

Preoperative anxiety levels in obstetric patients receiving spinal anaesthesia. Does an information booklet reduce anxiety and improve quality of anaesthesia?

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DECLARATION

I Dr T.B Machaya hereby certify that this dissertation is the product of my own work. In submitting it for my Masters Degree in Medicine (Anaesthesia and Critical Care Medicine), i attest that it has not been submitted in part or in whole to another university or for general publication.

Signature..... **Date**.....

I/We..... having supervised and read this dissertation, am/are satisfied that this is the original work of the author whose name it is being presented. I/We confirm that the work has been completed satisfactorily and is ready for presentation to the examiners. (Delete sections that are not applicable)

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ABSTRACT

OBJECTIVE: To look at levels of preoperative anxiety in patients who are to have caesarian section under spinal anaesthesia and determine if availing an information booklet to the patients would reduce anxiety.

MATERIALS AND METHODS: One hundred and twenty patients were included on baseline assessment of anxiety. The anxiety was evaluated using the Amsterdam Preoperative Anxiety and Information Scale (APAIS) and the Shona version of it was validated. Patients randomly selected into group A received the information booklet the day before surgery while those in group B did not. Anxiety was reassessed on the day of surgery. The day after surgery a survey of the patients' satisfaction with the spinal anaesthesia was done.

RESULTS: Three patients out of the 120 were lost to follow-up for unforeseen reasons. Baseline anxiety assessment showed that 38 out of 60 patients in group A and 45 out of 60 patients in group B were anxious and this was statistically significant ($p=0.000$). There was an increase in the number of anxious patients in groups A and B on the day of surgery from 38 to 43 and from 45 to 48 respectively. This increase however was not statistically significant ($p=0.1307$ group A, $p=0.1500$ group B). Regarding need for information, those with none or little need for information were 42.7% ($p=0.099$), average need for information 18.8% ($p=0.031$) and with high need for information 38.5% ($p=0.001$). Regarding the relationship between anxiety and need for information there was a positive correlation for both group A and B ($r=0.638$, $p=0.000$ and $r=0.797$, $p=0.000$ respectively). One hundred and eleven (94.9%) of patients were satisfied with the spinal anaesthesia and 110(94.0%) were willing to have it if they were to have subsequent caesarian section.

CONCLUSION: There was preoperative anxiety in patients scheduled for caesarian section. The information booklet did not reduce anxiety. The high need for information was significant in the group that did not have access to the booklet. Patients were however satisfied with spinal anaesthesia.

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LIST OF ABBREVIATIONS

APAIS	Amsterdam Preoperative Anxiety and Information Scale
ASA	American Society of Anaesthesiologists
CPD	Cephalopelvic disproportion
JREC	Joint Parirenyatwa and College of Health Sciences Research Ethics Committee
PGH	Parirenyatwa Group of Hospitals
PIH	Pregnancy induced hypertension
PMTCT	Prevention of mother to child transmission
PROM	Pre-labour rupture of membrane
STAI	Speilberg State Trait Anxiety Inventory
VAS – A	Visual Analogue Scale for Anxiety

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Introduction

Anxiety in patients who are scheduled to have spinal anaesthesia and undergo “awake” surgery is known but yet an often underscored problem. Historically the patients were always rendered unconscious in the operating theatre. As a result, the perioperative practices that are associated with the patient who will be conscious may need greater scrutiny.^{1,2} If unrecognized, prolonged periods of anxiety may cause stress which may delay recovery or harm the patient in the end. Anxiety is experienced by most patients waiting for elective surgery and this has generally been accepted as an expected response.³

Anxiety is a human reaction to any unknown situation. Anxiety is described as an unpleasant state of uneasiness or tension, which may be associated with alteration in haemodynamics as a consequence of sympathetic, parasympathetic and endocrine stimulation.⁴ In some instances fear and anxiety are used interchangeably. However fear is defined as ‘the dread of real danger’ whereas anxiety is associated with the threat of perceived subjectivity without a defined risk factor.⁴

The extent to which each patient will manifest anxiety in relation to future experiences depends on factors such as gender, age, indication for surgery and possible duration of the surgery. Previous operation experience and the patient’s response to stressful situations also has an effect.⁵ In a study carried out in Nigeria by Babatunde et al they found that the knowledge of the average citizen was still poor with regards to anaesthesia. The study was

done in members of the public not working in any medical facility. In their population, the fear of death was their greatest concern followed closely by fear of post-operative pain, which was of greater concern to females showing that females had greater anxiety levels than men.⁶ The differences in culture, race, social beliefs among others cause variations in patients' perceptions of undergoing awake surgery.^{1,2} A study to explore the psychological experience of the patients in the Zimbabwean population who are to receive spinal anaesthesia and awake surgery or caesarian section was therefore seen to be necessary.

Several methods of reducing anxiety have been looked at. These include reassurance, listening to music peri-operatively, information provision using information booklets or videos, anaesthetist's preoperative visit and even hypnosis. Some studies have shown that a perioperative information booklet helps in reducing anxiety in patients who are to undergo surgery and one of them was an unpublished thesis on non-pharmacological relief of pre and postoperative anxiety at one of the central teaching hospitals in Harare, Zimbabwe. The findings showed approximately 50% of all patients scheduled for surgery were anxious to varying degrees. A quarter of patients scheduled for surgery had fair knowledge of the planned operation. In addition an information booklet reduced anxiety significantly.⁷ These results indicate that preoperative anxiety is a reality even in our population. However the population included in the study did not include the obstetric patients hence the focus on this study on the obstetric population. In addition the population included had surgery under general

anaesthesia not regional anaesthesia. It can therefore be extrapolated that patients who undergo surgery whilst awake may have significantly higher levels of anxiety.

Spinal anaesthesia is a safe method of anaesthesia for surgery below the umbilicus where it is indicated. It is used in various surgical specialties including gynaecology, obstetrics, general surgery and urology among others. The use of spinal anaesthesia has gained popularity in Zimbabwe especially at the central hospitals and has become the most commonly used mode of anaesthesia in obstetric patients. At Harare central hospital, statistics for the year 2013 indicate that of the 3 334 operations performed in the maternity unit 77.4% were done under spinal anaesthesia. Caesarian sections that were done in the same year were 3 105 and 80.8% of these were under spinal anaesthesia. The statistics from Parirenyatwa's Mbuya Nehanda maternity Hospital show that 2 943 patients had caesarian section done in the year 2013.^{8,9} There is no local data regarding patients' need for information regarding spinal anaesthesia.

Little is known about preoperative anxiety in general, more so in the sub-Saharan population. Among the literature available on preoperative anxiety there is limited work on looking at preoperative anxiety in the obstetric population. Understanding this will be of importance especially to form policies and strategies for provision of preoperative anxiety reduction care services. This would also be part of fulfilling one of the millennium development goals of

improving maternal health. Apart from catering for the physical health of the pregnant woman, the psychological wellbeing of the pregnant woman is also important.

The objective of this study was to assess the anxiety levels in patients scheduled for elective surgery under regional anaesthesia at Harare Central Hospital Maternity unit and Mbuya Nehanda Maternity Hospital at Parirenyatwa Group of Hospitals in Harare. The prevalence of preoperative anxiety in obstetric patients was the area presented in this study. The issue of preoperative anxiety needs to be looked at properly. To recognize the existence of the problem is the first objective this study has tried to bring out.

The causes of anxiety are not addressed in this study but may need to be elucidated in further studies. Finding the reasons for preoperative anxiety and factors that may possibly influence preoperative anxiety in the local setting may help the practitioner in the endeavor to provide comprehensive management of patients.

Literature review

Anxiety to some extent is expected as a natural reaction to the unpredictable and potentially threatening circumstances typical of the preoperative period, especially for patients' first experiences with surgery.¹⁰ It is believed that slight anxiety is beneficial as it mobilizes and strengthens the protective forces. It makes a person more aware of surroundings and possibility of pending danger. On the other hand panic anxiety impairs functioning and exerts highly disorganizing effects.¹⁰

Effects of anxiety

Anxiety triggers several symptoms that can be physiological, mental or behavioural. The physiological effects include accelerated heart rate, accelerated respiratory rate, increased arterial pressure, increased muscle tone and abdominal pain. The mental symptoms include tiredness, feeling of threat, reduced self-esteem, withdrawal from interpersonal relations and cognitive disorders. Behavioural symptoms include motor anxiety, pointless activities, frequent position changes and twitches. At times insomnia is observed.¹⁰ Healing can also be impeded by anxiety and poor patient satisfaction can occur.^{11,16} Decreased activity resulting in increased risk of thrombosis can also occur.¹² Orbach-Zinger S et al carried out a prospective observational study on healthy term parturient undergoing caesarian delivery under spinal anaesthesia. They found that preoperative anxiety had a significant effect contributing to hypotension after spinal anaesthesia.¹³ In a surgical patient anxiety can increase the need for anaesthesia with increased anaesthetic risk. Anxiety has been shown to increase post-operative pain medication

requirements, which can affect postoperative recovery for example by reducing respiratory rate, which increases pulmonary risks.^{12,15}

Factors contributing to anxiety in surgical patients

The extent to which each patient manifests anxiety related to future experiences depends on several risk factors. Some of the risk factors for preoperative anxiety include self-perception, depression, trait anxiety level, pain, extent and duration of proposed surgery, female gender, level of education and physical status according to the American Society of Anaesthesiologists (ASA) grading.¹⁴ The identification of factors affecting perioperative emotions of patients may help the medical staff to provide the optimal care and support. Based on such factors, anaesthetists would be able to recognize the real disease related problems of patients which affect the quality and outcome of treatment as well as recovery. Once the patients with high levels of anxiety are placed on top of the surgical waiting lists, the anxiety levels may be reduced.¹⁷ Jawaid et al carried out a study at the Civil Hospital, Karachi, Pakistan, tertiary institution where they assessed anxiety in patients in the hospital awaiting surgery. They noted that some of their patients experienced very high levels of preoperative anxiety. The most common factors contributing to anxiety were concern about family in 89.6% of patients, fear of complications that may develop in 87% of patients, results of the operation in 82.4% and post-operative pain in 78.8%. Fifty six percent of the patients thought that their anxiety would be lessened by a detailed explanation regarding the operation and anaesthesia.³

In a study by Wojciech.R et al, 3 factors of anxiety of patients awaiting surgeries were distinguished: the fear of the unknown, fear of complications and fear of loss of life. It was found that the information pertaining to the disease, methods of treatment and anticipated duration of hospital stay provided for patients are likely to reduce the level of anxiety.¹⁸The need for information was assessed in this study using the Amsterdam Preoperative Anxiety and Information Scale (APAIS).It assesses the need for information about the procedure and the need for information about the anesthetic as part of the tool. The APAIS was validated in the study in order to assess its usefulness in our population.

Anxiety in the African surgical patient

There are a small number of studies on preoperative anxiety carried out in Africans. One such study was carried out in Nigeria by Babatunde et al. They reported that the knowledge regarding anaesthesia of an average citizen was still poor in Nigeria. Their personal experience showed that some patients believed that surgeons wereresponsible for putting patients to sleep, especially since most patients come in contact with the anaesthetist in the perioperative period. Their study looked at the causes of anxiety in general anaesthesia patients. Fear of death was the greatest cause of anxiety followed by fear of postoperative pain which was of greater concern in women.⁶Another study carried out at Jimma Specialized teaching hospital in South Western Ethiopia looked for predictors of preoperative anxiety among surgical patients.

They also concluded that prevalence of preoperative anxiety is high. The most common causes being fear of the unknown, fear of death, financial loss and results of the operation. Other contributing factors included being single or divorced, time of operation and income. Factors shown to reduce anxiety were information provision and operation done during late part of the day. The most favoured coping mechanisms that were forwarded by patients were discussing their anxiety with other patients and giving all things to God and Allah. Therefore the most common effective way of decreasing anxiety mentioned by the patients was their religious belief.¹⁹

Religion and anxiety

History shows religious organisations were often the first to offer compassionate care to vulnerable groups including the medically ill. A strong association between religion and mental health has been demonstrated. This association is seen in the young adults, elderly, the sick, addicts, people with mental health problems and personality disorder.²⁰ The incidence of preoperative anxiety has been reported in 80% of adult patients. Religion and spirituality do not eliminate mental health problems but help them cope with their healing process.²¹

Regional anaesthesia and anxiety

With the growing number of surgical procedures being performed under regional anaesthesia, studies are emerging investigating patients' anxiety undergoing procedures under regional anaesthesia. They also investigate the ability to assess and predict preoperative anxiety of patients having regional anaesthesia. Patients scheduled for surgery under local or regional anaesthesia are concerned about the procedure being painful, seeing the body cut open , hearing proceedings , numbness wearing off too quickly or feeling what the surgeon will be doing.²²Jlala HA carried out a survey of anaesthetists' perception of patients' anxiety under regional anaesthesia in Nottingham. For the survey electronic questionnaires were sent out to anaesthetists with several questions to assess the anaesthetists' perceptions. It revealed that two thirds of the respondent anaesthetists thought anxiety was uncommon among patients having regional anaesthesia. The result of the survey was consistent with reports by Mitchell M and Jlala HA which showed a low rate of self – reported anxiety (30%) among regional anaesthesia patients.^{22, 23} In the survey they concluded that according to these anaesthetists, anxiety during anaesthesia is uncommon and that surgery and anaesthesia, followed by block failure are the most common causes of patients' anxiety preoperatively.²³

Anxiety in the obstetric patient

Since historical times, it has been documented by scientists that the fetus may be affected by the emotional status of the mother. Animal studies and human studies carried out currently

support the notion that maternal stress and anxiety during pregnancy can have both immediate and long term effects on the offspring. However studies vary in terms of their methodology and results. Some examined isolated stressors such as death of a spouse or natural disaster. Others looked at stressful feelings and daily hassles during pregnancy.²⁴

Anxiety is expected in the pregnant woman due to the life growing inside them for several reasons. In the antenatal period the pregnant woman may worry about possibility of birth defects, possible risk of miscarriage, or risk of drugs for any other comorbidities/alcohol taken before pregnancy affecting the baby. Common worries about childbirth include coping with labour pain, risk of emergency caesarian section instead of the desired vaginal delivery or loss of control during labour. They may also worry about the life after the birth of the child. Some of the concerns include change in relationship with partner, whether they can afford to take care of the baby financially, whether she or the partner would be a good parent or if she would be able to breastfeed the child.²⁵

Maternal stress and anxiety during pregnancy has been associated with shorter gestation and a higher incidence of preterm birth, smaller birth weight and increased risk of miscarriage. In terms of infant outcomes, prospective studies have shown that maternal stress and anxiety during pregnancy are related to infant outcomes such as temperamental problems, increased fussiness, problems with attention and emotional reactivity.^{26,27} Van den Bergh and colleagues from Belgium's Catholic University of Leuven measured anxiety in women from pregnancy to

early childhood. They also assessed children for attention deficit hyperactivity disorder (ADHD) and other behavioral disorders between the ages 8 and 9 years. Maternal anxiety levels in early pregnancy during 12th and 22nd week of pregnancy were strongly linked to ADHA in the children.²⁸

Studies have been done to look at how the theatre environment affects the patient due for caesarian section under regional anaesthesia. In a study by Kennedy et al 1992 patients were surveyed after having had a caesarian section done under regional anaesthesia to assess how the theatre environment affected them. The most stressful part was identified as the moment they got into theatre although this was associated with the surgical procedure scheduled to be done and not the theatre environment.²Chit Ying et al looked at patients who had elective caesarian section and highlighted that many experienced anxiety during part of the caesarian section.²⁹This stands to show that some pregnant women scheduled for caesarian section under regional anaesthesia have anxiety in the whole perioperative period.

Assessment of anxiety

It is essential to note that anaesthetists have variable perception of patients' anxiety. Controversy exists on the ability of anaesthetists to assess and predict patients' anxiety before surgery. Bardner et al reported that anaesthetists are frequently inaccurate when assessing patient anxiety and that they usually tend to underestimate it and recommended using more

objective measures of anxiety such as the Visual Analogue Scale rather than depending on the assessment of the clinician.⁵In a survey carried out by Jlala et al, 50% of the surveyed anaesthetists felt that they underestimated anxiety and 30% could accurately predict it. This was in agreement with what was previously reported by Bardner et al that anaesthetists are poor predictors of patients' anxiety and that they usually tend to underestimate it.^{5,35}For this study, self-report questionnaires by patients were used to collect data.

Management of anxiety

There are several methods that have been employed to reduce anxiety in patients scheduled for surgery such as reassurance, written information, use of videos, listening to selected music before surgery among others. No one method has been proven conclusively to be more superior to the other. There is even less data on patients having surgery under local or regional anaesthesia. One of the methods looked at was talking to patients and maintaining communication throughout the intraoperative period. Talking to patients immediately before anaesthesia; offering the option of some physical contact throughout surgery, reducing the influence of the environment such as sight, smell and noise may be helpful. In addition enabling someone to accompany the patient to theatre during or immediately after surgery may all be beneficial.³⁰The use of phrases that give rise to a realistic impression of safety are therefore vital. Words such as “you will be continuously monitored” or “the medications used are very safe and effective”. Collectively these phrases give patients the “tools” to promote fewer negative thoughts.³¹

Some have looked at the effect of hypnosis on anxiety. One such study was done by Goldman L et al. Patients who underwent gynaecological operations as day cases were recruited. They received either a short preoperative hypnotic induction or a brief discussion of equal duration. The results suggested that preoperative hypnosis could provide a quick and effective way to reduce preoperative patient anxiety and anaesthetic requirements for gynaecological day case surgery. More studies need to be done to shed more light on this method.³²

Although anxiolytic drugs can be given as premedication to relieve anxiety where indicated, anxiolytic drugs are not indicated in expectant parturients for fear of fetal depression. This therefore leaves the obstetric patient purely exposed to the effects of anxiety. The anxious patient might also benefit from more attention and information from the anaesthetist. In practice however, there is little time for the anaesthetist to carry out the consultation in the preoperative period to identify anxious patients who may find extra attention beneficial. Leigh JM et al showed that the visit by the anaesthetist preoperatively significantly reduced anxiety. The anaesthetist's visit was compared to the administration of a booklet and also to no visit or booklet. The levels of anxiety in patients who read a booklet meant to reassure about anaesthesia had lower anxiety levels compared to patients who did not have the booklet nor had a preoperative visit. The reduction in anxiety in patients who had the booklet was less significant compared to patients who had an anaesthetist's preoperative visit. The group that had no intervention had the highest anxiety levels.³³

In another study by Mascood et al, their results showed a different view on the preoperative visit. They found that although patients had received visits before anaesthesia, their anxiety levels remained high. This was so because during the visits, only the clinical status of the patients and their fitness for anaesthesia were looked at in the clinics. Nothing was done to relieve their anxiety about the procedure. This shows that the quality and content of the preoperative visit are as important as its occurrence.⁷The same applies to pregnant women. Hobson et al in their study showed that having low preoperative anxiety level was associated with greater maternal satisfaction with elective caesarian section and better recovery.³⁴ The information provided by the anaesthetist and the perceived emotional support were also of importance.

Videos of the perioperative events that occur can be used as a method of providing information to patients in the preoperative period. Jlala.H.A. et al, in a prospective randomized controlled study, demonstrated that viewing a short information film before the operation reduced the anxiety of patients undergoing elective surgery under regional anaesthesia. This type of information is easily delivered and can benefit many patients.²³

The use of music as a method of reducing anxiety has been studied. In a study carried out in Hong Kong in patients scheduled for day case surgery, they found that providing music that the patients had selected for themselves preoperatively helped reduce anxiety and physiological parameters.³⁶

If information is to be given to patients preoperatively, the question of how much information should be given arises. Some patients require detailed information about anaesthesia before the day of surgery, while other patients like to shut themselves out from information.^{37,38} On the other hand providing too much information can result in an increase in anxiety in some patients.³⁹ Formal provision of information regarding anaesthesia before the day of surgery and dispelling common misconceptions can be quite beneficial in reducing anxiety.⁴⁰ The ideal method of delivering this information is unknown. Written information has been used as an effective way for delivering information to patients.^{41,42}

A number of studies have emphasized the importance of preoperative information provision.⁴³ At times such information provision may become marginalized. When a patient consents to surgery, for example in the out – patient clinic, it is done based on the information provided by the surgical team about the intended procedure. The surgeon may neither provide information pertaining to the anaesthetic technique, nor the risk of anaesthesia. The patient generally agrees to a procedure knowing very little about the anaesthetic that will be involved. If the information is provided for the patient preoperatively either by videos or booklets it might help inform patients about the pending anaesthetic. The patient's senses such as inability to move or feel as usual may become greatly apparent immediately before anaesthesia induction or in the initial stages. Therefore patients may wish to have more understanding of the conduct of anaesthesia.

Lack et al made clear recommendations of a clear anaesthetic information provision prior to the day of surgery. From their study, patients who experienced an overall increase in the level of anxiety were most apprehensive regarding the potentially adverse intra – operative experiences.⁴⁰ On the other hand, in a study of Lebanese patients, there was no evidence to support the finding that information reduced preoperative anxiety. It concluded that an assessment of the patient’s cultural and social background should be carried out before patient education.⁴⁵The differences in the patient population and setting may also have been a contributing factor to the variation in results.

Provision of these diverse methods to all patients is practically impossible for the anaesthetist. To differentiate patients who would want to be informed as much as possible from the ones who want the information provision to be kept minimal is a tall order. It would be of great benefit to the anaesthetist in their practice to know whether they are dealing with a patient who needed to have more than basic information that patients are given routinely, or a patient who would prefer not be provided with any additional information. Ng et al looked at the effect of preoperative information on anxiety of patients undergoing oral surgery in Hong Kong. They were separated into 4 groups:

- ❖ Group receiving basic information
- ❖ Group receiving basic information plus details about the surgical procedure
- ❖ Group that received basic information plus details of the expected recovery

- ❖ Group receiving basic information plus details of both the surgical procedure and expected recovery.

The groups that had statistically significant reduction in anxiety were those who received basic information about the procedure.⁴⁶

Due to the paucity of research being performed on the topic, many of the studies reviewed here for evidence have come from other cultures and disciplines. Although it can be difficult to extrapolate and apply data from research done in adverse cultures, these studies point the way for further research. Anxiety can have far reaching effects on surgical outcome. Developing effective anxiety – reducing strategies based on evidence is essential to optimize patient care.

Since the measurement of preoperative anxiety is qualitative, a proper instrument needs to be used for measuring anxiety. Many instruments have been used for measurement. Apart from objectivity, reliability and validity, the applicability is essential which refers to brevity, clinical relevance as well as fast and simple analysis format.⁴⁷The commonly used instrument is the Spielberg State Trait Anxiety Inventory (STAI). It consists of two separate twenty item, self-report rating scales for measuring trait and state anxiety. Trait anxiety is defined as a basic personality feature. It describes how a person feels in general, and is assumed to be reasonably constant for a given patient. State anxiety is the situation related anxiety and this may differ depending on the stress of the particular moment. Although the “state” of STAI scale is aimed

at assessing a situation related anxiety, it takes too much time to be filled to be usable in the preoperative setting.⁴⁸

Validity of the Amsterdam Preoperative Anxiety and Information Scale

The Amsterdam Preoperative Anxiety and Information Scale (APAIS) is another method of measuring anxiety. This instrument was developed and validated by a Dutch group in 1996. It comprises six questions enquiring into the patient's concerns and anxieties. With this instrument, two items are for assessment of anxiety related to anaesthesia, two items for assessment of anxiety related to surgery and two items evaluate the desire for information. It represents two scales ; anxiety (items 1, 2, 4 and 5 ;Cronbach's $\alpha = 0.86$) and need for information (items 3 and 6; Cronbach's $\alpha = 0.72$).⁴⁹There was no instrument formulated to assess patients' need for information until the APAIS.⁴⁹The items are rated on a 5 point Likert scale with end poles "not at all"(1) and "extremely"(5).In the study they found correlation between STAI and the APAIS with $r = 0.74$,⁵¹ $r = 0.67$ ⁴⁷ as well as $r = 0.64$ ⁵¹ which is a good indicator for its validity.

The APAIS was applied in several international studies in the departments of ophthalmology,⁵² internal medicine,⁵³ in parents of children before surgery^{54, 55} or for testing preoperative psychosocial intervention.⁵⁶ Apart from the Dutch version⁴⁹ an English version⁵¹ and a Japanese version⁴⁷ of the APAIS exist with several studies proving the validity with performance

properties. Other studies from research groups in Turkey,⁵⁷ Korea,⁵⁸ and Thailand⁵⁹ implementing the APAIS have been published. In the German version of the APAIS, the 2 scales of the original version of the APAIS could be precisely replicated by a factor analysis. They showed high reliability despite being brief. The items formulated were generalized such as, “I am worried about the anaesthesia/surgery”. They were not specifically for one disease or treatment. Therefore the area of application of APAIS is broad.⁴⁷

The APAIS was elected for use for the objective analysis of anxiety in patients scheduled for caesarian section since it is short and easy to administer. Based on a comparison with the STAI, the cutoff score of 11 produces a good predictive value for clinical practice. It also provides an acceptable balance between the false negative patients and the false positive. A lower predictive value may emanate from a score of 10 and a higher number of false positive patients (anxious on the APAIS but not on the STAI) than with a score of 11.⁶¹ The questionnaire was tested in a pilot of patients and validated as elaborated in the methodology.

There is evidence in literature of preoperative anxiety in patients scheduled for surgery. However, there are fewer studies that looked at preoperative anxiety in patients scheduled for regional anaesthesia. This study was therefore found necessary to gain data on anxiety in patients scheduled for surgery under regional anaesthesia looking at the obstetric population. This may help with holistic maternal and fetal health care provision in the perioperative period.

Methodology

Study design

The study was a prospective, observational, randomized study. One hundred and twenty elective parturients were randomly divided into two groups; group A (60 patients) had access to the information booklet on the day before surgery and group B (60 patients) did not have access to the booklet before surgery. It was carried out at Harare central Hospital maternity unit and Mbuya Nehanda Maternity hospital at Parirenyatwa Group of Hospitals.

Sample size

The minimum sample size was calculated on the assumption that the standard deviation was 8.9, the difference between the means was 5, and a constant K (which is a function of alpha and beta) was 7.9. Using a power of 80% and setting the confidence level at 95%, the sample size required was calculated using the formula:

$$N = 2 \times K \left(\frac{\sigma}{\mu_1 - \mu_2} \right)^2$$

Assumptions

N= sample size,

σ = Standard Deviation = 8.9

d = difference in means $\mu_1 - \mu_2 = 5$

$\alpha = 0.05$

$\beta = 0.2$

K= 7.9, Where K is a function of β and α from table 1 below

Table 1: Values of K, as used for sample size calculations

Power:

	50%	80%	90%	95%
$\beta = 0.5$				
$\beta = 0.2$				
$\beta = 0.1$				
$\beta = 0.05$				
$\alpha:$				
0.1	2.7	6.2	8.6	10.8
0.05	3.8	7.9	10.5	13
0.02	5.4	10	13	15.8
0.01	6.6	11.7	14.9	17.9

Sampling method

The sample comprised patients who underwent elective caesarian section under spinal anaesthesia. Socio-demographic and other clinical data such as American Society of Anaesthesiologists (ASA) physical status measure which assesses fitness of patient before surgery were collected.

Inclusion criteria

- Age above 18 years
- Obstetric patients eligible to have spinal anaesthesia for caesarian section
- Patients having surgery for the first time
- Literate patients able to read and understand the study protocol

Exclusion criteria

- Patient refusal
- Patients with contraindications to spinal anesthesia such as thrombocytopenia, severe sepsis, vertebral deformities among others
- Patients with conditions that compromised fetal wellbeing such as antenatally diagnosed fetal abnormalities, premature delivery
- Patients unable to read and understand study protocol
- Emergency caesarian section
- Patients who already searched for information about regional anaesthesia and caesarian section

Ethical considerations

An ethical clearance letter was obtained from the Joint Research Ethics Committee (JREC) at Parirenyatwa(appendix 4) and the Research committee at Harare Central Hospital.(appendix 5)The relevant authorities and matrons for the respective maternity hospitals granted permission for the study to be carried out in the maternity units. (Appendix 6) A written informed consent for the patients to participate in the study was obtained. (Appendix 1)

Data collection

The first researcher explained the study protocol and obtained informed consent from eligible participants the day before surgery. Baseline anxiety assessment was done using the self-report questionnaire.(appendix2) The participants chose the language they preferred for the questionnaire and the booklet. All participants were asked then to pick a sealed envelope from a container (all envelopes were uniform). The envelope had a coded number allocating the participants to either of the two groups. Group A participants had access to the information booklet a day before surgery (appendix 3) and group B participants did not have access to it. The participants in group A were encouraged not to share the booklet with anyone or to discuss the content with other participants. This was done in order to avoid group B participants from seeing and reading the information booklet which would compromise the study findings. The staff members working in the study settings were unaware of participants' group allocation.

On the day of surgery the second researcher initially asked if the participant was given a booklet or not. If not the participant was asked if they had at any time read the information booklet or discussed contents with a colleague. If not, the repeat self-report assessment was done.

Instrument

The data collection tool on preoperative anxiety was adapted from the Amsterdam Preoperative Anxiety and Information Scale (APAIS). This tool has been shown to be correlated with the commonly used Spielberg State Trait Anxiety Inventory Scale (STAI) and has been validated in the French, German, Japanese, English and Dutch populations. The level of anxiety and the need for information about surgery and/or anaesthesia were assessed with APAIS. Each item was given a weighted score of 1 (not at all) to 5 (strongly agree). A rating of 5 indicated presence of high level of anxiety.

Validation of instrument

The validation process included two steps. The first step involved the production of a locally based version of the Amsterdam Preoperative Anxiety and Information Scale that is semantically equivalent to the original version. In the second step, internal consistency and reliability of the tool was evaluated.

The questionnaire was translated into Shona by a lecturer with a doctorate in languages from the African Languages Research Institution (ALRI) based at the University of Zimbabwe (UZ). Forward and backward translation was done. A pilot study was done to test the Shona version of the questionnaire at Harare Central Hospital maternity unit and Mbuya Nehanda Maternity unit at Parirenyatwa Group of Hospitals in the antenatal wards. Pregnant women with no prior history of surgery admitted in the antenatal ward were invited. Ten participants from Harare

Central Hospital maternity unit and ten participants from Mbuya Nehanda Maternity Hospital at Parirenyatwa Group of Hospitals were recruited. They completed the English and Shona versions of the questionnaire. Feedback was obtained from the groups on areas that needed clarification and re-wording. The questionnaire was re-worded with the feedback from the pilot.

An evaluation of the scales and tests that involve summing items was done. Cronbach's alpha was calculated as a measure for internal consistency of the scales. Reliability is considered acceptable when Cronbach's alpha is $> \text{ or } = 0.7$.

Intra-operatively, the questionnaire assessed if the participant was in pain or not and the management of pain. A day after surgery, participants were asked on satisfaction with spinal anaesthesia and any concerns pertaining to their experience were recorded.

Analysis

The questionnaires that were completed were checked for any inconsistencies and any missing values. Incomplete questionnaires were excluded from analysis. Data cleaning was performed after entering data. Data analysis was done using Statistical Package for Social Sciences version 20. Analysis of baseline characters was done using student *t* test for continuous data and Chi square for comparison of the demographics of the two groups.

Results

There were 120 patients included in the study. On baseline assessment (the day before surgery), 60 participants were in the study group (group A) and 60 in the control group (group B). However 2 of the participants from group B were not included in subsequent assessment because they went into labour during the night and delivered vaginally with no complications. One of the participants from group A went into labour and subsequently had an emergency caesarian section done. There were 117 participants that were assessed subsequently.

The questionnaire was validated in 2 stages. Ten of the participants from Harare Central hospital and 10 from Mbuya Nehanda maternity hospital at Parirenyatwa Group of Hospitals participated in the pilot study.

Results from the focus group discussions

- The questionnaire was said to be short and did not require a lot of time to fill in
- For anxiety the word “*kushushikana*” was preferred to “*kusagadzikana kwehana*”
- Using the word “*kuvhiiwa*” for the procedure was too intimidating
- They preferred the use of the word “*zvichaitwa*”
- On the booklet the description of the procedure was too complex for the layman
- The diagrams were said to be helpful in visualizing what to expect

- Participants were satisfied with the information given on what to expect postoperatively

From the discussions there were suggestions on rewording some phrases. The feedback was shared with translators and the questionnaire and information booklet adjusted accordingly.

The Cronbach's alpha for the baseline questions is 0.936 meaning there is a high level of internal consistency of the APAIS.

Table 1: Patients' demographics

PARAMETER	GROUP A	GROUP B	p-value
Level of education	N	n	0.562
Grade 7	0	1	
O level	56	51	
A level	2	2	
Tertiary level	2	6	
ASA grade			0.102
1	41	41	
2	19	19	
Marital status			0.549
single	1	1	
married	59	56	
widowed	0	1	
Age			0.238
Age(years,mean +/-SD)	28.55+/-8.91	26.78+/-7.32	

There was no statistically significant difference in the ages or marital status of the participants in the different groups. The differences in level of education of the participants and the ASA grading were not statistically significant either. Overall, the demographic results indicated that there were no significant differences between the women in the control group and the study groups in age or the variables of level of education, marital status or ASA status.

Table 2: Indications for caesarian section

	Group A	Group B	P-value
Procedure	N	n	0.698
Pregnancy induced hypertension	16	12	
Breech presentation	14	13	
Cephalopelvic disproportion	6	6	
Multiple pregnancy	5	7	
Abnormal lie	5	2	
PMTCT	3	6	
Post-dates/big baby	10	12	
others	1	2	

The indications for caesarian section were multiple. There were no significant differences between the 2 groups of participants with a p-value of 0.698. The majority of the patients had caesarian sections done for pregnancy induced hypertension, breech presentation and postdates/big baby.

Figure 1: Distribution of indications for caesarian section

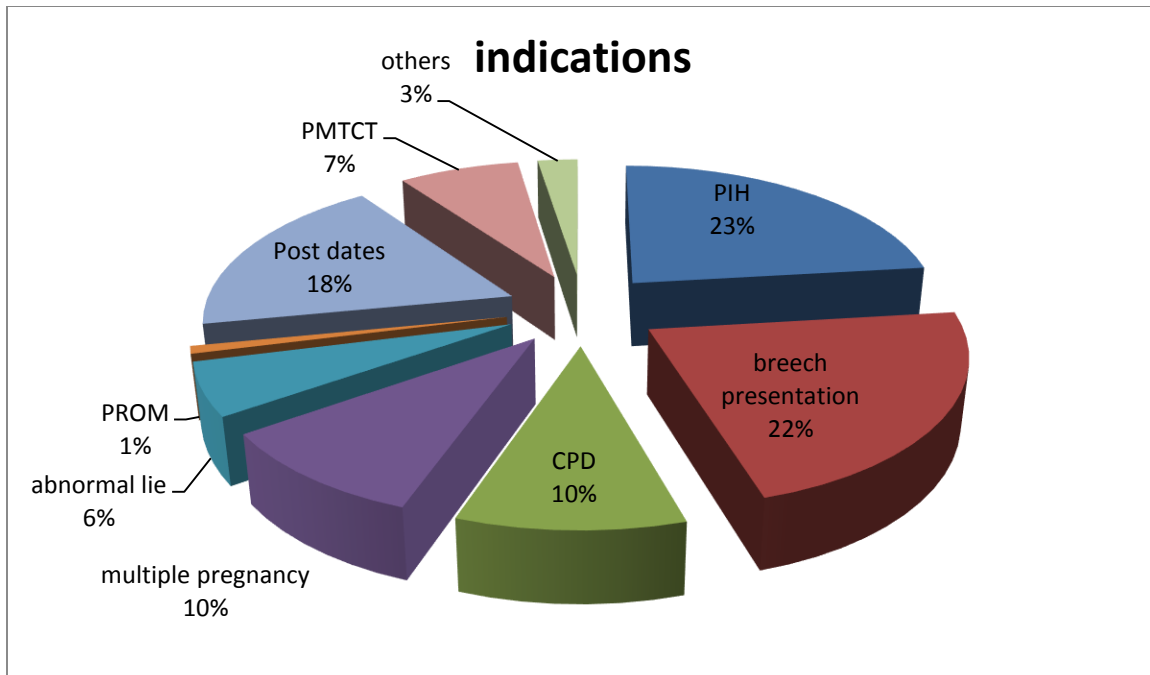


Table 3 :Anxiety levels of the patients recruited

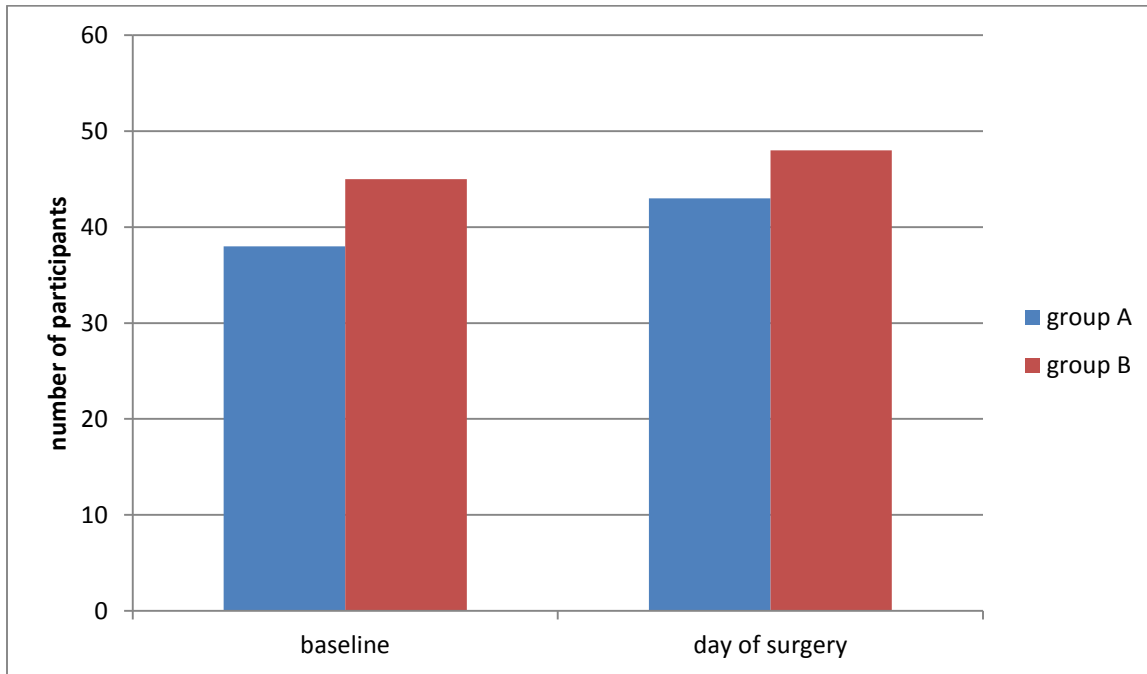
		Group A	Group B	
	Anxiety level	n	n	p-value
baseline	≤11	22	15	0.000
	>11	38	45	0.000
Morning of operation	≤11	16	10	0.000
	>11	43	48	0.000

The patients with scores less than or equal to 11 are considered to have no anxiety. The patients with a total score greater than 11 were considered anxious.

On the baseline assessment of anxiety, the results showed that the participants were anxious with 38 of the 60 participants (63.3%) in group A (booklet) and 45 of the 60 participants (75.0%) in group B (no booklet) and was statistically significant ($p=0.000$). On the day of the surgery there was an increase in the number of participants who were anxious in both groups even though three participants were lost to follow up. In group A the number of anxious participants increased to 43 (72.9%) and in group B the number of anxious participants increased to 48 (82.8%). These results show that the patients were still anxious regardless of receiving the information booklet or not.

Baseline anxiety assessment showed that 38 of the 60 participants in group A against 45 of 60 participants in group B were anxious and this was statistically significant. More patients were anxious in the non-intervention group.

Figure 2: Anxiety levels



The diagram above shows the comparisons of the anxiety levels in the two groups. More of the participants in group B were anxious compared to those in group A both on baseline assessment and on the day of surgery.

Table 4: Comparison between baseline and day of surgery anxiety levels

	Anxiety score	Group A	Group B
		n	n
Baseline	≤11	22	15
Day of surgery	≤11	16	10
p-value		0.8938	0.8500
Baseline	>11	38	45
Day of surgery	>11	43	48
p-value		0.1307	0.1500

The table above shows the proportions of the anxiety scores of the participants. There was a decrease in number of participants who were not anxious. This decrease was not statistically significant ($p=0.8938$ for study group and $p=0.8500$ for control group). There was an increase in the number of participants that were anxious on the day of surgery. The number increased from 38 to 43 for group A (booklet) participants and from 45 to 48 for group B participants (no booklet). This increase in numbers however was not statistically significant ($p=0.1307$ for group A and $p=0.1500$ for group B). This shows that there was no significant change in anxiety of the participants on the day of surgery despite administration of the information booklet in group A participants.

Table 5: Scoring of the need for information

	score
None/little information need	2 - 4
average information need	5 - 7
high information need	8 - 10

The participants' need for information was also assessed using the questionnaire. Questions 3 and 6 on the questionnaire assessed the need for information. The total score ranges from 2 to 10.

Table 6:Need for more information

	Group A	Group B	total		p-value
	n	N			
None/little information need	30	20	50	42.7%	0.099
Average information need	15	7	22	18.8%	0.031
High information need	14	31	45	38.5%	0.001
	59	58	117		

Most of the participants had no or little need for more information comprising 42.7% of the participants(n=50). Those with a high need for more information were 38.5% (n=45). There were more participants with high need for more information in group B (n=31) compared to those in group A (n=14). This difference was statistically significant(p=0.001). This shows that more of the participants that did not receive the information booklet had a high need for information. Those with average need for information were statistically significant with p=0.031 overall. This may mean that the booklet supplied left patients with some degree of need for more information.

Table 7:Relationship between anxiety score and need for information score

group	r	p-value
Group A	0.638**	0.000
Group B	0.797**	0.000

** Correlation is significant at the 0.01 level (2-tailed)

The relationship between the need for information and the anxiety levels was also assessed.

The results showed that there was a positive correlation between the need for information and

anxiety level. For the control group there was positive correlation ($r=0.797$) and this was statistically significant ($p=0.000$). The same applied to the study group with a positive correlation ($r=0.638$) which was significant as well ($p=0.000$).

Table 8: The relationship between anxiety level and need for information score by category

Group	Info need categories	r	p
Group A	No/little information	-0.11	0.562
	Average need	-0.331	0.210
	High information need	0.441	0.114
Group B	No/little information	-0.06	0.790
	Average need	0.220	0.636
	High information need	0.862**	0.000

** . Correlation is significant at the 0.01 level (2-tailed).

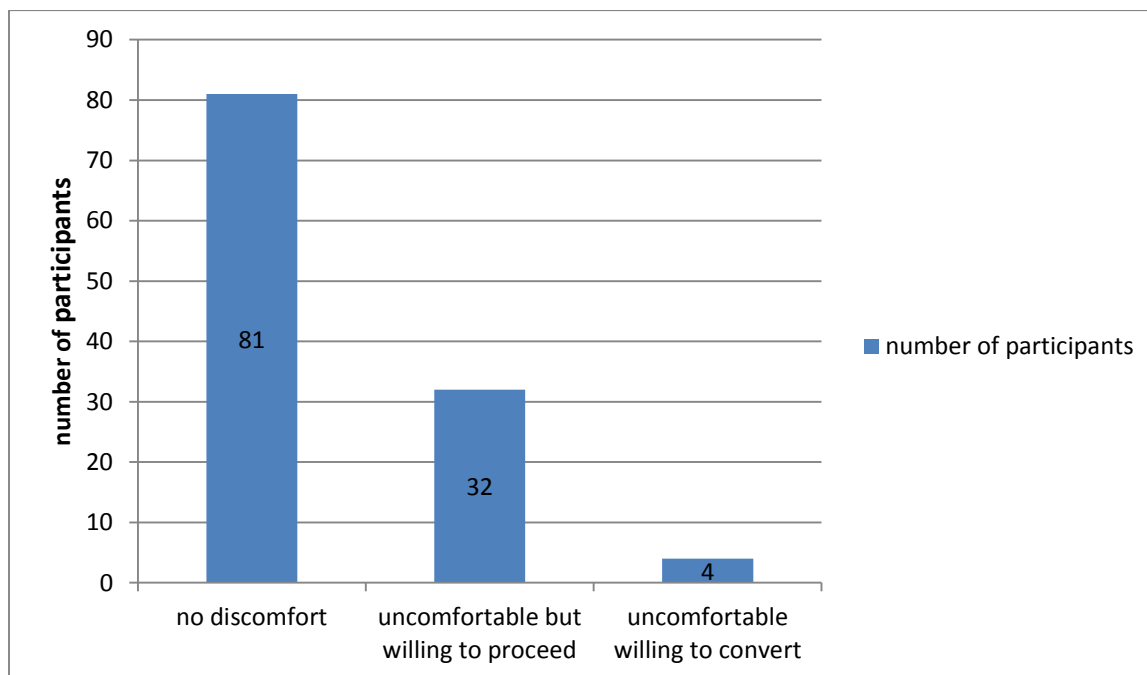
The patients in the control group that had a high need for information also had a high anxiety level ($r=0.862$) and was statistically significant. Those in the study group also had a positive correlation between the need for information and anxiety ($r=0.641$) with a p-value of 0.014. The other categories did not have statistically significant correlations.

Table 9: Intra operative assessment

		n	%
Level of comfort	No discomfort	81	69.2
	Uncomfortable but willing to proceed with spinal	32	27.4
	Uncomfortable and not willing to proceed with spinal	4	3.4
Are you feeling pain	Yes	11	9.4
	No	106	90.6
Converted to general anaesthesia	yes	4	3.4
	No	113	96.6

The participants were asked to report if they experienced pain at any point during the procedure. Although 9.4% of the participants reported experience of pain at some point, only 3.4 % proceeded to have the anaesthetic converted to a general anaesthetic.

Figure 3: patients' level of comfort (total n=117)



The majority of the participants were comfortable with having the caesarian section being done under spinal anaesthesia (69.2%) (n=81). Those that were not comfortable with the caesarian section being done under spinal anaesthesia were 3.4 % (n=4). The procedure was subsequently done under general anaesthesia. Thirty two participants 27.4% reported some discomfort but were willing to proceed with the operation under spinal anaesthesia.

Table 10:Follow up(Total n=117)

		n	%
How do you view the spinal anaesthetic	satisfactory	111	94.9
	unsatisfactory	6	5.1
Would you like to have spinal anaesthesia in the next operation	yes	110	94.0
	no	7	6.0

The day after the operation, the participants were asked how they viewed the spinal anaesthetic they had received. The majority of them (94.9%) were satisfied with the anaesthetic. In addition 94.0% were willing to have a spinal anaesthetic again if they were to have another caesarian section. This means that maybe three participants from the 32 who were uncomfortable during the procedure in the end made up their minds to have a spinal subsequently.

The participants were then asked to comment on any concerns they might have regarding the spinal anaesthesia they had received. Of the 117 participants, 105(89.7%) responded. Twenty nine of these (27.6%) reported to have had a mild to moderate headache that was non-

incapacitating. Backache was reported in 3 of the participants (2.9%). The participants that did not report any concerns were 73 (69.5%).

Discussion

In the study a total of 120 patients were recruited with 60 patients in each group. Three were lost to follow-up due to unforeseen reasons. The demographics of the patients showed that there was no significant difference between the study and the control group in terms of age, marital status nor level of education. These parameters did not have an effect on the results found.

Subjective assessment of preoperative anxiety is found to be inaccurate because it is not possible for practitioners to know exactly what their patients feel. Both the anaesthetist and surgeon was found to underestimate their patients' anxieties^{5, 35}. Preoperative anxiety may be assessed objectively using several methods such as the Spielberg State Trait Anxiety Inventory (STAI) and Visual Analogue Scale for Anxiety (VAS – A) among others. The APAIS was used because it is simple, short and can be completed within two minutes.

The study set out to ascertain whether there was anxiety in patients scheduled for elective caesarian section under spinal anaesthesia. The results showed that these patients were anxious with 63.3% (n=38) in group A and 75.0% (n=45) in group B. This was statistically significant ($p=0.000$). These results support the hypothesis made that the patients scheduled for caesarian section are anxious in the preoperative period. There was a statistically significant difference in anxieties between the control group and the study groups. Ying C et al studied patients undergoing elective caesarian section and showed that 53% of the women experienced

anxiety pre-operatively.²⁹In another study by Jawaid et al, they assessed preoperative anxiety level of patients for elective surgery.³The results showed that there was anxiety in 44.7% of the patients awaiting surgery. Masood Z et al carried out a survey in patients admitted in surgical units awaiting elective surgery and women were found to experience high levels of preoperative anxiety compared to men.¹⁷ This shows that women in general are more anxious than men in the preoperative period. This supports the findings in the study that the participants had statistically significant anxiety at the baseline assessment. The finding of statistically significant difference in baseline anxiety among the two groups in this study could just be incidental since women tend to have more anxiety.

The anxiety level of the patients on the day of the caesarian section was also assessed. The women's anxieties were increased in both the study and the control groups in terms of proportions. The number of patients in the study group that were anxious increased from 45 to 48($p=0.1500$). Those in the control group that were anxious increased from 38 to 43($p=0.1307$). However this increase in anxiety from the baseline level to that on the day of surgery was not statistically significant. Some studies have highlighted how regional anaesthesia has a negative effect on patients. Birch et al performed a survey in day surgery patients experiencing cystoscopy under local anaesthesia. Their results showed that many patients were highly anxious on the day of surgery. Those anxious mostly were those undergoing the procedure for the first time, younger patients and female patients.⁶¹This relates to the study in that the participants in this study were young with average ages of 28.55years for group A and 26.78years for group B. They were female participants undergoing surgery for the first time.

The reason for a marginal increase in the anxiety in the intervention group A could be that the information booklet was inadequate in so far as content was concerned.

One of the distinct areas of patient anxiety concerns provision of information. It was hypothesized that the use of an information booklet would reduce anxiety in the study group patients but this was not so. Most studies showed that information provision reduced anxiety. In a study done by Ting et al they looked at patient perception about preoperative information to allay anxiety towards major surgery. Seventy eight percent of the patients stated that they experienced anxiety before surgery. The top information that patients perceived as important to allay anxiety towards major surgery were:

- Details of surgery
- Details of nursing care after surgery
- Information on anaesthesia⁶²

In the booklet used for the study, there was information on anaesthesia and details of nursing care after surgery. However there were no details on surgery.

The need for more information among patients was also assessed by the questionnaire used. The majority of the patients 43.3% reported to have no or little need for information. There was no statistically significant difference between the control and study group in those patients that had none or little need of information. However those with average or high need for

information were more in the control group. The difference with the study group was statistically significant ($p=0.031$ and $p=0.001$ respectively). The participants in the control group who did not have access to the information booklet who had a high need for information were more than those in the study group. Thirty one of the fifty eight participants had high need for information compared to fourteen in the study group. ($p=0.001$) This could mean that the booklet given reduced the need for information for those who had a high need for information while leaving gaps for average need of information such as details of surgery.

The need for information was also correlated with the anxiety levels of the patients. Overall there was a positive correlation between the need for information and anxiety levels ($r=0.797$ for control group and $r=0.638$ for the study group). These results were statistically significant with $p=0.000$. This shows that the patients with a higher need for information were likely to have high levels of anxiety. When the categories were subdivided, the results showed that there was a high correlation between anxiety and high need for information. This was found in the study by Moermann et al that patients with high anxiety levels had a high need for information. (50) The participants with high need for information were 139 (43.4% of the total) with an anxiety score of 10.3. The participants with average need for information were 127 (39.65 of the participants) with an anxiety score of 8.4 and those with no or little need for information were 54 (16.9% of the total).

In another study by Laufenberg – Feldmann et al, the aim was to identify the prevalence of pre-operative anxiety and the need for information using the APAIS. Anxiety was assessed in relation to influencing factors such as age, sex, previous surgery and grade of surgery. Eighteen percent of the patients were classified as anxious. The grade of intended surgery was related to patients' anxiety. They found that the APAIS was a useful instrument to assess level of patients' preoperative anxiety and need for information.⁶³

The day after the caesarian section a survey was done to assess patients' satisfaction with the caesarian section under spinal anaesthesia. The majority, 94.9% were satisfied and 94.05% reported that they would be willing to have a spinal anaesthetic if they were to have another caesarian section. However some participants were not happy with the spinal anaesthetic but were still willing to proceed with the operation. These results show that in general spinal anaesthesia was accepted by the participants included in study.

Participants were also asked if they had any other concerns relating to the spinal anaesthetic they had received. Response was obtained from 105 of the 177 participants (89.7%). An incidental finding was made of a significant number of patients who complained of a headache post-operatively (27.6%). Post-dural puncture headache is a well-known complication of spinal anaesthesia.

Conclusion

The preoperative anxiety in patients scheduled for caesarian section is a reality and is a problem that needs to be addressed in order to improve the quality of anaesthesia delivery. Despite being anxious, there was significant acceptance of spinal anaesthesia in patients scheduled for caesarian section. The information booklet did not reduce anxiety. The average need for information in the participants who had received the information booklet was significantly more than the control group. The high need for information was significant in the group that did not have access to the booklet. This implies that information booklets must be fully detailed, simple according to the cohort participants' medical knowledge. Although validation may be done, cultural differences may determine the usefulness of adopted tools.

Recommendations

After establishing that patients experience preoperative anxiety, the causes of the anxiety need to be investigated. Understanding the causes of anxiety would help in mapping a way to manage these patients.

The introduction of anaesthetic clinics in the perioperative period would give patients an opportunity to familiarize with the anaesthetist, interact and learn more about the proposed anaesthetic.

Post-anaesthetic rounds can help with identification and early management of any post-anaesthetic problems encountered by patients.

A wider scale validation of the instrument in other surgical specialties might need to be done to make way for the implementation of the instrument in further studies. The APAIS can be used to assess preoperative anxiety in patients scheduled for any surgery. Validation of its use in these specialties for the local population would be helpful in the widespread use of the tool as is the case in other patient populations.

Study limitations

The instrument was adapted from a questionnaire that has been used and validated in several other populations such as the French, the Japanese, German and Canadians. However it has not been used in any other African country.

The patients were nursed in the same wards. Despite being given strict instruction not to disclose the information booklet to other participants or nursing staff, there is still a possibility of information sharing.

The study results cannot be inferred in other patients since it was carried out in obstetric patients that are known to have a higher level of anxiety than the general female population.

REFERENCES

1. Kindler CH. A qualitative analysis of anaesthetist – patient communication during the perioperative visit 2005. *Anaesthesia* ; 60(1) : 53-59
2. Kennedy BW, Thorp JM, Fitch W, Millar K. The theatre environment and the awake patient. *Journal of Obstetrics and Gynaecology* 1992; 12: 407-411.
3. Jawaid M, Mushtaq A, Mukhtar S, Khan Z. Pre-operative anxiety before elective surgery. *Neurosciences* 2007; 12(2):145 – 148
4. Massod J, Asim M, Sabib M, Zecshan K. Preoperative anxiety before elective surgery. *Neurosciences* 2007; 12(2): 145-148
5. Badner NH, Neilson WR, Munk S, Kwiatkowaska C, Gelb AW. Preoperative anxiety detection and contributing factors. *Can J Anaesthesia* 1990; 97: 444-447
6. Babatunde B, Osinaike MD, Dairo EO, Oyebamiji JO, Odesanya A, Tanimowo T. Attitude of general public to risks associated with anaesthesia. *East African Journal of Public Health* 2007; 4(1): 40-42.
7. Shumbairerwa S. Non pharmacological relief of pre and postoperative anxiety at Parirenyatwa Central Hospital 1998.
8. Harare central hospital statistics records for 2013
9. Parirenyatwa Group of hospitals Statistics records for the year 2013
10. Katzen J. Management of anxiety in the refractive surgical patient. *Insight* 2002; 27: 103-109.
11. Griene RJ. Day surgery preoperative anxiety reduction and coping strategies. *Br J Nurs* 2002; 11(10):670 - 678

12. Spaulding NJ. Reducing anxiety by preoperative education : make the future familiar.
Occup Ther Int 2003; 10(4): 278 - 293
13. Orbach-Zinger S, Ginosar Y, Ellison J, Fadon M, Abu-Lil M, Raz A, Gashan –Gottstan Y, Eidelman LA. Influence of preoperative anxiety on hypotension after spinal anaesthesia in women undergoing caesarian delivery. Br J Anaesth 2012; 109(6): 943 - 949
14. Caumo W, Schmidt AP, Schneider CN, Bergmann J, Iwamoto CW, Bandeira D. Risk factors for preoperative anxiety in adults. Acta Anaesth Scand 2001; 45: 298-307
15. Williams JGI, Jones JR. Psychophysiological responses to anaesthesia and operation. JAMA 1968; 203: 478-482
16. Hobson JA, Slade P, Wrench IJ, Power L. Preoperative anxiety and post operative satisfaction in women undergoing elective caesarian section. Int Obstet Anaesth 2006;15:18-23.
17. Masood Z, Hunder J, Jawaid M, Alam SN. Preoperative anxiety in female patients:the issue needs to be addressed. KUST Med J 2009; 1(2) : 38 - 41
18. Wojciech R. Preoperative anxiety assessment using questionnaire. Anaesth Intensive Therapy 2009
19. Nigussie S, Belachew T, Wolancho W. Predictors of preoperative anxiety among surgical patients in Jimma University Specialized Teaching Hospital, South Western Ethiopia. BMC surgery 2014; 14:67
20. Alvarado K, Temper P, Bresler C, Dobson D. The relationship of religious variables to death depression and death anxiety. Journal of clinical Psychology;51:202 – 204

21. Chang B, Noonan A, Tennstedt S. the role of religion or spirituality in coping with caregiving for disabled persons. *Gerontologist* 1998; 38:463 – 470
22. Mitchell M. Conscious surgery: Influence of the environment on patient anxiety. *Journal of Advanced Nursing*; 64(3): 261-271.
23. Jjala HA. Effect of preoperative multimedia information on perioperative anxiety in patients undergoing procedures under regional anaesthesia. *British Journal of Anaesthesia* 2010; 104(3): 369 – 374.
24. Di Pietro JA. The role of maternal stress in child development. *Current Directions in Psychological Sciences* 2004; 13(2):71 – 74
25. Anxiety and pregnancy. <http://perinatal.anxietybc.com>
26. Huizink AC, Mulder EJH, Buitelaar JK, Prenatal stress and risk for psychopathology: specific effects on induction of general susceptibility? *Psychological Bulletin*; 130(1): 115 – 142
27. Monk C. Stress and mood disorders during pregnancy: Implications for child development. *Psychiatric Quarterly*; 72(4): 347 – 357
28. Van den Berch B. Anxiety during pregnancy increases attention deficit hyperactivity disorder risk. *Child development*; 75(4)
29. Ying C, Levy L, Shan V, Wing CO, Hung T, Wan W. Qualitative study of the perceptions of Hong Kong Chinese women during caesarian section under regional anesthesia. *Midwifery* 2001;17(2): 115-122
30. Mauleen A, Patients experiencing local anaesthesia and hip surgery. *Journal of clinical nursing* 2007; 16(5): 892-899.

31. Chan Z, A systematic review of preoperative studies: patient's experiences of preoperative communication. *Journal of clinical nursing* 2007; 21(5): 812-824.
32. Goldmann L, Oqq TW, Levey AB. Hypnosis and daycase anaesthesia: A study to reduce preoperative anxiety and intra operative anaesthetic requirements. *Anaesthesia* 1988; 43(6): 466 - 9
33. Leigh JM, Walker J., Janaganathan P. *British Medical Journal* 1977; 2: 987-989.
34. Hobson JA, Preoperative anxiety and post operative satisfaction in women undergoing elective caesarian section. *Journal of Obstetric Anaesthesia* 2006; 15(1): 18-23
35. Jjala HA, Bedforth NM, Hardman JG. Anaesthesiologists' perception of patients' anxiety under regional anaesthesia. *Local and Regional Anaesthesia* 2010; 3 :65 - 71
36. Cooke M, Chaboyer W, Schluter P, Huratos M. The effect of music on preoperative anxiety in day surgery. *J Adv Nurs* 2005; 52: 47-55
37. Mitchell M, General anaesthesia and day case patient anxiety. *Journal of Advanced Nursing*; 66(5): 1059-1071.
38. Miller SM, Coach C., Stoddart E. Information, coping and control in patients undergoing surgery and stressful medical procedures. In : Steptoe A , eds. *Stress , personal control and health*. New york wiley , 1989; 107-130
39. Oldman. Anxiety management in minimal stay surgery.
40. Lack J, Raising the standard : Information for patients. London : Royal college of Anaesthetics and Association of Anaesthetists of Great Britain and Ireland. Tinyuri.com/RCA – raising standards.

41. Olver IN, Turrell ST, Olszewski NA, Wilson KJ. Impact of an information and consent form on patients having chemotherapy. *Med J Aust* 1995; 162 :82-83.
42. Stanley BM, Walters DJ, Maddem GT. Informed consent : how much information is enough? *Aust NZ J Surg* 1998; 68: 788 – 791.
43. Jakobsen VH, Fergermoen MS. Environmental factors in the operating theatre and their impact on patient's preoperative anxiety. (Norwegian) *Tidsskriff For Sykepleieforskning; &(4): 4-17*
44. Parrog S, Thorns G, Williamson C. The practicalities of developing patient information. In *raising the standard: Information for patients.*
45. Deyirmerijian M, Karam N, Salameh P. Preoperative patient education for open heart patients. A source of anxiety? *Patient education Couns* 2006; 62: 111 – 117.
46. Ng SKS, Chau AWL, Leung WK. The effect of preoperative information in relieving anxiety in oral surgery patients. *Community Dent Oral Epidemiol* 2004; 32(3): 227 - 235
47. Nishimon M, Moerman N, Fukuhara S, Van Dam FSAM, Muller MJ, Hanaoka K, Yamada Y. Translation and validation of the Amsterdam preoperative anxiety and information scale (APAIS). *Quality of Life Research* 2002;11(4): 361
48. Tong D, Chung F, Wong D. predictive factors in global and anaesthetic satisfaction in ambulatory surgical patients. *Anaesthesiology* 1997; 87(4): 856-864.
49. Berth H, Petrowski K, Balck F. The Amsterdam Preoperative Anxiety and Information Scale – the first trial of a German version. *Psychosoc Med* 2007; 4: Doc 01
50. Moermann N, van Dam FSAM, Muller MJ, Oosting H. The Amsterdam Preoperative Anxiety and Information Scale (APAIS). *Anaesth Analg* 1996; 82: 445-51.

51. Boker A, Brownell L, Donen N. The APAIS provides a simple and reliable measure of preoperative anxiety. *Can J Anaesth* 2002; 49:792 – 798
52. Waterman H, Mayer S, Lavin MJ, Spencer AF, Waterman C. An evaluation of the administration of sub-tenon local anaesthesia by a nurse practitioner. *Br J Ophthalmol* 2002; 86: 524 – 526
53. Lydon A, McGinley J, Cooke T, Duggan PF, Shorten GD. Effect of anxiety on the rate of gastric emptying of liquids. *Br J Anaesth* 1998; 81: 522-525
54. Miller KM, Ysocki T, Cassady JF, Cancel D, Izemberg N. Validation of measures of parents' preoperative anxiety and anaesthesia knowledge. *Anaesth analg* 1999; 88: 251 – 257
55. Spencer C, Frank LS. Giving parents written consent about children's anaesthesia. Are setting and timing important? *Pediatr anaesth* 2005; 15: 547-553
56. Stoddard JA, White KS, Covino NA, Strauss L. Impact of a Brief Intervention on Patient Anxiety Prior to Day Surgery. *J Clin Psychol med Settings* 2005; 12: 99-110
57. Garip H, Abali O, Goker K, Gokturk U, Garip y. Anxiety and extraction of third molars in Turkish patients. *Br J Oral Maxillofac Surg* 2004; 42: 551 – 557
58. Shin WJ, Kim IC, Yeom JH, Cho SY, Lee OH, Kim DW. The validity of Amsterdam Preoperative Anxiety compared with hospital anxiety depression scale and Visual Analogue Scale. *Korean J Anaesthesiol* 1999; 37:179 – 187
59. Sirinan C, rungreungvanich M, Vijitpaven A, Markchareonpong C. Preanaesthetic anxiety assessment : HADS versus APAIS. *Thai J Anaesth* 2000; 26: 155-163 for use in cross-cultural studies. *Eur J Psychol Assess* 1993; 9: 57-68

60. Maurice – Szamburski A, Loundou A, Capdevila X, Bruder Nicolas, Auguier P. Validation of the French version of the Amsterdam Preoperative Anxiety and Information scale (APAIS). *Health and quality of life outcomes* 2013; 11: 166
61. Birch BRP, Chakraborty R, Miller RA. Anxiety in patients undergoing local anaesthetic day case cystoscopy. *Journal of one day surgery* 1993; 3 : 15 – 17
62. Ting KEL, Ng MSS, Siew WF. Patient perception about preoperative information to allay anxiety towards major surgery.
63. Laufenberg-Feldmann R, Kappis B. Assessing preoperative anxiety using a questionnaire and clinical rating : a prospective observational study. *Eur J Anaesthesiol* 2013 : 30(2) : 758 - 763

Appendix 1

SUBJECT INFORMED CONSENT

Title: Preoperative anxiety levels in obstetric patients receiving spinal anaesthesia. Does an information booklet reduce anxiety and improve quality of anaesthesia?

Principal investigator: Dr Machaya Tatenda .B.

Phone number: +263 772 221 120

E mail address:tatesande@gmail.com

What you should know about this study:

- This consent form is being given to you so that you may read about the purpose , risks and benefits of this study
- Routine care is based upon the best known treatment and is provided mainly to help the individual patient. The main goal of the research study is to gain knowledge that may help future patients.
- We cannot promise that this research will benefit you.
- You are free to refuse to participate or agree to take part now and change your mind later.
- Whatever you decide to do will not affect the regular care you should receive
- Please read through this consent form carefully
- Ask any questions before you make a decision.
- Your participation is voluntary

Project description

Spinal anaesthesia is becoming popular with proven safety record in caesarian sections (operation done to deliver baby) .A patient may have anxiety as a result of the operation being performed while they are awake .In studies carried out in other countries, they showed that this can be reduced by introduction of information multimedia before the operation.This study seeks to determine if the findings of these studies are the same with the local population.

Your rights

Before you decide whether or not to participate in the study, you must understand its purpose, how it may help you and what is expected of you.This process is called informed consent.

Purpose of study

The purpose of this study is to assess anxiety in patients who are to receive spinal anaesthesia.A spinal anaesthesia information booklet will be introduced and the effect on preoperative anxiety is assessed.

Procedure involved in the study

This study will be carried out at Mbuya Nehanda Hospital and Harare Central Hospital maternity centres.Patients who are to have caesarian section under spinal anaesthesia who satisfy the inclusion criteria will be selected. If you decide to participate you will be asked a set of questions on the day before the operation. Some patients will receive an information booklet regarding spinal anaesthesia while others will not. This is done in order to assess how effective the introduction of the booklet in daily practice is in reducing anxiety in mothers who are to have an operation under spinal. On the morning of the operation, the same questions will be asked. In

theatre, two conventional drugs will be injected into the fluid around your spinal cord. This will give you the expected feeling of paraesthesia (numbness), which is temporary. This is followed by loss of sensation to pain and temperature in your lower limbs, abdomen and lower part of your chest and back. This is spinal anaesthesia. It is during this state that the caesarian section is done. During the operation you will be asked a few questions to see how comfortable you are with the spinal anaesthetic. These questions do not interfere with the normal conduct of anaesthesia and the operation. The morning after the operation you will be asked about your views on the spinal anaesthetic.

Discomforts and risks

There are no direct risks to you or your baby as a result of the study other than those related to the operation and the anaesthesia.

Study withdrawal

You may choose not to enter the study or withdraw from the study at any time without loss of benefits entitled to you.

Potential benefits

We do not guarantee or promise that you will receive any monetary or material gains in this study. You will not stay in the hospital any longer than you will be required by your doctors. The anaesthetic and hospital costs are part of standard care for your operation and you will not be charged extra for participating in this study.

Confidentiality of records

Your participation in this study is confidential. None of the information will identify you by name but by a unique study identification number .Every effort will be made to keep the information confidential.

Problems / questions

Please ask questions about this study or consent. Questions in future can be directed to Dr Tatenda Machaya on the number 0772 221 120.If you have questions or concerns about your participation as a research subject , please contact the Medical Research Council of Zimbabwe on the number 04-791792 or 04-791193.

Authorization

I have read each page of this paper about the study (or it was read to me). I understand the possible risks and benefits of this study. I know that being in this study is voluntary. I choose to be in this study. I know I can stop being in this study and I will not lose any benefits entitled to me. I will get a copy of this consent form now.

Participant’s signature Date...../...../.....

Participant’s name(printed)

Reseacher’s signature..... Date...../...../.....

Witness’ signature.....Date...../...../.....

Appendix 2

SUBJECT INFORMED CONSENT

TITLE: Preoperative anxiety levels in obstetric patients receiving spinal anaesthesia. Does an information booklet reduce anxiety and improve quality of anaesthesia?

Muongorori: Dr Machaya Tatenda B

Runhare :+263 772 221 120

E mail :tatesande@gmail.com

Zvemunofanira kuziva maererano netsvakurudzo iyi :

- Gwaro rekubvuma iri riri kupihwa kwamuri kuti muverenge nezvechinangwa , njodzi nezvakanakira tsvakurudzo iyi.
- Rubatsiro rwagara rwuchipihwa runotevedzwa nenzira dzakanaka dzinozivikanwa uye rwunopihwa nechinangwa chikuru chekubatsira murwere ega ega. Chinangwa chikuru chezvidzidziso zvetsvakurudzo ndechekuwana ruzivo rungazobatsira varwere muneramangwana.
- Hatikwanise kukuvimbisai kuti tsvakurudzo iyi ingakubatsirai.
- Makasununguka kuramba kupinda mutsvakurudzo kana kubvuma kupinda iye zvino mozoshandura pfungwa dzenyu pashure
- Chero danho ripi zvaro ramunenge matora harizokanganise rubatsiro rwamagara muchifanira kuwana.
- Munokumbirwa kuverenga gwaro rekubvuma rino zvakanaka.
- Bvunzai chero mibvunzo musati matora danho.
- Kupinda kwenyu mazvokuda.

Mamiriro etsvakurudzo

Chiveve chinopiwa nekumusana chiri kuva nemukurumbira uye chine nhoroondo inozivikanwa yakanaka mukusunungukwa kwemwana neopareseni. Murwere anogona kuva nekusagadzikana zvichitevera kuitwa opareseni wakasvinura. Mutsvakurudzo dzakaitwa mune dzimwe nyika zvakataridza kuti kusagadzikana uku kunogona kuderredzwa nekuvapo kwenzira dzinopa ruzivo kumurwere asati aitwa opareseni. Tsvakurudzo iyi yakanangana nekuona kana zvakawanikwa izvi mutsvakurudzo zvakafanana kana zvaitwa muvanhu vemuno.

Kodzero dzenyu

Musati matora danho rekuva kana kusava mutsvakurudzo munofanirwa kunzwisisa chinangwa chayo, kuti inogona kukubatsirai sei uye zvinotarisirwa kwamuri. Chirongwa ichochi chinonzi mvumo yekuziviswa.

Chinangwa chetsvakurudzo

Chinangwa chetsvakurudzo iyi ndechekuda kuongorora kusagadzikana muvarwere vanenge vachifanirwa kuiswa chiveve nekumusana. Bhuku rine ruzivo rwunechekuita nechiveve chinopiwa nekumusana richawaniswa kumurwere, kochiongororwa shanduko pakusagadzikana kana munhu asati aitwa oparesheni.

Maitirwo etsvakurudzo

Tsvakurudzo iyi ichaitwa kunzvimbo dzekusunungukira mwana paMbuya Nehanda Hospital uye Harare Central Hospital. Varwere vakanangana nekusununguka mwana neopareshani wakaiswa chiveve nekumusana. Vanokodzera kupinda muchirongwa ndivo vachasarudzwa. Kana mafunga kupinda muchabvunzwa chitsama chemibvunzo manheru ari mumashure mezuva reoparesheni. Pedzezvo vamwe vachapiwa rugwaro runotsanangudza kupiwa chiveve chekumusana vamwe havapiwi. Izvi zviru kuitirwa kuongorora rubatsiro rwerugwaro urwu pakuderredza kusagadzikana kana munhu asati aitwa oparesheni. Mangwanani eoparesheni mibvunzo mimwe chete ichabvunzwa musati maenda kuoparesheni. Muchaiswa mishonga yagara ichishandiswa miviri, mumvura dzemuviri dzakatenderredza tsinga dzekumusana. Izvi zvinokupai chiveve chinotarisirwa kwenguva pfupi. Izvi zvinoteverwa nekusanzwa marwadzo kana kudziya kana kutonhora kwemitezo yekumakumbo, muudyu, uye pazasi pechipfuva nemusana. Ichi ndicho chiveve chinopiwa nekumusana. Kana zvadaro oparesheni inokwanisa kuitwa. Pakati peoparesheni muchabvunzwa mibvunzo mishoma kuti tione kugadzikana kwenyu muchiitwa oparesheni makaiswa chiveve nekumusana. Mibvunzo iyi haikanganise maitirwo agara achiitwa ekupa chiveve neoparesheni. Mangwanani ezuva rinotevera muchabvunzwa mibvunzo maererano nemaonero enyu echiveve chekumusana.

Marwadzo uye njodzi

Hapana njodzi dzakanangana nemi kana mwana nekuda kwetsvakurudzo kunze kweidzo dzine chekuita nekuiswa chiveve neoparesheni.

Kubuda mutsvakurudzo

Munogona kusarudza kusapinda mutsvakurudzo kana kubuda mutsvakurudzo chero ipi nguva pasina kuzoshaikwa kwerubatsiro rwamagara muchifanira kuwana.

Zvingagone kuwanikwa mutsvakurudzo

Hatikuvimbisei kuti muchapihwa muripo wemari kana zvimwewo zvinhu mutsvakurudzo iyi. Hamuzogare muchipatara nguva yakareba kudarika iyo inodiwa nana chiremba venyu. Miripo yechiveve neyechipatara yagara iri chikamu cherubatsiro rwamagara muchifanira kuwana, uye hamuzobhadhare imwezve mari nekuva kwenyu mutsvakurudzo iyi.

Kuvanzwa kwemagwaro

Kuva kwenyu mutsvakurudzo iyi kwakavanzwa. Hapana chero ruzivo rwuchaita muzivikanwe nezita asi nenhamba ichashandiswa yakanangana netsvakurudzo. Kuchatorwa matanho ose anogoneka kuti ruzivo rugare rwakavanzwa.

Matambudziko/Mibvunzo

Munokumbirwa kubvunza mibvunzo maererano netsvakurudzo kana mvumo iyi. Mibvunzo ingazotevera inogona kuendeswa kuna Dr Tatenda Machaya paruhare runoti 0772 221 120. Kana mune mibvunzo kana kushushikana nekuva kwenyu mutsvakurudzo iyi, munokumbirwa mubate Medical Research Council of Zimbabwe paruhare runoti 04-791792 kana 04-791193.

Mvumo

Ndaverenga zvikamu zvose zvegwaro rino maererano netsvakurudzo(kana kuti ndaverengerwa).Ndinonzwisisa njodzi kana zvakanaka zvinogona kubuda mutsvakurudzo iyi. Ndoziva kuti kuva mutsvakurudzo iyi mazvokuda. Ndasarudza kuva mutsvakurudzo. Ndinoziva ndinogona kumira kuva mutsvakurudzo iyi uye handizoshaye rubatsiro rwandagara ndichifanira kuwana. Ndichawanawo rugwaro rwangu rwekubvuma iye zvino.

Runyoro rwemuongorori..... Zuva.....

Zita remuongorori

Runyoro rwemuongorori..... Zuva

Runyoro rwechapupu..... Zuva

Appendix 3

PREOPERATIVE ANXIETY QUESTIONNAIRE

Date enrolled : .../... /

ID Number :

Part I :Patient demographics

Age

Level of education :.....

ASA Grade :

Procedure :

Occupation :

Marital status :

Part II :Baseline anxiety assessment(adoption of the Amsterdam preoperative Anxiety and Information Scale)

1.I am worried about the anaesthetic

Strongly agree

agree

neutral

disagree

strongly disagree

2.The anaesthetic is on my mind continuously

Strongly agree

agree

neutral

disagree

strongly disagree

3.I would like to know as much as possible about the anaesthetic.

Strongly agree

agree

neutral

disagree

strongly disagree

4.I am worried about the procedure.

Strongly agree

agree

neutral

disagree

strongly disagree

5.The procedure is on my mind continuously

Strongly agree

agree

neutral

disagree

strongly disagree

6.I would like to know as much as possible about the procedure

Strongly agree

agree

neutral

disagree

strongly disagree

Total score :

Part III :Morning of surgery

1. I am worried about the anaesthetic

Strongly agree

agree

neutral

disagree

strongly disagree

2.The anaesthetic is on my mind continuously

Strongly agree

agree

neutral

disagree

strongly disagree

3.I would like to know as much as possible about the anaesthetic.

Strongly agree

agree

neutral

disagree

strongly disagree

4.I am worried about the procedure.

Strongly agree

agree

neutral

disagree

strongly disagree

5.The procedure is on my mind continuously

Strongly agree

agree

neutral

disagree

strongly disagree

6.I would like to know as much as possible about the procedure

Strongly agree

agree

neutral

disagree

strongly disagree

Total score :

Part IV :Level of patient comfort during spinal anaesthesia

no discomfort

uncomfortable but willing to proceed under spinal anaesthesia

uncomfortable and willing to convert to general anaesthesia(be put to sleep)

Are you feeling pain? Yes

no

If yes how long after induction of spinal

Conversion to GA (YES / NO).....

Part V :Morning after the operation

1.How do you view the spinal anaesthetic? Satisfactory

unsatisfactory

2.Would you want to have spinal anaesthesia in the next operations? Yes

no

3.Do you have any other concerns regarding the spinal anaesthesia?.....

Appendix 4

GWARO REMIBVUNZO MAERERANO NEKUTYA KUNOITIKA OPARESHENI ISATI YAITWA

Zuva ramakapinda: .../... /

Nhamba dzechitupa:

Chikamu I: Zviri maererano nemurwere

Makore ekuberekwa

Danho redzidzo:.....

ASA Grade :

Zvichaitwa:

.....

Basa ramunoshanda:

Makaroorwa/makaroorwa here:

Chikamu II: Ongororo yekutya (kushandiswa kweuwandu hwekutya neruzivo zvakawanikwa kuAmsterdam maererano nezvinoitika oparesheni isati yaitwa)

1. Ndiri kushushikana maererano nemushonga wekudzivirira marwadzo

Ndinobvuma chose Ndinobvuma Ndiri pakati nepakati Handibvumi Handibvumi zvachose

2. Mushonga wekudzivirira marwadzo uri kuramba uri mupfungwa dzangu nguva dzose

Ndinobvuma chose Ndinobvuma Ndiri pakati nepakati Handibvumi Handibvumi
zvachose

3. Ndinoda kuziva zvose zvinokwanisika maererano nemushonga wekudzivirira marwadzo

Ndinobvuma chose
zvachose

Ndinobvuma

Ndiri pakati nepakati

Handibvumi

Handibvumi

4. Ndiri kushushikana maererano nezvichaitwa

Ndinobvuma chose
zvachose

Ndinobvuma

Ndiri pakati nepakati

Handibvumi

Handibvumi

5. Zvichaitwa zviri kuramba zviri mupfungwa dzangu nguva dzose

Ndinobvuma chose
zvachose

Ndinobvuma

Ndiri pakati nepakati

Handibvumi

Handibvumi

6. Ndinoda kuziva zvose zvinokwanisika maererano nezvichaitwa

Ndinobvuma chose
zvachose

Ndinobvuma

Ndiri pakati nepakati

Handibvumi

Handibvumi

Muhwerengedzwa wezvibodzwa:

Chikamu III: Mangwanani emusi wekuitwa kweopareseni

1. Ndiri kushushikana maererano nemushonga wekudzivirira marwadzo

Ndinobvuma chose
zvachose

Ndinobvuma

Ndiri pakati nepakati

Handibvumi

Handibvumi

2. Mushonga wekudzivirira marwadzo uri kuramba uri mupfungwa dzangu nguva dzose

Ndinobvuma chose Ndinobvuma Ndiri pakati nepakati Handibvumi Handibvumi
zvachose

3. Ndinoda kuziva zvose zvinokwanisika maererano nemushonga wekudzivirira marwadzo.

Ndinobvuma chose Ndinobvuma Ndiri pakati nepakati Handibvumi Handibvumi
zvachose

4. Ndiri kushushikana maererano nezvichaitwa.

Ndinobvuma chose Ndinobvuma Ndiri pakati nepakati Handibvumi Handibvumi
zvachose

5. Zvichaitwa zviri kuramba zviri mupfungwa dzangu nguva dzose

Ndinobvuma chose Ndinobvuma Ndiri pakati nepakati Handibvumi Handibvumi
zvachose

6. Ndinoda kuziva zvose zvinokwanisika maererano nezvichaitwa

Ndinobvuma chose Ndinobvuma Ndiri pakati nepakati Handibvumi Handibvumi
zvachose

Muhwerengedzwa wezvibodzwa:

Chikamu IV: Kugadzikana kwemurwere panguva yekupiwa mushonga wekudzivirira marwadzo unoiswa nepamusana

Hapana kusagadzikana

Zvinokonzera kusagadzikana asi ndinoda kuenderera mberi kana ndikapiwa mushonga wekudzivirira marwadzo unoiswa nepamusana

Zvinokonzera kusagadzikana uye ndinoda kupiwa mushonga wekudzivirira marwadzo pamuviri wese (kukotsiriswa)

Muri kunzwa kurwadziwa here? Hongu kwete

Kana mhinduro iri hongu, marwadziwa kwenguva yakadii kubva paiswa mushonga wekudzivirira marwadzo unoiswa nepamusana.....

Makakotsiriswa? (HONGU / KWETE).....

Chikamu V: Mangwanani ezuva rinotevera kuitwa kweopareseni

1. Munooni sei mushonga wekudzivirira marwadzo unoiswa nepamusana? Wakanaka
hauna kunaka

2. Mungada kupiwa mushonga unodzivirira marwadzo unoiswa nepamusana paopareseni yamuchaitwa panguva inotevera here? Hongu kwete

2. Mune zvimwe zvinokunetsai maererano nemushonga wekudzivirira marwadzo unoiswa nepamusana here?.....

Appendix 5

YOUR SPINAL ANAESTHETIC



Adapted from NYSORA

PLEASE READ CAREFULLY THIS BOOKLET.

When having an operation, you can either receive a general anaesthetic (be put to sleep) or you receive a regional anaesthetic where an area of the body is numbed and you remain fully awake with no pain.

A spinal anaesthetic is a type of regional anaesthetic used to give numbness to the parts of the body below the waist lasting about 3 hours so that the operation can be safely carried out. Depending on the type of operation and your own medical condition, a spinal anaesthetic may sometimes be safer for you and suit you better than a general anaesthetic.

What is a spinal anaesthetic?

A drug is injected through a needle into your back to provide numbness from the waist down to the toes for 2 to 3 hours.

How is a spinal performed?

Your anaesthetist will discuss the procedure with you beforehand on the ward.

You will be asked a set of questions in order to determine whether a spinal anaesthetic is suitable for you.

When you get to the operating room a cannula(a thin plastic tube) is inserted into a vein in your hand or arm for fluids and drugs. Your blood pressure, amount of oxygen in your blood and your heart's function will be monitored.

You will be asked to sit on the side of the bed with your feet on a low stool



Adapted from NYSORA

or lie on your side curled up with your knees tucked up towards your chest.



adapted from NYSORA

The anaesthetist will explain what is happening throughout the process so that you are aware of what is taking place behind your back.

Your anaesthetist will give you the spinal injection and stay with you throughout the operation.



Adapted from NYSORA

As the drug begins to take effect, your anaesthetist will measure its progress and test its effectiveness using an ice pack.

What will you feel?

Usually a spinal should not cause unpleasant feelings and should take only a few minutes to perform. As you are being injected you may feel pins and needles or a sharp tingle in one of your legs. If you do, try to remain still and tell your anaesthetist about it.

After the injection you will be asked to lie flat. It is usually effective within 5 to 10 minutes. The skin feels numb to touch and the legs may be weak. When the injection is working fully you may be unable to move your legs and you will not feel any pain from the umbilicus downwards. During the operation you may be given oxygen to breathe using a face mask to improve oxygen levels in your blood. With a spinal anaesthetic you can communicate with the anaesthetist and surgeon before, during and after the operation.

You may still need a general anaesthetic if

- Your anaesthetist cannot perform the spinal satisfactorily
- The spinal anaesthetic does not work well
- Surgery is more complicated than expected

Why have a spinal anaesthetic?

Some of the advantages include :

- Less risk of chest infection after surgery
- Less effect on the heart and lungs
- Good pain relief immediately after surgery
- Less need for strong pain relieving drugs
- Less nausea and vomiting
- Earlier return to drinking and eating after surgery

What are the common side effects?

As with all anaesthetic procedures there is a possibility of unwanted side effects. The common side effects may be unpleasant but can be treated and do not usually last long, such as :

- ❖ Low blood pressure – it is controlled by fluids and or drugs to raise blood pressure
- ❖ Itching – this is cured by drugs
- ❖ Difficulty passing urine – bladder function returns to normal after the spinal wears off. You may temporarily require a urinary catheter.
- ❖ Pain during the injection
- ❖ Headache – it could be due to the drugs , dehydration or anxiety. Most headaches get better within a few hours and can be treated with pain relieving drugs.

What are the uncommon side effects?

Nerve damage – temporary loss of sensation , pins and needles and sometimes muscle weakness may last for a few days or even weeks but almost all of these make a full recovery in time.

Permanent damage is very rare and has about the same chance of occurring as major complications of a general anaesthetic.

What happens after the operation?

It takes 2 to 4 hours for sensation (feeling) to return to the areas of your body that feel numb. You should tell the ward staff about any concerns or worries you may have. As the feeling returns you may feel some pain from the operation site and you should ask for more pain relief before the pain becomes worse. As the spinal anaesthetic wears off, please ask for help when you first get out of bed.

Which are the frequently asked questions ?

- ❖ Can I eat or drink before my spinal?

You will need to have an empty stomach before your operation. This is because it is occasionally necessary to change from a spinal anaesthetic to a general anaesthetic.

- ❖ Will I see what is happening to me?

A screen is placed across the upper chest so you will not see the operation.

- ❖ Do I have a choice of anaesthetic?

Yes. Your anaesthetist will assess your overall preferences and needs for the operation and discuss with you. If you have problems regarding the spinal anaesthetic then these will be answered during your discussions.

- ❖ Will I feel anything during the operation?

You will be tested several times to make sure the spinal anaesthetic is working and you do not feel pain. You may be aware of other feelings such as movement or pressure as the operating team carries out their work.

- ❖ Should I tell the anaesthetist anything during the operation?

Yes. Your anaesthetist will want to know about any feelings you experience during the operation. They will make adjustments to your care throughout the operation and be able to explain things to you.

WE HOPE YOUR OPERATION WILL BE SUCCESSFUL

appendix 6

MUSHONGA WEKUDZIVIRIRA MARWADZO UNOISWA NEPAMUSANA



Adapted from NYSORA

NYATSOVERENGAI GWARO RINO

Pakuitwa opareshe ni munogona kupiwa mushonga unodzivirira marwadzo pamuviri wese (wekukotsirisa) kana kuti kupiwa mushonga wekudzivirira marwadzo panzvimbo yemuviri panoda kuitwa opareshe ni – panzvimbo apa panoitiswa chiveve uye munoramba makasvinura asi musinganzwi kurwadziwa.

Mushonga wekudzivirira marwadzo unoiswa nepamusana imhando yemushonga wekudzivirira marwadzo panzvimbo inoda kuitwa opareshe ni unoshandiswa kuitisa chiveve panhengo dzemuviri dziri pazasi pechiuno kwemaawa matatu. Izvi zvinoitirwa kuti opareshe ni iitwe zvakachengeteka. Zvichienderana nemhando yeopareshe ni uye nemamiriro eutano hwenyu, mushonga wekudzivirira marwadzo unoiswa nepamusana unogona kunge wakakunakirai uye wakakodzera kushandiswa pamuri kupfuura mushonga wekukotsirisa.

Chii chinonzi mushonga wekudzivirira marwadzo unoiswa nepamusana?

Uyu mushonga unoiswa nepamusana wenyu kuburikidza nejekiseni kuitira kuti nhengo dzemuviri kubva muchiuno kusvika kutsoka dzibatwe nechiveve kwenguva yemaawa maviri kusvika matatu.

Mushonga wekudzivirira marwadzo unoiswa nepamusana unoiswa sei?

Chiremba wemushonga wekudzivirira marwadzo achakurukura nemi maererano nezvichaitwa muchiri muwadhi, musati mapiwa mushonga uyu. Muchabvunzwa mibvunzo nechinangwa chekuona kuti mushonga wekudzivirira marwadzo unoiswa nepamusana wakakodzera pamuri here.

Pamunopinda muimba inoitirwa opareshe ni, kachubhu katetetete kepurasitiki kanoiswa mutsinga yeruoko rwenyu kuitira kuisa mvura dzinodikanwa nemishonga. Bhiipii yenyu, uwandu hweokisijeni iri muropa renyu nekushanda kwemoyo wenyu zvichaongororwa.

Muchakumbirwa kugara necheaparutivi rwemubhedha tsoka dzenyu dziri pachituro chakaderera



Adapted from NYSORA

kana kuti kurara makagonya, mabvi enyu akakwirira zvekuda kusvika pachipfuva.



Adapted from NYSORA

Chiremba wemushonga unodzivirira marwadzo achakutsanangurirai zvinoitika muurongwa hwose kuitira kuti muzive zvinenge zvichiitika kumusana kwenyu. Chiremba wenyu wemushonga wekudzivirira marwadzo achakubayai jekiseni repamusana uye achange anemi panguva yose yeoparesheni.



Adapted from NYSORA

Mushonga paunotanga kushanda, chiremba wenyu wemushonga wekudzivirira marwadzo achaongorora kushanda kwemushonga achishandisa chigodo chechando.

Chii chamuchanzwa?

Nguva zhinji kuiswa kwemushonga wekudzivirira marwadzo unoiswa nepamusana hakufaniri kukonzera kusagadzikana uye kunotoro maminiti mashoma.

Pakubaiwa jekiseni munogona kunzwa chiveve pane rimwe remakumbo enyu.

Kana izvi zvikaitika, rambai makadzikama uye zivisai chiremba wemushonga wekudzivirira marwadzo nezvazvo.

Mushure mekubaiwa jekiseni muchakumbirwa kuti murare makazvambarara. Mushonga unowanzoshanda mukati menguva yemaminiti ari pakati pemashanu negumi. Munenge muine chiveve uye makumbo anogona kupera simba. Kana jekiseni rava kunyatsoshanda munogona kutadza kufambisa makumbo enyu uye hamunzwi kurwadziwa kubva paguvhu zvichidzika. Panguva yekuitwa kweoparesheni munogona kunzi mufeme okisijeni kuburikidza nechivharakumeso kuitira kuvandudza uwandu hweokisijeni muropa renyu. Kana mukapiwa mushonga wekudzivirira marwadzo unoiswa nepamusana, munogona kuita hurukuro nachiremba wemushonga wekudzivirira marwadzo kana nachiremba wekuvhiya oparesheni isati yaitwa, panguva yekuitwa kweoparesheni uye mushure mekunge oparesheni yaperera.

Munogona kunge muchifanira kupiwa mushonga wekudzivirira marwadzo pamuviri wese kana

- Chiremba wenyu wemushonga yekudzivirira marwadzo asingakwanisi kuisa mushonga nepamusana zvakanaka
- Mushonga wekudzivirira marwadzo unoiswa nepamusana usinganyatsoshanda
- Oparesheni yakaoma kudarika zvanga zvichitarisirwa

Nemhaka yei muchipiwa mushonga wekudzivirira marwadzo unoiswa nepamusana?

Zvimwe zvezvakanakira mushonga uyu zvinosanganisira kuti:

- Pane njodzi diki yekutakupirwa neutachiwana muchipfuva mushure mekuitwa oparesheni
- Haunyanyokanganisa moyo nemapapu
- Unodzivirira marwadzo zvakanyanya uye chiriporipocho mushure mekuitwa kweoparesheni
- Hapana chikonzero chekuzoshandisa mishonga yakasimba yekunyaradza marwadzo
- Matambudziko ekuda kurutsa neekurutsa anoderera
- Unokasira kunwa nekudya mushure mekuitwa kweoparesheni

Ndezvipi zvakaipa zvinowanzoitika zvinokonzerwa nemushonga wekudzivirira marwadzo unoiswa nepamusana?

Sezvinongoitika pakushandiswa kwemishonga yose yekudzivirira marwadzo, pane mukana wekuitika kwezvakaipa zvinokonzerwa nemushonga. Zvakaipa zvinonyanyokonzerwa nemishonga zvinogona kukonzera kusagadzikana asi zvinorapika uye hazviwanzoramba zviripo kwenguva refu. Zvakaipa izvi zvinosanganisira:

- ❖ Bhiipii yakaderera – inodzikamiswa nemvura kana kuti mishonga inokwidza bhiipii
- ❖ Kusosona – kunorapwa nemishonga
- ❖ Kunetseka pakuita weti – dundira rinoshanda zvakanaka kana mushonga wekudzivirira marwadzo unoiswa nepamusana wopera. Munogona kunzi mumboshandisa kachubhu katete kanoburitsa weti mumuviri
- ❖ Marwadzo pamunenge muchibaiwa jekiseni
- ❖ Kutemwa nemusoro – kunogona kukonzera nemishonga, kupera kwemvura mumuviri kana kuti kutya. Kutema kwemusoro kuzhinji kunoita zviru nane mushure memaawa mashoma uye kunogona kurapwa nemishonga yekunyaradza marwadzo.

Ndezvipi zvakaipa zvisingawanzoitika zvinokonzerwa nemushonga wekudzivirira marwadzo unoiswa nepamusana?

Kukuvadza kwetsinga – kusanzwa zvaunogunzva, chiveve uye dzimwe nguva kurwadza kwenyama kunoitika kwemazuva mashoma kana kuti masvondo mashoma. Zvisinei, zvose izvi zvinopera munguva inotarisirwa.

Kukuvara zvachose kunoitika nenguva dziri kure chose uye mukana wekukuvara uku wakaenzana neuri pakushandisa mishonga yekudzivirira marwadzo mumuviri wese.

Chii chinoitika mushure mekuitwa kweopareseni?

Zvinotora nguva iri pakati pemaawa maviri kusvika mana kuti chiveve chipere munhengo dzemuviri. Munofanira kutaurira vashandi vemuwadhi maererano nezvichemo kana kushushikana kwamungadaro munako. Chiveve pachinenge chichipera munotanga kunzwa kurwadza panzvimbo inenge yaitwa opareseni uye munofanira kukumbira mishonga inonyaradza marwadzo marwadzo asati anyanya. Kana mushonga wekudzivirira marwadzo wava kupera, kumbirai rubatsiro pamunobva pamubhedha kekutanga.

Ndeipi mibvunzo inowanzobvunzwa?

- ❖ Ndinogona kudya kana kunwa ndisati ndapiwa mushonga wekudzivirira marwadzo unoiswa nepamusana here?

Hamufaniri kuva nechikafu mudumbu panguva yamunoiwa opareseni. Izvi zvinoitwa nokuti nenguva dziri kure zvinogona kuva zvakakodzera kuti mubve

pakushandisa mushonga wekudzivirira marwadzo unoiswa nepamusana kuenda pakushandisa mushonga wekukotsirisa.

❖ Ndichaona zvinenge zvichiitika pandiri here?

Nechekumusoro kwechipfuva kuchaiswa chinovharidzira kuitira kuti musaona kuitwa kweopareshehi.

❖ Ndinogona kuita sarudzo yemushonga wekudzivirira marwadzo here?

Hongu. Chiremba wenyu wemishonga yekudzivirira marwadzo achaongorora sarudzo dzenyu nezvamunoda pakuitwa kweopareshehi obva okurukura nemi. Kana mune matambudziko maererano nemushonga wekudzivirira marwadzo unoiswa nepamusana, muchapiwa mhinduro pamunoita hurukuro.

❖ Pane chandinonzwa here panguva yekuitwa kweopareshehi?

Muchaongororwa kakawanda kuitira kuva nechokwadi chekuti mushonga wekudzivirira marwadzo unoiswa nepamusana uri kushanda zvakanaka uye kuti hamusi kunzwa kurwadziwa. Munogona kunzwa zvimwe zvezvinenge zvichiitwa nechikwata chevanoita opareshehi zvakaita sekufamba nekutsimbirirwa.

❖ Ndinogona kutaurira chiremba wemishonga yekudzivirira marwadzo chero chinhu chipi zvacho here panguva yeopareshehi?

Hongu. Chiremba wenyu wemishonga inodzivirira marwadzo achada kuziva maererano nezvamunenge muchinzwa chero zvipi zvazvo panguva yekuitwa kweopareshehi. Vachagadziridza rubatsiro rwavanenge vachikupai panguva yose yekuitwa kweopareshehi uye vachakwanisawo kukutsanangurirai zvimwe zvinhu.

TINOVIMBA OPARESHENI YENYU ICHABUDIRIRA

