concurrently were aware of concerns regarding labour analgesia, like pain relief could affect the baby's breathing and also reduce uterine contractions. In Ethiopia HCP's had similar concerns about pain relief methods (23).The discrepancies between view of respondents to routinely provide labour analgesia and the concerns expressed may be pointing to a deficit in knowledge on both pharmacological and non-pharmacological labour pain relief methods due to the gap in the training curriculum of obstetric health care providers in The Gambia. Studies in Australia, Brazil, Canada and Japan all showed positive attitudes towards labour pain relief, but obstetric HCPs were more inclined to non-pharmacological methods of labour analgesia (18–20,25).

Strength of this study is that it truly represents the overall obstetric health care family of the Gambia, as the included hospitals and respondents were drawn from all regions of The Gambia, and from all three hospital levels or tiers. Limitations were that associations between age, cadre, years of working experience and awareness and attitude was not accessed owing to the small sample size and lack of literature to discuss the findings.

4.1 Conclusion

There was a high proportion of obstetric health care providers unaware of labour pain relief methods both pharmacological and non-pharmacological. The commonly mentioned methods were the pain relief methods commonly used in the setting. This may be due to the gap in the training midwifery curriculum, insufficient time and material dedicated to the concerned topic in the training of health care providers. The attitude towards relieving labour pain is strongly positive.

4.2 Recommendations

To include labour pain analgesia/relief in the curriculum of all cadres of midwifery training and dedicate more time and material in the training of obstetrics health care providers on the aforementioned topic, especially methods (non-pharmacological and pharmacological methods alike) that can be applied in the routine obstetric practice in the Gambian setting.
Follow up study on the practice of labour pain relief in the Gambia.
Follow up study on the awareness and attitude of labour pain relief among parturient.

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6.0. APPENDICES

6.1 Appendix I: Consent form

CONSENT TO PARTICIPATE IN A STUDY TITTLED LABOUR PAIN RELIEF: A SURVEY ON THE AWARENESS AND ATTITUDE AMONG HEALTHCARE PROVIDERS IN THE GAMBIA

Greetings!

My name is Dr. Jose T.K. Green Harris from Muhimbili University of Health and Allied Sciences in Dar Es Salaam, Tanzania. I am conducting a study on awareness and attitude towards labour pain relief among healthcare providers in The Gambia.

Purpose of the Study

The study aims to assess the awareness and attitude of healthcare providers towards labour pain relief in The Gambia.

Participation

If you agree to join the study, you will be required to answer all the questions that will be asked by the investigator in the questionnaire.

Confidentiality

All information that will be collected from you will be treated confidential and will not be used for any other purpose other than this study.

Risks

We do not expect that any harm will happen to you because of joining in this study. Rights to withdraw and alternatives of taking part in this study is completely your choice. If you choose not to participate in the study or if you decide to stop participating in the study you will continue to be treated normally. You can stop participating in this study at any time, even if you have already given your consent and if for any reason you would wish to come back into the study after withdrawal, we will be ready to accept you to continue with the study. Refusal to participate or withdrawal from the study will not involve penalty or loss of any benefits to which you are otherwise entitled.

Benefits

Taking part in this study you will contribute towards getting information that will be used to improve the quality of childbirth care in The Gambia. Your information and others participating in the study will collectively be used by policy makers in addressing discrepancies and give a way of improvement.

Who to Contact

If you ever have questions about this study, you should contact the following:

Dr. Jose T.K. Green Harris (Principal Investigator)
School of Medicine, Muhimbili University of Health and Allied Sciences
P.O. Box 65001, Dar es Salaam.

OR

Serekunda General Hospital, the Gambia.
Kanifing Municipal council
Mobile phone: +255 686-416-499 (Dar es Salaam)
+220 7525-586 (Banjul)

Prof. H.N. Mgaya (Study Supervisor) Muhimbili University of Health and Allied Sciences
Department of Obstetrics and Gynaecology, School of Medicine,
Muhimbili University of Health and Allied Sciences,
P.O. Box 65013, Dar es Salaam.
Mobile phone: 0754 277 556

Dr. Patrick Idoko (Co- Supervisor) Edward Francis Small teaching Hospital
Email- patidoko@gmail.com.

Also, if you will have questions about your rights as a participant, you may contact Dr. Emmanuel Balandya, Ag. Director of Postgraduate studies, P.O. Box 65001, Dar es Salaam.

Signature

Do you agree to participate? Write the word ‘Yes’ if you agree……..

I, _____ have read the contents in this form. My questions have been answered. I agree to participate in this study.

Signature of participant _____

Signature of investigator _____

Date of signed consent _____

6.2 Appendix II: Adopted investigator-Modified questionnaire.

PART 1: SOCIO-DEMOGRAPHIC INFORMATION

1. Age in years ☐☐

2. Gender
   - Male ☐
   - Female ☐

3. Years of experience ☐☐

4. Affiliation of respondent (Hospital level)
   - Tertiary ☐
   - District ☐
   - Major Health Centre ☐
   - Health Centre ☐

5. Geographical location of the hospital
   - Urban ☐
   - Peri-urban ☐
   - Rural

6. Position
   - Consultant ☐
   - Specialist ☐
   - Registrar ☐
   - Medical officer ☐
   - Intern doctor ☐
   - Midwife (Degree) ☐
   - Midwife (RN) ☐
   - Midwife (SEN) ☐
   - Midwife (CHN) ☐
   - Nurse (Degree) ☐
   - Nurse (RN) ☐
   - Nurse (SEN) ☐

PART 2: HCPs AWARENESS OF PAIN RELIEF DURING LABOUR

1. Are you aware of the WHO pain ladder? Yes ☐ No☐

2. Are you aware of labour pain relief methods? Yes ☐ No ☐

3. Where did you get information about labour pain relief?

   Media (radio, television, magazines, books) ☐

   Professional colleague's ☐

   During professional training ☐

   During academic conferences/workshops ☐

4. What methods/agents of labour pain relief do you know (tick all that applies)

   Epidural ☐

   Morphine ☐

   Fentanyl ☐

   Pethidine ☐

   Tramadol ☐

   Acetaminophen ☐

   Nitrous Oxide (Entonox) ☐

   Transcutaneous electrical nerve Stimulation ☐

   Touch and massage ☐

   Breathing techniques with relaxation ☐

   Aromatherapy ☐

   Hydrotherapy ☐

   Acupuncture ☐

   Continuous emotional and physical support ☐

   Hypnosis ☐

   Music and audio analgesia ☐

   Freedom to ambulate and comfortable birth Place ☐

5. Which concerns of health care providers regarding labour pain relief/analgesia are you aware of?

Tick the concern(s) you are aware of (multiple responses possible):

It will affect the baby's breathing ☐

It will affect bonding between mother and baby ☐

It will affect breast feeding☐

It will reduce the uterine contractions ☐

It will make the labour unnatural ☐

It will affect the mother’s ability to bear down ☐

It will increase the chance of having instrumental delivery ☐

It will increase the chances of caesarean section ☐

It will cause unnecessary drug side effects ☐

It is contrary to the cultural belief and pride of withstanding labour pain ☐

PART 3: ATTITUDE OF HCPs TOWARDS LABOUR PAIN RELIEF

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
11. Labour pain relief should offered routinely to all women in labour					
12. There is a need for continuous emotional support service in childbirth care					
13. There is a need for continuous physical support service in childbirth care					
14. Physical support during labour improve birth outcomes					
15. Emotional support during labour improve birth outcomes					
16. Labour pain relief (analgesics) interferes with the normal process of labour					
17. Pharmacological analgesia during labour is harmful to the mother					
18. Pharmacological analgesia during labour is harmful to the foetus					

Adopted from (22) and modified by the investigator.

6.3 Appendix III: Ethical Clearance and introduction letter

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
OFFICE OF THE DIRECTOR OF POSTGRADUATE STUDIES

P.O. Box 65001
DAR ES SALAAM
TANZANIA
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Ref. No. DA.287/298/01A/ 15th August, 2018

Dr. Jose T.K. Green Harris
MMed. Obstetrics and Gynaecology
MUHAS.

RE: APPROVAL OF ETHICAL CLEARANCE FOR A STUDY TITLED: "LABOUR PAIN RELIEF: SURVEY ON THE AWARENESS AND ATTITUDE AMONG HEALTH CARE PROVIDERS IN THE GAMBIA"

Reference is made to the above heading.

I am pleased to inform you that, the Chairman has, on behalf of the Senate, approved ethical clearance for the above-mentioned study. Hence you may proceed with the planned study.

The ethical clearance is valid for one year only, from 14th August, 2018 to 13th August 2019. In case you do not complete data analysis and dissertation report writing by 13th August, 2019, you will have to apply for renewal of ethical clearance prior to the expiry date.

Dr. Emmanuel Balandya
ACTING: DIRECTOR OF POSTGRADUATE STUDIES

cc: Director of Research and Publications
cc: Dean, School of Medicine

UNIVERSITY OF THE GAMBIA

SCHOOL OF MEDICINE & ALLIED HEALTH SCIENCES
RESEARCH AND PUBLICATION COMMITTEE (RePubliC)

4th October 2018

Dr Jose T.K Green Harris
Muhimbili University of Health and Allied Sciences
Tanzania

Dear Dr. Green Harris,

RE: R018 027V2: LABOUR PAIN RELIEF: SURVEY ON THE AWARENESS AND ATTITUDE AMONG HEALTH CARE PROVIDERS IN THE GAMBIA

Thank you for resubmitting and your proposal dated 2nd October 2018 for consideration by the REPUBLIC.

Thank you for submitting the above project for expedited review.

The current version of your project is approved. The aims and objectives are being achieved by appropriate methodology.

With best wishes

Yours sincerely

SCHOOL OF MEDICINE & ALLIED HEALTH SCIENCE
SIGN:
DATE: 4/10/18
UNIVERSITY OF THE GAMBIA

Prof. Ousman Nyan
Chair

Documents submitted for review:-

- Proposal Document -Aug 2018 2018
- Informed Consent Document
- Questionnaire
- Participant Information Sheet
- University Ethics approval

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
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E-mail: dpgs@muhas.ac.tz

Ref. No. HD/MUH/G.120/2016

16th August, 2018

Chief Medical Director
Edward Francis Small Teaching Hospital
Independence Drive
BANJUL, THE GAMBIA.

Re: INTRODUCTION LETTER

The bearer of this letter Dr. Jose T.K. Green Harris is a student at Muhimbili University of Health and Allied Sciences (MUHAS) who is pursuing MMed. Obstetrics and Gynaecology.

As part of his studies he intends to do a study titled:"***Labour pain relief: Survey on the awareness and attitude among health care providers in the Gambia ".***

The research has been approved by the Chairman of University Senate.

Kindly provide him the necessary assistance to facilitate the conduct of his research.

We thank you for your cooperation.

Ms. L.C. Kapama
For: DIRECTOR, POSTGRADUATE STUDIES

cc: Dean, School of Medicine.
cc: Dr. Jose T.K. Green Harris

REPUBLIC OF THE GAMBIA
DEPARTMENT OF HEALTH
MINISTRY OF HEALTH & SOCIAL WELFARE
THE QUADRANGLE
BANJUL

8th October 2018

REF: DHS/AD/2018/01/[150]

CMD EFSTH
CEOs: (Kanifing); (BMCH); (Farafenni); (Bansang); (Bwiam)
RDHS: (WR1); (WR2); (NBW); (NBE); (LRR); (CRR); (URR)

RE: LABOUR PAIN RELIEF: SURVEY ON THE AWARENESS & ATTITUDE AMONG HEALTH CARE PROVIDERS IN THE GAMBIA (R018 027V2)

This is to introduce to you the above study and the Principal Investigator, Dr. Jose T K Green Harris, staff of this ministry undertaking this study as part of his master's degree programme. The study is a multi-center undertaking involving your hospital/health facilities within your span of management. For that reason, I seek your kind support and facilitation to the named officer for a successful implementation of the data collection process.

By a copy of this missive Dr. Green Harris is adviced to share with you his study protocols and other related documents.

Thank you.

Yours sincerely,

Dr. Mamady Cham (PhD)
DIRECTOR OF HEALTH SERVICES

CC PS - MoHSW
Dr. Green Harris
File

Tel: 4222117/4227301 **Fax: 4229325**

TARGETED PUBLIC HEALTH FACILITIES

Hospitals	1. EFSTH 2. Kanifing 3. Bwiam 4. BMCH 5. Farafenni 6. Bansang
North Bank West Region	1. Essau 2. Kuntaya 3. Fass Njaga Choi
Lower River Region	1. Soma 2. Bureng 3. Pakaliba
Central River Region	1. Kuntaur 2. Brikamaba 3. Kaur
Western Region 1	1. Faji Kunda 2. Sukuta
North Bank East	1. Ngayen Sanjal 2. Salikene
Upper River Region	1. Gambissara, Basse