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Patients' perspective of shared decision making at childbirth and association with outcomes in maternity units in Kisumu County, Kenya.

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PATIENTS' PERSPECTIVE OF SHARED DECISION MAKING AT CHILDBIRTH AND ASSOCIATION WITH OUTCOMES IN MATERNITY UNITS IN KISUMU COUNTY, KENYA

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DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the dissertation contains no material previously published or written by another person except where due reference is made in the dissertation itself.

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ABSTRACT

Healthcare systems are geared towards allowing for accessible, quality healthcare while allowing for financial risk protection. Clinician decision making process is one of the determinants of quality of healthcare services offered. Shared decision making process has been associated with improved clinical outcomes. Shared decision making process has three components; clinician expertise, biological and psychological, and patient's goals and preferences. Whereas the factors affecting the clinician's decision making process around childbirth are well studied, few studies have been conducted to assess patient perceptions of the decision making process and any associations that may exist with patient characteristics and outcomes of the patient's care at childbirth. The few studies addressing these aspects are invariably limited to high income countries. Although there are a number of tools used to assess the shared decision making process, the SDM-Q-9 tool has been associated with high validity and high reliability. The study design was a cross-sectional descriptive study using a self- administered validated tool, SDM-Q-9 tool. The study population consisted of patients discharged after seeking childbirth services from public level 4 hospitals in Kisumu county. A total of 381 patients were sampled. The data collected was analysed using SPSS version 29.0. The mean patient age of the study population was 25.39 years, most respondents had completed their secondary education and the overall level of satisfaction with shared decision making was 91.3%. There was statistically significant correlation between the perception of information sharing, deliberation and decision making with perception of shared decision making. Patients between the ages of 31-35 had the lowest positive response rates across all three aspects of shared decision making, while patients who did not complete their primary education also reported the lowest positive response rates. Patients who had positive responses on overall perception of shared decision making reported lower self-reported rates of complications during childbirth. Our study recommends increased awareness among healthcare workers on shared decision making, with deliberate effort to improve information sharing, deliberation and patient involvement during childbirth, more so with patients between the ages of 31-35 and patients with lower levels of education.

ABBREVIATIONS

CDM- Clinician decision making process

GCP- Good Clinical Practice Certification

HPRR- Highly Positive Response Rate

JOOTRH- Jaramogi Oginga Odinga Teaching and Referral Hospital

KDHS- Kenya Demographic and Health Survey

KNBS- Kenya National Bureau of Statistics

KPHC- Kenya Population and Housing Census

LMIC- Low and Middle Income Countries

MMR- Maternal Mortality Rate

NACOSTI- National Commission for Science, Technology & Innovation

NICE- National Institute for Health and Care Excellence

NIH- National Institute of Health

PRR- Positive Response Rate

SDM- Shared Decision Making

SDM-Q- Shared Decision Making Questionnaire

SU-IERC - Strathmore University Institutional Ethical Review Committee

WHO- World Health Organisation

Table of Contents

DECLARATION 1
ABSTRACT 2
ABBREVIATIONS 3
LIST OF TABLES 7
LIST OF FIGURES 8
KEY WORDS 9
CHAPTER 1: INTRODUCTION 10
1.1 Background 10
1.1.1Clinician Decision Making 10
1.1.2 Clinician Decision Making at Childbirth. 11
1.1.3 Assessment of patients' perception of shared decision making 12
1.1.4 Measurement of Outcomes in Maternity Units in Kisumu County 12
1.2 Statement of the problem 13
1.3 Research objective 15
1.4.1 Specific Objectives 15
1.4 Research questions 15
1.5 Scope of the study 16
1.6 Significance of the study 16
CHAPTER TWO: LITERATURE REVIEW 17
2.1 Introduction 17
2.2 Theoretical review 17
2.2.1 Quality of Healthcare and role of clinical decision making 17
2.2.2 Models of Clinical Decision Making Process 18
2.2.3 Models of Shared Decision Making 19
2.2.4 SDM-Q-9 Questionnaire. 22
2.2.5 Outcomes of Care in Maternity Units 23
2.2.6 Overview of Maternity Care in Kisumu County 23
2.3 Empirical review 24
2.3.1 Clinician Decision Making 24
2.3.2 Three aspects of SDM 25
2.3.3 Patient's Perspective on Shared Decision Making in Childbirth 27
2.3.4 Shared Decision Making and Patient Characteristics 27

2.3.5 SDM and outcomes in childbirth 28
2.3.6 SDM-Q-9 Tool 29
2.3.7 Outcome of care in childbirth 30
2.4 Conceptual Framework 31
2.4.1 Operationalisation of variables 31
CHAPTER THREE: RESEARCH METHODOLOGY 33
3.1 Research Philosophy 33
3.2 Research Design 33
3.2.1 Study Population 33
3.2.2 Sampling Technique 34
3.2.3 Data Collection Methods 35
3.2.4 Inclusion Criteria 36
3.2.5 Exclusion Criteria 36
3.2.6 Data Management and Statistical Analysis 36
3.2.7 Measures of Validity and Reliability 37
3.3 Ethical Considerations 38
CHAPTER FOUR: RESEARCH FINDINGS AND DATA ANALYSIS 39
4.1 Introduction 39
4.2. General descriptive results 39
4.3 Findings on the patients' perspective on SDM in the maternity units. 41
4.4 Association between patient characteristics and SDM. 45
4.4.1 Association between age and SDM 45
4.4.2 Level of education and SDM 47
4.5 Association between perception of SDM and outcomes of care 49
CHAPTER 5: DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS 51
5.1 Introduction 51
5.2 Summary of findings 51
5.3 Discussion of findings 52
5.3.1 Descriptive Findings 52
5.3.2. Patients' perspective of shared decision making 53
5.3.3 Association between patient characteristics and SDM 54
5.3.4 Association between perception of SDM and outcomes of care during childbirth 56
5.4 Study Limitations 56

5.4 Conclusions 57
5.5 Recommendations 57
References 58
APPENDICES 66
Appendix 1A- Participant Consent Form- English 66
Appendix 1B: Participant's Consent Form- Swahili translation 69
Appendix 1C: Participant Consent Form- Dholuo translation 72
Appendix 2: Data Collection Tool- English 74
Appendix 2B: Data Collection Tool- Swahili Translation 78
Appendix 2C: Data Collection Tool- Dholuo translation 82
Appendix 3: Institutional Ethical Research Committee Approval 86
Appendix 4: National Council for Science, Technology and Innovation Approval 87
Appendix 5: Authorisation by the Department of Health, County Government of Kisumu 88

LIST OF TABLES

Table 2.1 Operationalisation of variables _____31

Table 3.1 Sample population per facility level_____ 35

Table 4.1: Age distribution _____39

Table 4.2 Descriptive statistics of age _____39

Table 4.3 Frequency using level of education_____41

Table 4.4: Descriptive analysis of age of study participants_____ 41

Table 4.5: Overall satisfaction with SDM process_____42

Table 4.6: Frequency of respondents on perception of information sharing_____42

Table 4.7 Descriptive statistics of respondents' perception of information sharing____42

Table 4.8: Correlation between information sharing and satisfaction with SDM _____43

Table 4.9: Confidence intervals for information sharing_____43

Table 4.10: Frequencies of respondents' satisfaction with deliberations_____44

Table 4.11: Descriptive analysis of responses on deliberations_____44

Table 4.12: Correlation between deliberations and satisfaction with SDM_____42

Table 4.13 Frequencies of respondents' satisfaction with decision making_____45

Table 4.14: Correlation between decision making and satisfaction with SDM_____45

Table 4.15 Patients' overall perception of SDM using age brackets_____46

Table 4.16: Analysis of PRR and HPRR on three aspects of SDM_____46

Table 4.17: Correlation between age and overall perception of SDM_____47

Table 4.18: Patients Positive response rates across different levels of education _____47

Table 4.19: Mean score of perception of decision making for different levels of education _____48

Table 4.20: Correlation between level of education and SDM_____49

Table 4.21: Frequency of self-reported complications_____49

Table 4.22: Analysis of overall perception of SDM and complications_____50

Table 4.23: Correlation between satisfaction with SDM and occurrence of complications_____50

LIST OF FIGURES

Figure **Page**

Figure 2.1. Components of decision making process_____18

Figure 2.2. Charles' Model on Shared Decision Making_____20

Figure 2.3. Conceptual Framework_____31

KEY WORDS

Clinical decision making involves the judicious use of evidence, taking into account both clinical expertise and the needs and wishes of individual patients in the process of making a decision regarding the clinical care of the patient.

Clinician decision making process is the whole process taking place around clinical decision making and encompasses three components; information sharing, decision making and assessment of the outcomes.

Maternal health outcomes refer to the health outcomes of pregnant women and their babies

Shared decision making process is a process in which both the patient and physician contribute to the medical decision-making process and agree on treatment decisions

CHAPTER 1: INTRODUCTION

1.1 Background

This chapter introduces the concept of clinician decision making, and particularly shared decision making at childbirth, the assessment of patients' perception of their involvement in the decision making process and measurable outcomes of care during childbirth. In addition to this, the Statement of the problem, Research Questions and Research objectives are formulated.

1.1.1Clinician Decision Making

Globally healthcare systems are intended to allow for the achievement of access to quality health services without resulting in financial hardship (World Health Organisation, 2018). One of the factors known to impact on the quality of the healthcare services offered is the clinician decision making process (Hughes, Merath, & Chen, 2018). Several studies have shown that clinician decision making style has an impact on patient outcomes (Attanasio & Kozhymannil, 2018) (Murray, Pollack , & White , 2007) (Zondag, van Haaren-Ten Haken, & Offerhaus, 2022).

There are three generally accepted styles of clinician decision making. The three models are described as paternalistic, consumerist and shared decision making styles (Cribb & Entwhistle, 2011). In a paternalistic model, the clinicians make a decision based on what they believe to be the best options for the patient, while in the other extreme in the consumeristic model, the patient makes the decision and the clinical team managing him supports the decision (Murray, Pollack , & White , 2007) . Shared decision making is the third style of clinician decision making that is considered a collaborative process between a person and their healthcare professional working together to reach a joint decision about care (NICE , 2021).

Shared decision making (SDM) is a process in which the clinician inputs the perspectives and opinion of the patient when making a clinical decision. SDM has been advocated in many health systems, with several studies showing improved patient outcomes (Weiner, Schwartz, & Sharma, 2013). Some studies indicate that patients have a right to be involved in decisions concerning their health and well-being, stating that increased involvement by

patients in their health care can lead to improved adherence to management plans and improved health outcomes (Weiner, Schwartz, & Sharma, 2013) with others indicating that the patients' perception of their physician communication behaviour led to better adherence to treatment protocols (Wachira & Middlestadt, 2014).

However, several other studies have indicated that some patients do not want to be fully involved in decision making, with a study indicating that up to 52% of respondents preferred to leave the final decision to their physicians (Levinson, Kao, & Kuby, 2005). There are also studies showing mixed results regarding shared decision making (Megregian, Emeis, & Nieuwenhuijze, 2020). Different populations have different preferences on their clinician's decision making style (Attanasio & Kozhymannil, 2018).

It would be important to understand whether patient characteristics in maternity units in Kisumu county affect the patients' perspective of shared decision and if there is any correlation between the shared decision making and clinical outcomes in maternity care.

The Shared Decision Making Questionnaire (SDM-Q-9) is a 9-item measure of the decisional process in medical encounters from both patients' and physicians' perspectives. It has good acceptance, feasibility, and reliability (Rencz, Tamasi, & Brodsky, 2019).

1.1.2 Clinician Decision Making at Childbirth.

The appropriate use of interventions in childbirth has attracted considerable attention worldwide (Zondag, van Haaren-Ten Haken, & Offerhaus, 2022). The interventions used are either for augmentation of labour, assistance of vaginal delivery or alternative delivery modality via caesarean section.

Several studies have been directed on the factors influencing the clinician's decision making process when considering options for intervention at childbirth (Zondag, van Haaren-Ten Haken, & Offerhaus, 2022), (Murray, Pollack , & White , 2007). These factors include the clinician's level of knowledge and skills, proximity to and capacity to access a referral health facility and support from more experienced or skilled personnel (Zondag, van Haaren-Ten Haken, & Offerhaus, 2022), (Daemers, van Limbeek, &

Wijnen, 2017). Furthermore, the correlation between the clinician's decision making process and outcomes of childbirth is well studied (Moore, 2016).

Recently, there is a shifting focus on the need to include the patient in the decision making process. The change towards shared decision making process, with the patient having a role in clinical decisions has been gradual over the last three decades (Elwyn & Frosch, 2012). Several authors have shown improved patient outcomes in centres that have higher shared decision making; reporting improved outcomes at childbirth including lower MMR and perinatal complications (Moore, 2016).

Even so, certain patient categories do not wish to be part of the decision making process, preferring a more paternalistic approach, with the clinician making all the clinical decisions (Levinson, Kao, & Kuby, 2005).

1.1.3 Assessment of patients' perception of shared decision making

One of the measurable ways of assessing patient involvement in the clinical decision making process is by assessing the patient's perception of the process after the event (Deherder & Ilse, 2022).

The degree of patient involvement in the clinician decision making process can be assessed using several established tools. The SDM- Q-9 tool is one of the most frequently applied instruments for assessing patients' involvement in medical decision-making. SDM-Q-9 is accepted for its validity and reliability in the assessment of the shared decision making by patients (Rencz, Tamasi, & Brodsky, 2019), (Kriston & Scholl, 2010).

1.1.4 Measurement of Outcomes in Maternity Units in Kisumu County

Kisumu County is approximated to have a population of 1,155,574 (KNBS, 2020) and an annual child birth of 187 per 1,000 of the population over the two years of 2021 -2022 (KNBS , 2023). The county reported improved maternal health outcomes, that include 94.4% of the childbirths having been conducted by skill clinical personnel (KNBS , 2023) this being an improvement from the 69.9% reported in 2014 (KNBS, 2015) and also higher than the national average of skilled birth attendance at 89% (KNBS , 2023).

Kisumu County currently has a maternal mortality rate (MMR) of 495 per 100,000 births (County Government of Kisumu, 2023) compared to the national MMR of 530 (World Bank, 2023) but which is still much higher than the global average of 223 (UNICEF, 2023). Kisumu county has 8 county hospitals and 22 sub county hospitals, giving a total of 30 Level 4 public hospitals from which the study population was enrolled.

The WHO proposes several parameters in the assessment of maternal and perinatal outcomes. This study will however confine itself to maternal outcome measures in the early period after delivery. The globally accepted early measures of the quality of maternity care include maternal death, stillbirth, neonatal death, maternal need for referral for advanced care, late maternal transfusion (within 42 days of delivery) and maternal infections after childbirth. The maternal related outcomes have been adapted into standardised outcome measures for assessing the quality of maternity care (Malini, Wissig, & Stowell, 2018).

Patient satisfaction with the services offered is considered a key measure of the quality of maternal health services (Sehngelia, Milena, & Groot, 2021), (Kebede, Belachew, & Selbana, 2020). A study conducted at the onset of devolution and initiation of free maternity services concluded that there was an overall client satisfaction of 54.5% with services in maternity units in public health facilities in Kenya (Gitobu, Gichangi, & Mwanda, 2018), while another study focused on client satisfaction with maternal & child health services in level 3 health facilities in Kisumu County (Ibworo, Omondi, & Guyah, 2020). This study shall propose to use patient satisfaction with the services in maternity units of Level 4 public hospital and analyse any associations with SDM.

1.2 Statement of the problem

Healthcare systems are geared towards addressing access, quality and financial risk protection of the patients. Several factors are globally accepted to directly affect the quality of healthcare services offered to patients. Clinician decision making process is known to directly affect the quality of healthcare and can be directly correlated with outcomes of clinical care generally and specifically during childbirth in maternity units.

The clinician decision making process and factors influencing clinician decision making process are well established with models indicating that the clinician decision making component has three components; clinical evidence and expertise, patient goal and preferences and the biological, sociological and psychological contexts of the decision being made. It is currently accepted that a shared decision making process that incorporates all three components has improved outcomes.

Although shared decision making has been associated with improved quality of healthcare and better outcomes of care, the component of patient goals and preferences has not been well studied, with most studies focusing on the clinician perspective and factors affecting the clinician's aspect of decision making. Few studies have been directed at studying the patient's perspective of their inclusion in the decision making process. Do patients perceive that they were included in the process? And is there any association between the patient's perception of inclusivity in the decision making process in the maternity unit and the outcomes of care during childbirth?

The few studies that are directed at studying the patient perspective and role in shared decision making are mainly in high income countries with much more developed healthcare systems than in our set-up. Even then, very few of them focused on SDM in childbirth or in maternity units. There are very few studies addressing the role of the patient in SDM in low and middle income countries.

The few studies addressing the clinician- patient association in Kenya are directed towards the clinician- patient communication and not the role of the patient in decision making, or any correlation they may have with outcomes in the maternity care setting. More so, our search of literature did not turn up any local or regional studies on the patient characteristics, their perceptions on degree of shared decision making or its association with outcomes in maternity units

It would be important to study if the patients' perception of the decision making process in maternity units has any association with patient characteristics and an association with outcomes of care in maternity units, especially in a local set-up.

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This study intends to study the patient's perception of their role in decision making at childbirth and any associations between the patient's involvement during clinician decision making and outcomes of care during childbirth. The study outcomes may help inform the adoption of a greater acceptance of shared decision making and a greater role of the patient in SDM around childbirth in Kenya and the region.

1.3 Research objective

To describe the patients' perspective on shared decision making styles and association between shared decision making and outcomes in the maternity units of public Level 4 hospitals in Kisumu County.

1.4.1 Specific Objectives

1) To describe the patients' perspective on shared decision making in the maternity units of Level 4 hospitals in Kisumu county
2) To assess patterns of association between patient characteristics with shared decision making in level 4 maternity units in Kisumu County.
3) To assess patterns of association between shared decision making with outcomes in the maternity units of Level 4 Hospitals in Kisumu county.

1.4 Research questions

1. What is the patient's perspective on shared decision making in level 4 maternity units in Kisumu County?
2. What are the patterns of association between patient characteristics and perspective of shared decision making in level 4 maternity units in Kisumu County?
3. What are the patterns of association between the patients' perspective of shared decision making and maternal health outcomes?

1.5 Scope of the study

This study reviewed the patients' perception of shared decision making in the maternity units of public Level 4 hospitals in Kisumu County using the commonly accepted SDM-Q- 9 tool. The study will then correlate the SDM with patient satisfaction with decision making, age and level of education, and outcomes of care in the maternity unit.

1.6 Significance of the study

This study reviewed the patients' perspective of clinician decision making at childbirth in public Level 4 hospitals in Kisumu county and correlate the clinician decision making with outcomes of childbirth. This is because the clinician decision making process, more so SDM, has been associated with outcomes of healthcare services in other studies. The theoretical scope of the study was the use of the SDM-Q-29 tool is assessing the clinician decision making process.

The study will form part of the body of literature available locally on the clinician decision making styles and patient perspectives of the clinician decision making process, while correlating the decision making style with outcomes of childbirth. The study results may form a basis for advising for and guiding greater incorporation of shared decision making processes around childbirth in our set-up. It would also advise greater incorporation of the role of the patient and the need to consider their goals and preferences around childbirth in the care offered in maternity units in Kenya. Thus the study results could impact both the policy and practice around decision making in childbirth in our set-up.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter starts off by offering a background on the quality of healthcare systems then proceeds to outline the concepts and understanding of clinician decision making. The literature review then outlines the forms of clinical decision making and the published literature that gives a correlation between clinician decision making and outcomes. The section then reviews the current emphasis on patient involvement in clinician decision making processes. The section also outlines the gap in published literature showing the paucity of literature directed towards the patient's role in clinical decision making, more so around decisions at childbirth in maternity units. The literature review section introduces the conceptual framework based on patient and physician factors, an empirical review of the literature available on the objectives and the gaps the study aims to address. The chapter then finally offers an outline on how the study variables was operationalised.

2.2 Theoretical review

This study aims to assess patients' perception of clinician decision making in maternity care and correlate the clinician decision making with outcomes in maternity care in public Level 4 hospitals in Kisumu County.

In our theoretical review of literature, we review the theories and components of clinical decision making, accepted models of shared decision making and the literature behind the SDM-Q-9 tool that the study chose to adopt.

2.2.1 Quality of Healthcare and role of clinical decision making

The end goal of all healthcare systems globally is to allow for better access to quality healthcare services while allowing for financial risk protection for the population served by the healthcare system (Tichenor & Sridhar, 2017). Several factors impact on the quality of the healthcare services offered to any population. These factors include; physical environment and infrastructure, commodities and supplies, expertise, physician-patient relationship as well as the leadership and governance of the system (Bellio & Bucoliero, 2021). The World Health Organisation (WHO) has grouped these major factors into the building blocks of a health system (World Health Organisation, 2007). Additionally,

several other factors have an impact on the quality of healthcare systems and their outcomes (Mosadeghrad, 2014). Clinical decision making and the process of clinician decision making directly correlates with several of the factors that affect the quality of healthcare services. These include expertise and the physician-patient relationship (Bellio & Bucoliero, 2021).

Clinician decision making process has been shown to have a direct impact on the outcomes of the healthcare services being offered as well as the patient perception of their role and satisfaction with the healthcare service offered (Arora & Weaver, 2009) (Deherder & Ilse, 2022) (Faiman & Tariman, 2019).

2.2.2 Models of Clinical Decision Making Process

Three components guide the process of decision making and evidence based decision making: clinical evidence and expertise brought about by the use of clinical skills, experience and practice, patient/ family goal and preferences and the biological, sociological and psychological contexts of the decision being made (Cincinnati Children's Organisation, 2022).

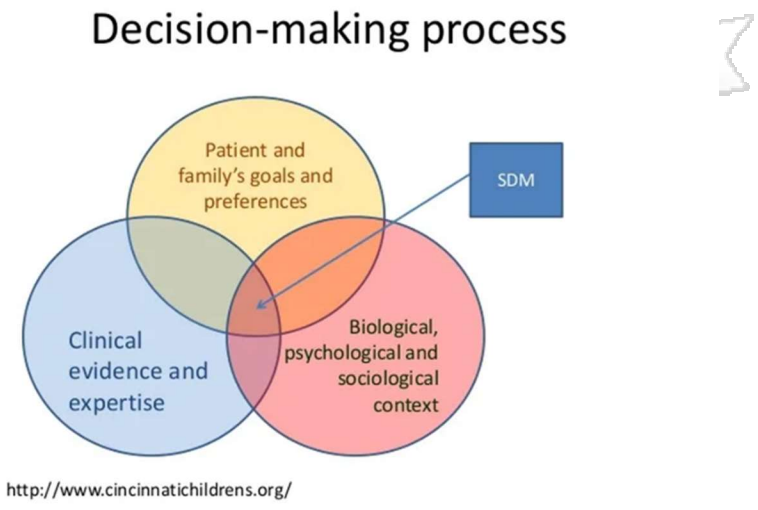

Figure 2.1: Components of decision making process

There are three globally accepted clinician decision making styles, widely guided by the degree of integration of the three components of clinical decision making: paternalistic, consumerism (informed) and shared decision making (Kuzman & Slade , 2022). Paternalistic decision making entails the clinician making all the clinical related decisions based on his/her training and skills and informing the patient of the need for an intervention (Resnicow, Catley, & Goggin, 2022). Consumerism (informed) decision making style entails sharing all available information with the patient then allowing the patient to make a decision, with little further guidance from the clinician (Matthew & Cohen, 2020). Shared decision making (SDM) is a process in which the clinician inputs the perspectives and opinion of the patient when making a clinical decision (NICE , 2021).

The factors that affect clinicians during the decision making process include the clinician's level of knowledge and skills, proximity to and capacity to access a referral health facility, sense of responsibility, awareness of time and urgency as well as support from more experienced or skilled personnel (Daemers, van Limbeek, & Wijnen, 2017). Furthermore, clinician decision making styles have been correlated with outcomes of varied healthcare services (Arora & Weaver, 2009), (Weiner, Schwartz, & Sharma, 2013).

These studies are however limited to high income countries with well-established healthcare systems.

2.2.3 Models of Shared Decision Making

Whereas several studies have identified and studied the clinician's decision making process, few studies have been directed at the impact of and perceptions of the clinician decision making process on the patient. Over the last three decades there has been a gradual shift towards more inclusive decision making process that factor in the patient's role in the process (Elwyn & Frosch, 2012). Currently, most healthcare systems accept shared decision making as the preferred decision making model (Légaré & Thompson-Leduc, 2014).

Although there is no universally accepted definition of SDM, most definitions acknowledge SDM to be a collaborative process between the clinician/ healthcare provider and the patient, at times involving his relatives as well, as full partners in

reaching a medical decision regarding the patient's healthcare (Resnicow, Catley, & Goggin, 2022).

SDM is considered to be the decision making process that elaborately considers all three components of clinical decision making (Cincinnati Children's Organisation, 2022). Without consideration of patient's goals and preferences the clinical decision making process may be skewed towards clinical evidence and expertise, which predominates the paternalistic decision making process, whereas consumerism will have the patient goals and preferences predominating.

Several models of SDM have been promoted over the last three decades, but most models retain the four aspects that were widely promoted by Charles et al in their 1997 publication. Charles and colleagues promoted their theory that SDM must involve four sequential aspects; (1) that both the physician and patient are involved; (2) that there is sharing of information among both parties; (3) that both parties take steps to build a consensus about the preferred treatment; and (4) that an agreement is reached between the clinician and the patient on the treatment to implement (Charles, Gafni, & Whelan, 1997).

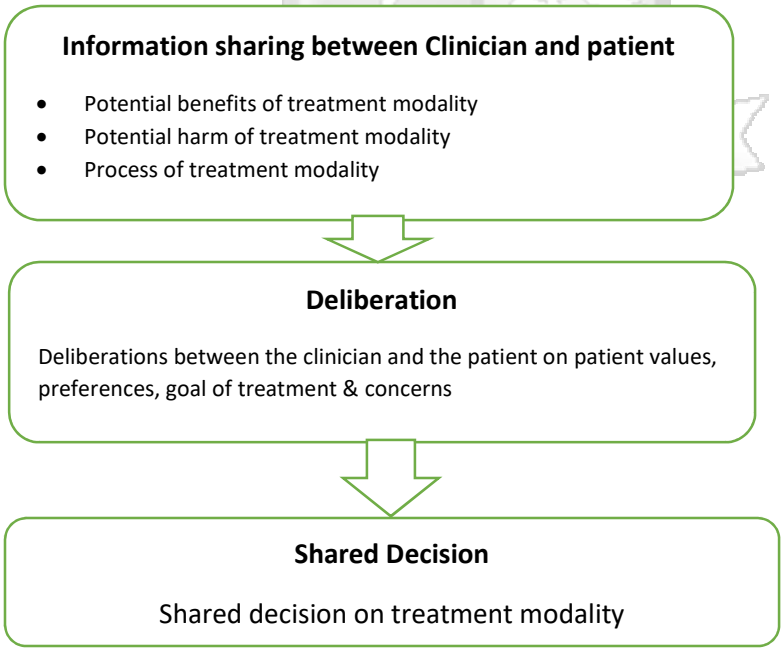

Figure 2.2 Charles' Model on Shared Decision Making:- adapted from Wiener et al; (Wiener, Koppelman, & Bolton, 2018)

The clinical decision making process is globally accepted to involve the three aspects of decision making; information and preferences, actual decision making and the outcomes of the decision making (Elwyn & Frosch, 2012) (Wiener, Koppelman, & Bolton, 2018) (Charles, Gafni, & Whelan, 1997)

During decision making, the clinician provides the patient, and if need be his family, with information on the proposed treatment modality, the pros and cons, possible outcomes and all available alternatives to the stated modality. After the information has been shared, both parties deliberate on the proposed goal of care, the patient's values and preferences and the patient's anticipated outcome. After deliberations, the patient and the clinician jointly arrive to an agreement on the proposed treatment modality and anticipated outcomes of care (Wiener, Koppelman, & Bolton, 2018). The three phases of SDM in Charles' model are thus the cornerstone of the SDM process, regardless of the speciality of the care under which the clinician and patient are undertaking the relationship.

There are several studies on the factors affecting the clinician's decision making process in maternity units (Sunita, Begley, & Daly, 2018) (Zondag, van Haaren-Ten Haken, & Offerhaus, 2022), but very few studies on the patients' role and perception of the decision making process in maternity care. The few studies in shared clinical decision making are confined to study populations in high income healthcare set-ups (Moore, 2016) (Megregian, Emeis, & Nieuwenhuijze, 2020) (Attanasio & Kozhymannil, 2018). These studies show improved outcomes following SDM in maternity care.

The extent of information sharing between the clinician and the patient has been shown to impact on the patient's ability or perception of their ability to be part of decision making (Peek & Odoms-Young, 2010) (Murugesu & Damman, 2021). Studies have also shown that the physician's communication style and skills do impact on the patient's ability to participate in decision making, whereby better physician communication skills have been associated with improved patient decision making (Deherder & Ilse, 2022) and better adherence to the proposed treatment regimen (Wachira & Middlestadt, 2014) (Zolnierek & Dimatteo, 2009). The involvement of the patient in the actually decision making at childbirth has also been associated with reduced decision conflicts and reduced decision regrets (Geurtzen & van den Heuvel, 2021).

2.2.4 SDM-Q-9 Questionnaire.

The Shared Decision Making Questionnaire (SDM-Q) questionnaire was developed by Simon et al in 2006 as a theory driven questionnaire to measure the process of SDM (Simon, Schorr, & Wirtz, 2006). The SDM-Q has since been revised from an 11 question tool to a 9 question tool, SDM-Q-9, which is considered to have high reliability and high acceptance across several specialties when studying SDM (Kriston & Scholl, 2010).

Many tools available that have been proposed to assess the decision making process are limited to assessing certain specific aspects of the decision making process (Spigel & Plough, 2022) (Brodney & Fowler Jr, 2019). The SDM questionnaire consolidates all three aspects of the decision making process within the nine questions allowing for a more comprehensive review of the SDM process. The questionnaire assesses each aspect of the SDM process sequentially and equally; information sharing, deliberations and decision making.

Several studies whose study tools were based or extracted from the SDM-Q-9 tool reported high validity and high reliability (Rencz, Tamasi, & Brodsky, 2019), (Deherder & Ilse, 2022) The tool has been used to assess interventions in different specialties of the medical field (Kriston & Scholl, 2010), (Peek & Odoms-Young, 2010), including in maternity care (Attanasio & Kozhymannil, 2018) with the studies showing high validity of the tool.

The SDM-9-Q tool is a self-reported questionnaire that has two open ended questions on the service accessed and the decision made thereafter followed with nine closed-ended questions (Rencz, Tamasi, & Brodsky, 2019). Each closed question interrogates an aspect of SDM and has the respondent scoring it on a six-point Likert score ranging from 0 (completely disagree) to 5 (completely agree). The higher the total score, the greater the consideration of perceived SDM.

2.2.5 Outcomes of Care in Maternity Units

The WHO and the Sustainable Development Goals (SDG) highlight the importance of maternal and neonatal health outcomes. A systemic review of literature found that there are 1445 indicators of maternal health outcomes (Saturno-Hernandez & Martinez-Nicholas, 2019).

Some of the outcomes of maternal care have been adopted by subsequent multicentre studies and systemic reviews on standardised outcome measures of pregnancy and childbirth (Malini, Wissig, & Stowell, 2018). These globally accepted early measures of the quality of maternity care include maternal death, stillbirth, neonatal death, maternal need for referral for advanced care, late maternal transfusion (within 42 days of delivery) and maternal infections after childbirth.

Patient satisfaction with the services offered is considered a key measure of the quality of maternal health services (Sehngelia, Milena, & Groot, 2021), (Kebede, Belachew, & Selbana, 2020). A study conducted at the onset of devolution and initiation of free maternity services concluded that there was an overall client satisfaction of 54.5% with services in maternity units in public health facilities in Kenya (Gitobu, Gichangi, & Mwanda, 2018). This study shall propose to use patient satisfaction with the services offered as an outcome of the services offered in the maternity units in the public hospitals within Kisumu County.

2.2.6 Overview of Maternity Care in Kisumu County

The population of Kisumu County was last estimated to be 1,155,574 (KNBS, 2020) and having an annual childbirth of 187 per 1000 of the population (KNBS , 2023). The county reported that 94.4% of the childbirths having been conducted by skilled personnel, of whom 87.5% were in health facilities (citation). Kisumu county reports a maternal mortality rate of 495 per 100,000 births (County Government of Kisumu, 2023) which is below the national estimate of 530 per 100,000 births (World Bank, 2023).

The public health sector in Kisumu has one (1) Level 5 Hospital, eight (8) County Hospitals, twenty-two (22) Sub county hospitals, making a total of 31 facilities of level 4

and above. These hospitals have dedicated maternity units that offer 24-hour maternity care.

There has been one study assessing client's satisfaction with maternal child health services in tier three hospitals in Kisumu county (Ibworo, Omondi, & Guyah, 2020) and one on client satisfaction survey in maternity units in Kenya (Gitobu, Gichangi, & Mwanda, 2018) but no published data on patients' perception of the decision making in maternity care in Kisumu county, correlation of the perceptions with patient characteristics or outcomes in the units.

2.3 Empirical review

2.3.1 Clinician Decision Making

Clinical decision making includes three aspects; sharing information and preferences, actual decision making and the outcomes of the decision making (Kuzman & Slade , 2022) (Elwyn & Frosch, 2012). Traditionally in clinical care, there have been three recognised ways of clinical decision making; paternalistic, informed and shared decision making processes (Cribb & Entwhistle, 2011). Paternalistic decision making is whereby the clinician makes the decision depending on available scientific knowledge and informs the patient of the decision (Murray, Pollack , & White , 2007). In informed/ consumeristic decision making, the clinician shares all the available knowledge and options of care available to the patient then allows the patient to make an independent decision. The third process is shared decision making, where the clinician and the patient jointly go through the three aspects of clinical decision making (Elwyn & Frosch, 2012).

This clinical decision making process leads to decisions on specific treatment plans and interventions that need to be undertaken in regard to the patient's care and do have an impact on the outcome of clinical care (Weiner, Schwartz, & Sharma, 2013).

Whereas the clinician and the patient are both parties to the decision making process, the factors affecting the clinician's decision making process have been more intensely studied. The factors that have been shown to influence the clinicians' decision making process include their knowledge base, supporting infrastructure, access to higher level of care, availability of senior cadres and referral capacity. (Viser, Deliens, & Houttekier1,

2014) (Zondag, van Haaren-Ten Haken, & Offerhaus, 2022) (Panda & Begley, 2018). These have been studied from different perspectives but there is consensus that the clinician's decision making process does have an impact on the outcome of care.

Over the last three decades, several authors have proposed that shared decision making process does result in better clinical outcomes (Faiman & Tariman, 2019) (Weiner, Schwartz, & Sharma, 2013)and reduces the rates of unnecessary interventions . Studies indicate that in childbirth and maternity care, the involvement of the patient in the decision making process results in fewer unnecessary interventions and better clinical outcomes (Arora & Weaver, 2009). And even when the outcomes of care are adverse, SDM leads to lower decision conflict and regrets in the patients.

This notwithstanding, there exists literature indicating that certain patient populations do not desire to be part of the decision making process and prefer the paternalistic decision making process (Levinson, Kao, & Kuby, 2005) (Benyamini, Molcho, & Gozlan, 2017). Some authors have reported that older patients, very young patients, less educated and patients from specific minority populations may prefer that the clinician attending to them makes all the decisions regarding their care (Benyamini, Molcho, & Gozlan, 2017).

But there also exists a body of literature that argues that these patient populations are actually disadvantaged and do not access the same level of information (Attanasio & Kozhymannil, 2018) (Ebert & Bellchambers, 2014), or feel that they are less likely to be involved in the decision making process (Coates, Goodfellow, & Sinclair, 2020) (Peek & Odoms-Young, 2010) (Jou & Kozhimannil, 2015).

2.3.2 Three aspects of SDM

This study adopted Charles' model of SDM to guide its outlining of SDM (Charles, Gafni, & Whelan, 1997). As promoted by Charles and her colleagues, the process of SDM has three aspects; extent of information sharing, deliberations and participation in the decision making and the decision making itself. The extent of SDM should measure all three components of decision making.

Even as it is accepted that the extent of physician communication positively impacts on adherence and clinical outcomes (Wachira & Middlestadt, 2014) (Zolnierek & Dimatteo, 2009), several authors have indicated differences in the extent of information sharing by clinicians. Patients from minority populations and lower socio-economic status reported that they have less access to information from their clinicians (Attanasio & Kozhymannil, 2018) (Willems & De Maesschalck, 2005) as did patients who had migrated from a population with lower socio-economic status to one with improved maternal healthcare services (Benyamini, Molcho, & Gozlan, 2017). Although some patient populations are reported not to request for the information (Levinson, Kao, & Kuby, 2005), many other studies indicate that the lower access to information increased the perception of lower ability to participate in the decision making process (Willems & De Maesschalck, 2005).

Some authors do report that the degree of deliberations between the patient and the clinician also impacts on the perception of SDM. A study conducted in 2010 did indicate that the perception of racial bias and inferiority complex may have led to poorer deliberations between the patients and clinicians in the study and thus impacted negatively on patient understanding of planned or proposed interventions (Peek & Odoms-Young, 2010). Patients attended to by consultant obstetricians also reported less deliberation on childbirth options than those attended to by midwives. The latter group felt more involved in their care and decision making (Deherder & Ilse, 2022).

The patient's perception on their involvement in the decision making process is also impacted on by the final decision making. Whereas some patient characteristics (including age and level of education) may have been associated with a greater acceptance of paternalistic decision making in some studies (Benyamini, Molcho, & Gozlan, 2017), several other authors indicate that allowing patients to make the decision, especially regarding interventions, has not resulted in increased adverse outcomes and on the contrary reduces the subjective aspects of the decision making; patient involvement has been associated with reduced parental decision conflict and reduced regrets when interventions were proposed to certain patient populations (Geurtzen & van den Heuvel, 2021). This allowed for improved patient perceptions of involvement in SDM.

2.3.3 Patient's Perspective on Shared Decision Making in Childbirth

SDM is currently accepted by many authors to be the preferred decision making process and has been shown to positively impact on the outcome of clinical care in several specialities of medicine. SDM is also being promoted as the preferred decision making process in maternity units. Several studies have indicated that SDM reduced the rate of unnecessary interventions at childbirth, better prepared patients the childbirth and resulted in lower complication rates (Moore, 2016). SDM has also been shown to improve communication with the patient, respect and overall patient satisfaction (Megregian, Emeis, & Nieuwenhuijze, 2020)

However, most of these studies were either physician self-reporting on SDM or used only medical related outcomes (Zondag, van Haaren-Ten Haken, & Offerhaus, 2022) (Coates, Goodfellow, & Sinclair, 2020). There exists only a small body of literature that reports on the patients' perception of SDM and patient satisfaction with SDM and the care offered at childbirth.

More so, most available literature on SDM in childbirth is limited to populations in high income countries with very well established healthcare systems. Our search of available literature did not access any study on SDM in the low and middle income countries (LMIC), more so in our specific region.

This study intends to study the perspectives of patients to SDM in a local set up of Kisumu County.

2.3.4 Shared Decision Making and Patient Characteristics

Several studies have indicated that different patient populations have different access to information and differing access to decision making during childbirth. The differences were even more apparent where patients underwent interventions at childbirth, with minority populations reporting lower levels of SDM (Attanasio & Kozhymannil, 2018). Some authors have shown that much younger patients tend to report not being offered SDM by their healthcare providers (Benyamini, Molcho, & Gozlan, 2017). Even with most studies in concurrence on the lower SDM levels in the younger population, different

geographical populations had differing reports on their satisfaction with the increased interventions. A study in Israel indicated that the younger patients had a more positive attitude towards the interventions (Benyamini, Molcho, & Gozlan, 2017) while a study in the USA indicated lower levels of SDM among younger black women, with lower levels of education (Attanasio & Kozhymannil, 2018).

Several authors concluded that patient populations with lower levels of education reported lower levels of SDM (Attanasio & Kozhymannil, 2018) (Benyamini, Molcho, & Gozlan, 2017). Studies conducted among women with higher level of education and higher health literacy levels indicate higher SDM. Patients with higher literacy levels also appear to be highly engaged in the decision making process (Murugesu & Damman, 2021). Studies also indicate that socially disadvantaged women felt did not feel safe in engaging discussions regarding decision making as they had lower access to the necessary information needed to engage their clinicians in the decision making process in maternity care (Ebert & Bellchambers, 2014).

As part of studying the associations between patient characteristics and SDM, this study will focus on associations of patient age and level of education with level of SDM.

2.3.5 SDM and outcomes in childbirth

Several authors have associated SDM with improved outcomes across several medical specialities, including in childbirth.

Earlier studies focused on physician communication concluded that better physician communication resulted in better patient outcomes (Zolnierek & Dimatteo, 2009) (Wachira & Middlestadt, 2014). These studies though did not consider the participation of the patient in the decision making process. Subsequent studies on clinical decision making have associated SDM with improved outcomes (Faiman & Tariman, 2019) (Weiner, Schwartz, & Sharma, 2013). The improved outcomes associated with SDM have included lower intervention rates, better satisfaction with the decisions for intervention and better patient satisfaction with the services offered (Faiman & Tariman, 2019) (Shay & Lafata, 2014). Even so, few of these studies have focused on an association between SDM and childbirth. More so, some authors do report that despite improved

sharing of information with SDM in childbirth, there has been no significant change in patient certainty of the decisions they would make only a decrease in decisional conflict and regret (Megregian, Emeis, & Nieuwenhuijze, 2020).

This study intended to assess the association of SDM to outcomes in childbirth. The outcomes studied were patient satisfaction with the services offered and listed complications at childbirth.

2.3.6 SDM-Q-9 Tool

Several tools have been proposed to assess SDM process (Kriston & Scholl, 2010) (Nijagal & Wissig, 2018) (Spigel & Plough, 2022). Most of the proposed and piloted tools have tended to factor in only certain aspects of the process and not all three; sharing information and preferences, actual decision making and the outcomes of the decision making.

The SDM questionnaire is currently accepted for use in several specialties of medicine including psychiatry, management of diabetes and in childbirth (Kriston & Scholl, 2010) (Rencz, Tamasi, & Brodsky, 2019) (Deherder & Ilse, 2022).

Despite the availability of several tools for the assessment of SDM, it is imperative that the tool used be of more widely accepted validity and reliability. The SDM questionnaire has been reported to have high validity and reliability in the studies utilising it (Deherder & Ilse, 2022) (Rencz, Tamasi, & Brodsky, 2019).

The acceptance of SDM-Q-9 tool has also been associated with the ease of its utility and translation across many languages (Doherr & Christalle, 2017). Several of the translations, including that to English have undergone psychometric testing and shown to retain the tool's validity and reliability.

The SDM-Q-9 being a self-administered questionnaire also helps to reduce investigator bias.

2.3.7 Outcome of care in childbirth

There are 1445 indicators that measure maternal health outcomes (Saturno-Hernandez & Martinez-Nicholas, 2019). These indicators measure wide variety of processes and outcomes around maternal health care. Several attempts have been made to categorise the measures with broader population based studies have preferred the use of much fewer indicators (KNBS , 2023) and the WHO setting out guideline for the generation and interpretation of the indicators (WHO, 2006). Despite the presence of numerous indicators, some indicators have over time been preferentially cited in studies due to their objectivity and that they cross cut across several epidemiological populations (Malini, Wissig, & Stowell, 2018) (Saturno-Hernandez & Martinez-Nicholas, 2019). These outcomes have thus been adopted by multicentre studies and by demographic health surveys (Malini, Wissig, & Stowell, 2018). The KDHS indicators of maternal health care and childbirth include maternal death, still birth, neonatal death, maternal need for referral (KNBS , 2023) (Mbugua & MacQuarrie, 2018). Other studies have included late maternal transfusion and maternal infections.

These indicators however omitted consideration on patient goals and objectives and reference to client satisfaction with the service offered. Several authors consider client satisfaction with maternal healthcare services as one of several key measures of the quality of care (Sehngelia, Milena, & Groot, 2021) (Kebede, Belachew, & Selbana, 2020)

Even as patient satisfaction with the services offered is considered a measure of the quality of maternal health services (Sehngelia, Milena, & Groot, 2021), (Kebede, Belachew, & Selbana, 2020), most studies have tended to consider satisfaction with the structure and processes of the healthcare system (Srivastava & Avan, 2015), (Christiaens & Bracke, 2007) . Christiaens et al did actually assess the fulfilment of expectations, as a broad parameter in assessment of the care and considered other aspects that included pain control, emotions, length of labour and need for interventions (Christiaens & Bracke, 2007). Two previous studies conducted both in private and public maternity health facilities in Kenya concluded that good patient satisfaction with services at childbirth (Gitobu, Gichangi, & Mwanda, 2018) (Okumu & Oyugi, 2018). These studies focused on the processes and structures of the maternal healthcare services.

These studies did not factor in the decision making process as a factor in the assessment of client satisfaction with the maternity care offered to the respondents. One study concluded that low levels of SDM have been associated with lower levels of patient satisfaction in childbirth, with patients indicating low levels of all three aspects of the decision making process (Lopez- Toribio & Bravo, 2021), but as a single centre study with a small sample size.

2.4 Conceptual Framework

The conceptual framework for this study is modelled on Charles' model of SDM and the tool adopted being SDM-Q-9 tool that is validated and has both high reliability and validity. The framework is adapted to SDM in maternity care.

2.4.1 Operationalisation of variables

The three specific objectives of this study are:

1) To describe the patients' perspective on shared decision making in the maternity units of Level 4 hospitals in Kisumu county.
2) To assess patterns of association between patient characteristics with shared decision making in level 4 maternity units in Kisumu County.
3) To assess patterns of association between shared decision making with outcomes in the maternity units of Level 4 Hospitals in Kisumu county.

The independent variables for this study shall include:

- Patient characteristics- age, level of education.

The dependent variables for this study shall include:

- Patient satisfaction levels
- Outcomes of clinical care

The variables for this study objective was operationalised as follows:

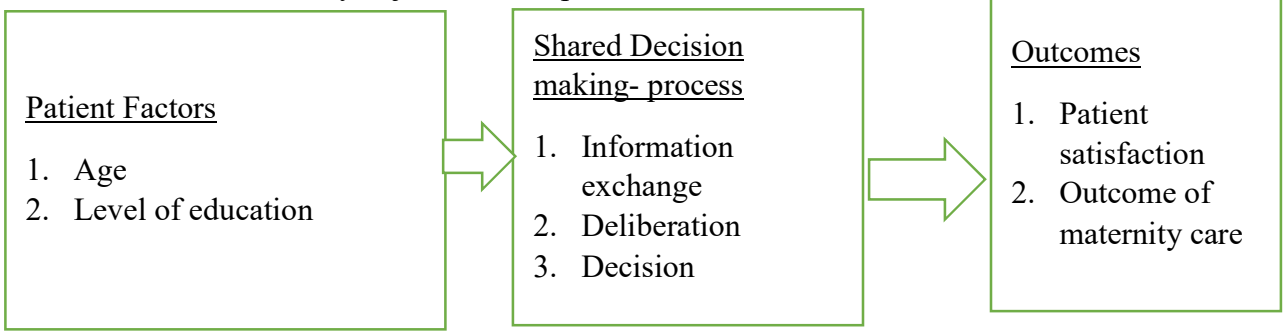

Fig 2.3: Conceptual framework. Adopted from Charles' model of SDM

Table 2.1 Operationalisation of variables

Objective	**Variable**	**Measurement**	**Data collection instrument**	**Data Analysis**
1. To describe the patients' perspective on shared decision making in the maternity units of Level 4 hospitals in Kisumu county.	Patient information level	Qualitative data using a Likert scale	Semi-structured questionnaire	Descriptive & Correlational analysis
	Patient deliberation level	Qualitative data using a Likert scale	Semi-structured questionnaire	Descriptive & Correlational analysis
	Patient-clinician decision making	Qualitative data using a Likert scale	Semi-structured questionnaire	Descriptive & Correlational analysis
2. To assess patterns of association between patient characteristics with shared decision making in level 4 maternity units in Kisumu County.	Age	Quantitative data	Semi-structured questionnaire	Descriptive analysis
	Education level	Quantitative data	Semi-structured questionnaire	Descriptive analysis
	SDM and patient characteristics	Quantitative data	Semi-structured questionnaire	Descriptive & Correlational analysis
3. To assess patterns of association between shared decision making with outcomes in the maternity units of Level 4 Hospitals in Kisumu county.	Patient satisfaction levels	Quantitative data	Semi-structured questionnaire	Descriptive analysis
	Outcomes of care	Quantitative data	Semi-structured questionnaire	Descriptive analysis
	SDM and Patient satisfaction & outcomes			Correlational analysis

CHAPTER THREE: RESEARCH METHODOLOGY

This chapter presents the methodology used. It covers the following sections: research design, study population, sampling design and procedure, data collection procedures, analysis, research quality and ethical issues in research

3.1 Research Philosophy

This study was based mainly on a research philosophy of pragmatism to allow for the development of a holistic analysis and to fully incorporate the different relevant patient based factors into the study.

3.2 Research Design

This study is designed as a cross-section descriptive study of the study population based on quantitative approach at given points of time. Primary data was collected by administering a semi-structured questionnaire (SDM-Q-9 tool) to purposely sampled patients who have been attended to at sampled public health facilities to their perspective on shared decision making in the sampled maternity units. The questionnaire was administered at the point of or after discharge of the patients from the maternity unit. The outcomes of care were as self-reported by the patients. As such, the researchers and the research assistants did not access the patients' medical records.

3.2.1 Study Population

The study population of this study was derived from maternity units of public Level 4 hospitals in Kisumu County. This population constitutes mothers who had accessed maternity services in the units.

To calculate the sample size of respondents for the study, the sampling population was calculated using Cochran's formula (Cochran, 1977):

$$n_0 = \frac{Z^2 p\, q}{l^2}$$

Where n_0 is the desired sample size

Z- standard normal deviate set at 95% CI= 1.96

p- prevalence of maternal satisfaction (Gitobu, Gichangi, & Mwanda, 2018) = 54.5%

q = (1-p) = (1-0.545) = 0.455

l- with a level of significance of 5%, l= 0.05

$$n_0 = \frac{(1.96)^2 \times 0.545 \times 0.455}{(0.05)2}$$

= 381.04

Allowing for non-response and withdrawal for the study, the sample size can be adjusted by 5%

Giving a sample population of 381.04 + (0.05 x381.04) = 400.1

This was rounded off to 401.

3.2.2 Sampling Technique

Having different levels of facility offering maternal healthcare services in Kisumu County, it would be best to use stratified non-probability sampling. The study created strata of the facilities from which the respondents were recruited, then within the strata, sample using simple purposive non-probability sampling by administration of the study tool to the study populations in the maternity units. The stratified sampling of the health facilities removes bias in sample selection, is fast and saves both time and cost. It is also considered to have smaller variances than other alternative sampling technique, more so when the researcher has a list of the units in the population. Purposive sampling of the patients allowed the sampling to be limited only to the patients who had sought childbirth services, and no other services in the maternity unit. Purposive sampling would be more appropriate for the study population; whose background information is highly selective allowing for higher quality of the sample

The sample allocation for the different levels of sample population would be as follows;

Table 3.1 Sample population per facility

FACILITY LEVEL	NO	SAMPLED FACILITIES	SAMPLED PATIENTS
COUNTY HOSPITAL	8	8	102
SUBCOUNTY HOSPITAL	22	22	270
TOTAL	**30**	**30**	**381**

The study tool was administered to patients at the point of discharge from the health facilities by four trained research assistants. The sampling was continuous enrolment until the desired sample size of respondents for each of the facilities is achieved.

3.2.3 Data Collection Methods

Four research assistants was trained on the administration of semi structured questionnaire. The questionnaires were administered to the purposely non-probability sampled respondents in the form of exit surveys after delivery in the sampled facilities After confirming that the respondent met the inclusion criteria, the research assistants offered the self-administered questionnaire to the respondents in their preferred language. The research assistants would be available at the respondent's side while they completed the questionnaire, but not assist with its completion. The data collection was done both during the day and at night to allow for consecutive sampling.

The questionnaire ranked the responses to the components of the SDM-Q-9 through a 6 point Likert scale as follows: 1 for "strongly disagree", 2 for "disagree", 3 for "somehow disagree", 4 for "somehow agree" and 5 for "agree" and 6 for "strongly agree". The SDM-Q-9 tool used in this study has been validated by previous studies to have relatively acceptable construct validity and internal reliability (Deherder & Ilse, 2022) (Rencz, Tamasi, & Brodsky, 2019). In this study, the percentage of patients who rated an item on the Likert scale as "somehow agree", "agree" or "strongly agree" was referred to as the positive response rate (PRR) to this item, and the percentage of inpatients who rated an item on the SDM scale as "strongly agree" was referred to as high positive response rate (HPRR) to this item

All data collection was conducted only after receiving IRB approval from Strathmore University ERC, National Commission for Science Technology and Innovation (NACOSTI) and the Ethics Review Committee (ERC) of Jaramogi Oginga Odinga Teaching and Referral Hospital (JOOTRH), a prerequisite to conduct any research at the JOOTRH Level 5 hospital.

3.2.4 Inclusion Criteria

For the structure and processes, respondents were enrolled from all the level 4 public health facilities with maternity units

Respondents meeting the following criteria were enrolled into the study population;

1. Be above the age of 18 years
2. Be at the point of discharge from the maternity unit
3. Must have been admitted or attended to for childbirth
4. Must have offered informed consent for the study

3.2.5 Exclusion Criteria

Exclusion criteria from the study was

1. Patients not meeting the inclusion criteria
2. Patients referred from another facility following pregnancy or birth related complications
3. Patients who decline consent to be enrolled into the study.
4. Patients below the age of 18 years.

3.2.6 Data Management and Statistical Analysis

The primary researcher being accredited on good clinical practice (GCP) trained the four research assistants on the objectives of the study, the SDM-Q-9 tool, administration of the questionnaire and research ethics using National Institutes of Health (NIH) research ethics guidelines (National Insititute of Health, 2015), with the research assistants signing off at the completion of the training. The semi-structured questionnaire on client satisfaction was administered by four research assistants

After data collection, data was checked by the principal researcher for accuracy, completeness and consistency. Any incomplete data was excluded from further analysis. The data was then coded and entered into Microsoft Excel before being transferred to

Statistical Package for Social Sciences (SPSS) version 29.0 for further analysis. Data was analysed on the basis of the three specific research objectives.

The analysed data on patient characteristics was interpreted using descriptive statistics (frequency, percentage, mean, range, and standard deviation). Associations between two continuous variables were analysed using Pearson's correlation coefficient. Association between ordinal variables was tested using inferential statistics (Pearson's chi-square & Fisher's exact tests)

Confidence interval was taken at 95% and p values <0,05 was taken to be statistically significant.

3.2.7 Measures of Validity and Reliability

Several previous studies using the SDM-Q-9 tool have shown high validity and high reliability of the tool in different specialties of the medical filed when studying SDM (Deherder & Ilse, 2022) (Rencz, Tamasi, & Brodsky, 2019).

To minimise response bias and further ensure reliability of the data the four research assistants were trained by the principal investigator on the research instrument before the study commences. The study selected a pilot group of twenty (20) respondents, equivalent to greater than 5% of the target study population, from the target population to test the reliability of the research instrument.

The pilot study enabled the researcher and the four research assistants to be familiar with the questionnaire and its administration procedure as well as identifying items that may require modification to enhance its validity and reliability.

Respondents were informed that their responses will remain anonymous and would not in any way lead to victimisation by the care providers. The administered questionnaire did not include any specific patient identifiers and the serialisation was done as per the facility. The principal investigator and research assistants were available during the filling of the questionnaires to offer clarifications to the respondents.

3.3 Ethical Considerations

This study safeguarded all ethical consideration during the course of the research study period. The primary researcher sought for and received the approval of the Strathmore University Institutional Ethics Review Committee (SU-ISERC 1875/23). Subsequent to receiving approval from SU-IERC, the researcher applied for and received a research permit from the National Commission for Science Technology and Innovation (NACOSTI) License No NACOSTI/P/23/31318.

The researcher sought and received the permission of the Department of Medical Services, County Government of Kisumu to allow for access and collection of data at the county health facilities. The researcher and research assistants presented themselves to the administration of each facility before accessing the maternity units. Only consenting respondents were included in the study. The study was guided by the following ethical considerations; voluntary inclusion to the study, willingness to take part, informed consent, confidentiality, guarantee protection of information and privacy.

The researcher and research assistants explained the objectives of the study and provided room for respondents who willingly consent to the study to fill the questionnaire. The researcher and research assistants were available for any clarifications as the respondents completed the questionnaire. Data collected from one respondent was withdrawn when the respondent verbally withdrew her consent.

CHAPTER FOUR: RESEARCH FINDINGS AND DATA ANALYSIS

4.1 Introduction

This chapter entails the findings of the research, data analysis, the presentation and interpretation of the results. This study aimed to describe the patients' perspective on shared decision making in the maternity units of Level 4 hospitals in Kisumu county, to characterise any association between patients' age and level of education with SDM as well as any association between their perception of SDM with outcomes of their care in the maternity units. The research data was collected using self-administered questionnaires based on the SDM-Q-9 tool to 381 patients at the point of discharge after accessing childbirth services in all the public level 4 hospitals (eight (8) county and twenty-two (22) subcounty hospitals) within Kisumu County.

This chapter starts by giving the demographic profile of the patients, their level of education and then analyses the associations as per the objectives of the study.

4.2. General descriptive results

394 participants who met the eligibility criteria were enrolled into the study. The study tools for 12 participants were withdrawn as the data collection tools were incompletely filled (7) or had corrections made within the tool (5). One participant verbally recalled her consent and her questionnaire was annulled. The study sample size thus attained the desired sample size of 381 participants.

The majority of the patients were in the age bracket of 21-25 years (n-151, 39.6%). The mean (SD) patient age of the study population was 25.39 years (SD 4.75yrs). the study excluded any patients who had not attained the age of 18 years, that is considered the legal age of consent.

Table 4.1: Age distribution

Age bracket	**Number**	**Percentage**	**Cumulative percentage**
18-20	59	15.5	15.5
21-25	151	39.6	55.1
26-30	115	30.2	85.3
31-35	42	11.0	96.3
36-40	12	3.1	99.5
>40	2	0.5	100.0

Table 4.2 Descriptive statistics of age

	N	Minimum	Maximum	Mean	Std. Deviation
Age	381	18	44	25.39	4.752
Valid N	381				

The study population had the level of the education characterised into four groups, categorised using the Kenyan education system of 8 years' primary education, 4 years' secondary education then tertiary education. The study population was classified as follows: Not completed primary education (< 8 years of study), completed primary education (8 years of study), completed secondary education (12 years of study) and completed tertiary education (any form of tertiary education beyond the 12 years. This included certificate, diploma and degree). Using this description of the level of education, the study population was distributed as shown below with most respondents having completed their secondary education (n- 182, 47.8%), followed by those who completed primary education (n-103, 27%). The mean score for the level of education was 2.84, but the mode of the study was participants who had completed secondary education (n-182).

Table 4.3 Frequency using level of education

Frequency	**n**	**Percent**
1. Did not complete primary	18	4.7
2. Completed Primary	103	27.0
3. Completed secondary	182	47.8
4. Completed tertiary	78	20.5
Total	**381**	**100.0**

Table 4.4: Descriptive analysis of age of study participants

	N	Minimum	Maximum	Mean	Std. Deviation
Education	381	1	4	2.84	0.800
Valid N	381				

4.3 Findings on the patients' perspective on SDM in the maternity units.

Shared decision making has three aspects; information sharing, deliberation between the patient and the clinician, decision making by the patient and the clinician. The study analysed the overall satisfaction of the patients with the SDM process as well as the patients' perspective on each aspect of SDM process.

On whether they were satisfied with the decision making process, the study found that 91.3% (n-348) of the patients reported a PRR, with 37.5% (n-143) reporting a HPRR. Only 33 patients (8.7%) did not have a PRR when responding to their overall level of satisfaction with the SDM during childbirth.

This study finds that the overall perception of satisfaction with SDM during childbirth was high at 91.3%, with 37.5% being very satisfied with the SDM process.

Table 4.5: Overall satisfaction with SDM process

	Number	**%**
1. Completely disagreed	3	0.8
2. Disagree	9	2.4
3. Somehow disagree	21	5.5
4. Somehow agree	114	29.9
5. Agree	91	23.9
6. Completely agree	143	37.5
TOTAL	**381**	**100%**

On whether they were happy with the information shared by the clinicians attending to them, the majority of patients reported PRR with the level of information sharing between them and their clinician (n- 210, 55.11%), with 14.2% (n-54) giving a HPRR on the level of information sharing.

Table 4.6: Frequency of respondents on perception of information sharing

	Number	**%**
1. Completely disagreed	19	5.0
2. Disagree	50	13.1
3. Somehow disagree	102	26.8
4. Somehow agree	92	24.1
5. Agree	64	16.8
6. Completely agree	54	14.2
TOTAL	**381**	**100%**

The mean score for the level of information sharing was 3.76 out of 6 (Std Dev 1.337).

Table 4.7 Descriptive statistics of respondents' perception of information sharing

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Information sharing	381	1.00	6.00	3.726	1.337

This study found that there is a statistically significant positive correlation between the extent of information sharing the patient received and their overall satisfaction with the decision making process at 0.26 (p 0.001)

Table 4.8: Correlation between information sharing and satisfaction with SDM

		Information sharing	SDM satisfaction
Information sharing	Pearson Correlation	1	0.260
	Sig. (2-tailed)		0.001
	N	381	381
DM satisfaction	Pearson Correlation	.260**	1
	Sig. (2-tailed)	0.001	
	N	381	381

Table 4.9: Confidence intervals for information sharing

	Pearson Correlation	Sig. (2-tailed)	95% Confidence Intervals (2-tailed)	
			Lower	Upper
Information sharing – DM satisfaction	0.260	0.001	0.164	0.352

On whether they were happy with the deliberations between them and the clinicians attending to them, less than half of the patients had a PRR on the level of deliberations between the clinician and the patient (n-178, 46.7%) with a majority not being satisfied with the level of deliberations between them and their clinicians during childbirth (n-203, 53.3%). Even so, the mean score for the patients' perception of their level of deliberation with their clinician during childbirth was high, with a mean score of 4.19 of out 6 on the Likert scale scoring.

Table 4.10: Frequencies of respondents' satisfaction with deliberations

	Number	**%**
1. Completely disagreed	62	16.3
2. Disagree	56	14.7
3. Somehow disagree	85	22.3
4. Somehow agree	63	16.5
5. Agree	32	8.4
6. Completely agree	83	21.8
TOTAL	**381**	**100%**

Table 4.11: Descriptive analysis of responses on deliberations

	N	Minimum	Maximum	Mean	Std. Deviation
Deliberation	381	1	6	4.19	1.627
Valid N (	381				

The study found a statistically significant correlation between the patient-clinician deliberations and the degree of overall satisfaction with the decision making process, at 0.374 (p 0.001).

Table 4.12: Correlation between deliberations and satisfaction with SDM

		Deliberations	DM satisfaction
Deliberations	Pearson Correlation	1	.374
	Sig. (2-tailed)		0.000
	N	381	381
DM satisfaction	Pearson Correlation	.374	1
	Sig. (2-tailed)	0.000	
	N	381	381

On whether they were happy with their involvement in making the decision of during childbirth, 55.3% of the patients reported a PRR (n-211), with 16.5% reporting a HPRR: (n-63)

Table 4.13 Frequencies of respondents' satisfaction with decision making

	Number	**%**
1. Completely disagreed	29	7.6
2. Disagree	47	12.3
3. Somehow disagree	94	24.7
4. Somehow agree	81	21.3
5. Agree	67	17.6
6. Completely agree	63	16.5
TOTAL	**381**	**100%**

The study found a statistically significant positive correlation (0.432, p 0.0001) between satisfaction with the decision made and overall satisfaction with the SDM process.

Table 4.14: Correlation between decision making and satisfaction with SDM

		Decision making with clinician	SDM satisfaction
Decision making with clinician	Pearson Correlation	1	.432
	Sig. (2-tailed)		0.0001
	N	381	381
SDM satisfaction	Pearson Correlation	.432	1
	Sig. (2-tailed)	0.0001	
	N	381	381

This study thus finds that there is a statistically significant correlation between each aspect of SDM (information sharing, deliberation and decision making) and overall satisfaction on SDM among the respondents of the study.

4.4 Association between patient characteristics and SDM.

Our study objective was to analyse for any association that age and level of education may have with patient satisfaction with SDM process during childbirth.

4.4.1 Association between age and SDM

The study analysed the mean score, the PRR and HPRR on each aspect of SDM for each age bracket of the study population.

Table 4.15 Patients' overall perception of SDM using age brackets

AGE	MEAN SCORE		
	(out of 6)	%	n
18-20	4.85	80.83	59
21-25	4.93	82.17	151
26-30	4.91	81.83	115
31-35	4.62	77.00	42
36-40	4.67	77.83	12
>40	6	100.00	2
			381

The study analysed the PRR and HPRR on each aspect of shared decision making for each age bracket as shown on Table 4.16.

Table 4.16: Analysis of PRR and HPRR on three aspects of SDM

Age	**Information sharing**		**Deliberation**		**Decision making**		**Satisfaction with SDM**		**n**
	PRR (%)	**HPRR (%)**	**PRR (%)**	**HPRR (%)**	**PRR (%)**	**HPRR (%)**	**PRR (%)**	**HPRR (%)**	
18-20	69.5	10	47.4	27.1	72.9	27.1	88.1	45.8	59
21-25	67.5	7.3	54.1	22.5	76.1	29.1	92.0	40.3	151
26-30	66.0	10	47.8	17.4	76.5	26.9	95.7	33.0	115
31-35	57.1	7.1	33.3	14.3	66.7	7.1	85.7	30.9	42
36-40	83.3	8.3	83.3	41.7	66.7	0.0	91.7	25.0	12
>40	100	0.0	100	50.0	100	0.0	100	100	2
TOTAL									**381**

Patients above the age of 40 had the highest level of PRR across all three elements of DM (100%, 100%, 100%), as was their overall PRR on the perception of satisfaction with SDM (100%), whereas patients between the ages of 31 and 35 years had the lowest PRR across all three components of decision making (57.1%, 33.3%, 66.7%) lowest of the age brackets. The patients in the age bracket of 31 to 35 years also had the lowest PRR on the perception of SDM at 85.7%

As much as there was a negative correlation between age and perception of shared decision making (-0.042), it was not statistically significant (p value of 0.41).

Table 4.17: Correlation between age and overall perception of SDM

		Age	SDM satisfaction
Age	Pearson Correlation	1	-0.042
	Sig. (2-tailed)		0.41
	N	381	381
SDM satisfaction	Pearson Correlation	-0.042	1
	Sig. (2-tailed)	0.41	
	N	381	381

4.4.2 Level of education and SDM

This study analysed the mean score, patients' perception on each element of decision making and overall perception of SDM across the different levels of education.

Table 4.18: Patients Positive response rates for each element of DM across different levels of education

Level of education	Information sharing		Deliberation		Decision making		Satisfaction with DM		n
	PRR (%)	HPRR (%)	PRR (%)	HPRR (%)	PRR (%)	HPRR (%)	PRR (%)	HPRR (%)	
Did not complete primary	**38.9**	**11.1**	27.8	**5.6**	**66.7**	**22.2**	83.3	33.3	18
Completed Primary	**63.1**	**7.8**	69.9	**19.4**	**70.8**	**15.5**	93.2	30.0	103
Completed secondary	**62.6**	**6.6**	42.8	**21.9**	**67.6**	**13.7**	91.2	41.8	182
Completed tertiary	**83.3**	**5.1**	57.7	**28.2**	**74.3**	**12.8**	92.3	46.1	78
TOTAL									381

Respondents who did not complete their primary education had the lowest PRR for each of the three elements of decision making (38.9%, 27.8%, 66.7%) and also had the lowest PRR on the perception of overall SDM during childbirth at 83.3%. Patients who had

completed tertiary education had the highest PRR on information sharing (83.3%) and decision making (74.3%) by their clinicians, and second highest on deliberations (57.7%) and on the overall perception of the SDM process during childbirth at 92.3%. The results do however indicate that across all levels of education there was overall satisfaction with the shared decision making process.

Table 4.19: Mean score of perception of decision making for different levels of education

Level of education	Mean Score				
	Information sharing	Deliberation	Decision making	Overall SDM	n
Did not complete primary	48.7	53.7	66.2	83.3	18
Completed Primary	61.0	60.5	66.8	81.3	103
Completed secondary	59.3	58.5	65.8	82.0	182
Completed tertiary	72.5	67.5	63.8	79.7	78
TOTAL					381

However, there is no statistically significant correlation between the level of education and the patients' perception of shared decision making with a Pearson correlation of the level of education and satisfaction with shared decision making of 0.092, at *p* value of 0.073.

Table 4.20: Correlation between level of education and SDM

		Education	DM satisfaction
Education	Pearson Correlation	1	0.092
	Sig. (2-tailed)		0.073
	N	381	381
DM satisfaction	Pearson Correlation	0.092	1
	Sig. (2-tailed)	0.073	
	N	381	381

The study thus finds that respondents with the lowest level of education (did not complete primary) had the lowest perception of involvement at each aspect of SDM (information sharing, deliberation, decision making) but had the highest overall satisfaction with the SDM process.

4.5 Association between perception of SDM and outcomes of care

A total of 349 (n-381) (91.6%) of the respondents indicated that they were satisfied with the shared decision making process during their care in the maternity units. Overally, 58.8% of the respondents did not report the occurrence of any complications, while 41.2% self-reported complications during their care in the maternity units. To analyse the outcome of care, the study analysed for the occurrence or absence of common complications of childbirth.

Table 4.21: Frequency of self-reported complications

	n	Percent
No complications	224	58.5
Reported complications	157	41.2
Total	381	100

The study analysed for any association between the overall perception of SDM and the occurrence of complications during childbirth, as self- reported by the respondents.

Table 4.22: Analysis of overall perception of SDM and complications

Score on SDM	Respondents	Respondents without any complications	Respondents with complications	Rate (%)
1	3	1	2	66.7
2	9	3	6	66.7
3	20	8	12	60.0
4	114	70	44	38.6
5	86	52	34	39.5
6	149	90	59	39.6
TOTAL	**381**	**224**	**157**	**41.2**

Patients with PRR (scores of 4,5 and 6) for the SDM process had much lower rates of self-reported complication (38.6%, 39.5%, 39.6%) as compared to respondents who reported not being satisfied with the shared decision making process (66.7%, 66.7%, 60%).

However, an analysis for correlation between satisfaction with the SDM process and the occurrence of complications found the correlation at -0.081, was not statistically significant (p- 0.057).

Table 4.23 Correlation between satisfaction with SDM and occurrence of complications

		Satisfaction with SDM	Occurrence of Complication
Satisfaction with SDM	Pearson correlation	1	-0.081
	Sig (1 tailed)		.057
	N	381	381

CHAPTER 5: DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

In this chapter, the findings are discussed, conclusions drawn based on the findings and recommendations for the various stakeholders and further research suggested in the gaps identified by the study

5.2 Summary of findings

The objective of this study was to study patients' perspective of shared decision making process during childbirth in the maternity units of public Level 4 hospitals in Kisumu county, any association that their perceptions may have with two specific patient characteristics (age and level of education) as well to study any correlation that there may be between the patients' perception of shared decision making and self-reported outcomes during childbirth. The study was conducted in the maternity units of public Level 4 hospitals in Kisumu county with the administration of questionnaires at the point of discharge of the patients from the maternity units.

The study findings show that the mean age for the study population accessing childbirth services in the public Level 4 hospitals was 25.39 years, ranging from 18 years to 42 years. The study did however exclude any patients below the age of 18 years from enrolment into the study. The study findings showed that most of the respondents of the study at 47.8% reported having completed secondary education as their highest level of education.

The study findings indicate that participants' perception on the level of information sharing, deliberation and decision making with their clinicians correlate with their overall level of satisfaction with the decision making process during childbirth. The correlation of each aspect of the shared decision making process is in tandem with Charles' model of SDM that found that each of the three aspects of SDM; information sharing, deliberation and decision making, are key steps required in SDM process.

The study also found that participants between the ages of 31 and 35 reported the lowest level of positive response rates with the level of information sharing, deliberation and decision making process between them and their clinician while also reporting the lowest

positive response rates on overall shared decision making process during childbirth. Respondents above the age of 40 years reported the highest perceived level of satisfaction with all three components of decision making as well as overall decision making process.

The study findings also indicate that respondents who did not complete primary school education had the lowest perceived satisfaction with the level of information sharing and deliberation with their clinicians during childbirth, and the lowest positive response rate on their overall satisfaction with the shared decision making process. Respondents who completed tertiary levels reported the highest perceived level of information sharing, deliberation and decision making with their clinicians, and the second highest positive response rate on the overall shared decision making process during childbirth.

The study did not find any statistically significant correlation between the age or level of education of the respondents with their perception of shared decision making during childbirth.

The study did find that respondents who perceived not being satisfied with the SDM process had higher self-reported rates of complications as compared to respondents who reported being satisfied. However, the negative correlation at -0.081 was not statistically significant.

5.3 Discussion of findings

5.3.1 Descriptive Findings

This study enrolled only respondents who had attained the age of eighteen years (18), this being the age of legal consent in Kenya. The mean age for this study corresponds to that of other local studies (Abuya, Warren, & Miller, 2015) but also lower than that reported by several previous local (Gitimu, Herr, & Oruko, 2015) (Gitobu, Gichangi, & Mwanda, 2018) (Onchonga, Hosseini, & Keraka, 2020)and international studies (Attanasio & Kozhymannil, 2018) (Khalife- Gaderi, Amiri-Farahani, & Hagani, 2021), that had mean ages ranging from 27 years to 28 years. Studies in other developing and newly developed countries have also reported mean ages at childbirth between the ages of 28 and 30 years (Barnowska, Kadjy, & Pawlicka, 2020). Even though this study found a younger mean age for childbirth than other studies, we are unable to conclude that the age at childbirth in Kisumu county is lower than that of the rest of the country.

The highest proportion of respondents in this study reported their highest level of education as having completed secondary education (n- 182, 47.8%). Together with the 78 respondents who completed tertiary education (20.5%), the study found that 68.3% (n-260) of the respondents had completed at least secondary education as their highest level of education. The findings of this study indicate that the respondents in this study had a higher level of education that than reported by several previous studies. Onchonga et al reported levels of 21.5% and 15.4% for respondents having completed secondary and tertiary levels of education, respectively (Onchonga, Hosseini, & Keraka, 2020). Gitimu et al reported 20.6% completed secondary education while 5.1% had completed tertiary education, and Asweto et al reported that the majority of the patients in their study (60.3%) had completed primary education, with 36.4% having completed secondary education and 4.6% having tertiary education (Gitimu, Herr, & Oruko, 2015). Damian et al in their study conducted in Tanzania reported only 16.7% of the study population as having a secondary or higher level of education (Damian, Tibelerwa, & John, 2020) . Thus we find that our study population had a higher level of education, as compared to previous studies in Kenya and regionally that evaluated the level of education among women accessing childbirth services. The study findings are comparative to those other studies in middle income countries (Laksono & Wulandari, 2021), but much lower than the findings of other studies conducted in set-ups with more developed healthcare systems (Barnowska, Kadjy, & Pawlicka, 2020) (Luo, Liu, & Lu, 2021) (Deherder & Ilse, 2022) that all reported over 90% of the respondents having completed secondary education, of whom over 75% had tertiary education.

5.3.2. Patients' perspective of shared decision making.

This study analysed the patients' perception of the overall shared decision making process, as well as each of the three accepted components of decision making process in a clinical set-up. The three components of decision making that are accepted to be present in shared clinical decision making, which are: information sharing, deliberations between the patient and the clinician and the decision made (Elwyn & Frosch, 2012).

The majority of the patients in our study indicated a level of satisfaction with the degree of shared decision making process during childbirth with 91.3% of the patients expressing overall satisfaction with the level of SDM process during childbirth (n- 348, 91.3%). This

level of satisfaction is much higher than levels of decision making during childbirth expressed in other studies that our review of published literature could find which ranged from 61.5% to 75% (Deherder & Ilse, 2022) (Mazúchová & Kelcíkova, 2020). The levels of PRR with SDM was only comparative to very few studies which did not relate to childbirth, but to SDM in other health related conditions in better established healthcare systems (Luo, Liu, & Lu, 2021) (Hitz, Ribi, & Li, 2013)

5.3.3 Association between patient characteristics and SDM

This study focused on two patient characteristics (age and level of education) and any association they might have had with the patients' perception of SDM during childbirth.

5.3.3.1 Association between age and SDM

This study found that patients between the ages of 31 and 35 had the lowest positive response rates across all elements of decision making, as well as with the overall SDM process during childbirth, whereas patients whose age was above 40 years had the highest level of perceived satisfaction with SDM process during childbirth. However, there was no statistically significant correlation between the increase in age and perception of SDM at childbirth.

Previous studies have found that younger patients preferred more decision making responsibilities when decisions have to be made regarding their healthcare, more so when interventions are anticipated (Schneider & Körner, 2006) (Lindsay & Alokozai, 2020), but were also the age cohorts that reported lower degrees of SDM (Fullwood, Kennedy, & Reeves, 2013) (Attanasio & Kozhymannil, 2018). This study defers from the previously published ones in regard to the characterisation of the age brackets. A previous study on patient satisfaction with maternal and newborn services in Kisumu county concluded that lowest level of satisfaction with services being among patients between ages of 40-45 (Ibworo, Omondi, & Guyah, 2020). Most previous studies that had age as a study variable were conducted in developed countries that considered the age bracket of 18 years to 35 years as two or three categories (Attanasio & Kozhymannil, 2018) (Luo, Liu, & Lu, 2021).

This study recommends that further studies be conducted to better characterise the low PRR among patients in the age bracket of 31 and 35 years.

5.3.3.2 Association between level of education and SDM

Similar to other studies, this study found that patients who had not completed primary school education had the lowest PRR for information sharing, deliberation and decision making with their clinician as well as having the lowest overall PRR on their perception of SDM process. Our study also found that patients with tertiary education reported the highest PRR and HPRR for information sharing and decision making around childbirth. Several studies have indicated that clinicians tend to offer less information and deliberate less around birth choices when attending to patients with lower levels of education (Attanasio & Kozhymannil, 2018), at times assuming that the patients have a lower comprehension of the information offered (Vedasto, Baraka, & Furia, 2021). Several authors have also indicated that patients with tertiary education reported higher levels of satisfaction and participation in the SDM while accessing healthcare services both for childbirth (Attanasio & Kozhymannil, 2018) and for other services (Nuwagaba, Olum, & Bananyinza, 2021). Earlier studies had indicated that the need for more knowledge and information around childbirth increased with the increase in the level of education (Levinson, Kao, & Kuby, 2005) and that patients with lower levels of education perceived their involvement in decision making in terms of consenting to an option recommended by their clinicians (Smith, Dixon, & Trevena, 2009). The findings of our study and those of other authors indicate that patients with lower levels of education have a perception that they are receiving less information and having less deliberation with their clinicians on the decisions being made during childbirth (Attanasio & Kozhymannil, 2018). These patients may not be enabled at decision making during childbirth, with subsequent lower levels of satisfaction with the decision making process. The lower level of satisfaction is an unmet need in their access to healthcare services, as this study has shown with patients accessing childbirth services. With the growing acknowledgment of the role of SDM in improving outcomes of clinical care and childbirth, it is advisable for clinicians to expand the degree of SDM practiced around childbirth. Deliberate practices to improve the information sharing and deliberation with patients have been shown to improve both the outcomes of clinical care (Moore, 2016), and the patients' satisfaction with both the decision making and the overall care accessed (Weiner, Schwartz, & Sharma, 2013). The

improved SDM practice also reduces the patients regrets towards any decisions they may have made while accessing healthcare services (Geurtzen & van den Heuvel, 2021).

5.3.4 Association between perception of SDM and outcomes of care during childbirth

This study found that patients who had positive perception of their involvement in SDM, with positive response rates, reported relatively lower levels of complications as compared to those who did not have positive response rates on their perception of SDM. The findings of this study would indicate that, in addition to improving the overall satisfaction of the patient, improved SDM could lead to reduced rates of complications during childbirth.

Hauser et all in their review of controlled intervention studies of SDM found that of the 22 trials meeting their criteria for review, ten articles reported that 57% of the endpoints were significantly improved by SDM intervention compared to the control group, while the same outcomes did not differ in the remaining twelve articles. The same review did find that 39% of the relevant outcomes were significantly improved across all the 22 trials (Hauser, Koerfer, & Kuhr, 2015). Wehking et al reported similar mixed results in their review of published literature when they found that only 81 of 296 outcomes were reported to improve with SDM (Wehking, Debrouwere, & Danner, 2023). Several other studies and reviews of published literature do not conclusively reveal any association between SDM and reduction in complication rates during childbirth, only suggesting that excluding the patient and partner at childbirth may lead to adverse outcomes (Alruwaili & Crawford, 2023) (Megregian, Emeis, & Nieuwenhuijze, 2020)

5.4 Study Limitations

Our study acknowledges that it may have had the following limitations.

1. The study was conducted over a 2-month period (November to December) and as such may not have accounted for seasonal variabilities in respondents that may occur during the calendar year.

2. Study enrolled consecutive respondents who met the inclusion criteria until the desired sample size was achieved. A study with consecutive purposive sampling may, at times, not be representative of the study population.

5.4 Conclusions

Our study findings have shown that each of the three aspects of SDM correlates with the patient's perception of SDM, and is thus in concurrence with Charles' model of SDM. Our study findings also show that patients between the ages of 31-35 years had the lowest perception of each aspect of shared decision making. The study also found that patients with lowest level of education had the lowest level of perception of SDM during childbirth. Improved involvement of patients within SDM would possibly lead to a reduction in complication rates around childbirth.

5.5 Recommendations

1. The County Government of Kisumu raise awareness on shared decision making process among healthcare workers attending to patients accessing childbirth services at public level 4 hospitals within Kisumu County
2. Deliberate effort be made to increase the involvement of patients in shared decision making by improving the degree of information sharing by clinicians, allow for more extensive deliberation with the patients and allow them more involvement in the decision making around childbirth
3. That further studies be conducted on the association between shared decision making and outcomes of care during childbirth.

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APPENDICES

Appendix 1A- Participant Consent Form- English

RESEARCH TITLE: PATIENTS' PERSPECTIVE OF SHARED DECISION MAKING AT CHILDBIRTH AND ASSOCIATION WITH OUTCOMES IN MATERNITY UNITS IN KISUMU COUNTY, KENYA

Principal Researcher:

Dr Caesar Bitta

Supervisor:

Dr Ben Ngoye

Introduction

My name is Dr Caesar Bitta and I am carrying a study to find out the perspectives of patients on the clinician decision making process in the maternity units of public hospitals in Kisumu county and if those perspectives have an association with patient characteristics and the outcomes of the patients' care.

I will request you to complete a questionnaire that will collect some of your personal characteristics, the characteristics of the maternity unit/ ward and then some questions to assess your perspective of the decision making process during your care in the unit. One of my research assistants or myself were available to offer any clarifications you may need as you complete the questionnaire, but we will not influence how you answer the questions.

The study will not in any way influence how you are treated or managed by the team in the maternity unit.

The study has been authorised by Strathmore University Institutional Ethics Review Committee and also licenced by the National Council for Science, Technology and Innovation (NACOSTI). We will not in any way influence the treatment planned for you by the team taking care of you.

It is my hope and that of my supervisor that the results of this study were used to improve the care and treatment of patients at the maternity units in Kisumu County as well as across the country.

We would be grateful if you would consider taking part in this study.

Voluntary participation: Your involvement in this study is purely voluntary. You are not obliged to take part and you can pull out at any stage. I will not collect any data that can be used to identify you individually. You are completing the questionnaire after completing your care in the maternity unit.

Benefits: You will not directly benefit from this study. The results of the study were used to help inform and improve the decision making process for mothers admitted for childbirth in maternity units in the county, country and the region.

Risks: There are no risks involved in taking part in this study and there was no interventions to which you may be exposed

Confidentiality of data: All data collected during this study were kept private. All data were kept in a secure location only accessible to the research team.

Use of data will only be for the study

Further information: Should you require further information; you can access it through the principal investigator or through the Strathmore University Institutional Ethics Review Committee at the contacts listed below.

Principal Investigator: Dr Caesar Bitta.

Tel: 0713087575.

Email: cbittas@gmail.com

Strathmore University Institutional Ethics Review Committee Tel: +254 (0) 703 034158

Email: ethicsreview@strathmore.edu

I agree to take part in the study entitled "Patients' perspective of shared decision making, association with patient characteristics and correlation with outcomes in maternity units in Kisumu County

This study has been explained to me by the principal investigator/ research assistants. I have also been assured that all data collected were held in confidentiality and used exclusively for purposes of this study

Sign _____ Date _____

Thumb print _____ Date _____

Researcher _____ Date _____

Study copy	
Participant copy	

Appendix 1B: Participant's Consent Form- Swahili translation
FOMU YA IDHINI YA MSHIRIKI

KICHWA CHA UTAFITI:

MTAZAMO WA WAGONJWA WA MAAMUZI YA PAMOJA WAKATI WA KUJIFUNGUA NA USHIRIKIANO ULIOPO NA MATOKEO YA KUJIFUNGUA KATIKA VITENGO VYA UZAZI KATIKA KAUNTI YA KISUMU, KENYA

Mtafiti Mkuu:

Dkt Caesar Bitta

Msimamizi wa mtafiti:

Dkt Ben Ngoye

Utangulizi

Jina langu ni Daktari Caesar Bitta na nia yangu ni kufanya utafiti kwa nia na kuchunguza mtazamo wa wagonjwa juu ya mpangilio wa uamizi wa pamoja na waaguzi/ wakunga/ madaktari wao wakati wa kujifungua katika vitengo vya uzazi vya uma vilivyo kaunti ya Kisumu na vile vile iwapo kuna uhusiano wowote kati ya mtazamo wa wagonjwa hao na sifa za wagonjwa hao ama matokeo vya uzalishaji wao.

Ninakuomba unijazie dodoso/ fomu ambayo itakusanya sifa zako za kibinafsi, sifa za kitengo cha uzazi uliomo halafu maswali kadhaa kuhusu mtazamo wako. Mimi ama mmoja wapo wa wasaidizi wa utafiti huu atakuwepo pamoja nawe na tutaweza kukufafanulia maswali yeyote ambao ungependa kufafanuliwa, lakini hatutakushawishi vyovyote.

Utafiti huu hauta shawishi matibabu wako wala vile utahudumiwa na wahudumu wa afya kw kitengo cha uzazi.

Utafiti huu umeidhinishwa na Kamati ya Maadili ya Taasisi cha Chuo Kikuu cha Strathmore pamoja na Baraza la Taifa la Sayansi, Teknolojia na Ubunifu (NACOSTI). Hatuta kwa vyovyote shawishi mpangilio wa matibabu wako.

Ni matarijio yangu, pamoja na msimamizi wangu, kuwa matokeo ya utafiti huu yatatumika kuboresha matibabu ya wagonjwa wanaojitokeza kuhudumiwa katika vitengo vya uzazi katika kaunti ya Kisumu, na hata kote nchini Kenya.

Tutakuwa na shukrani kuu iwapo utakubali kushiriki katika utafiti huu.

Ushiriki wa hiari

Ushiriki katika utafiti huu ni wa hiari. Huajibiki kushiriki katika utafiti huu na una uhuru wa kujiondoa kutoka kwa utafiti saa yoyote utakayo. Hatutakusanya data yoyote ambayo yawezatumika kukutambua. Dodoso lenyewe utalijaza baada ya kumaliza kupata huduma za kitengo cha uzalishaji.

Faida

Utafiti huu hautakupa faida za kibinafsi. Walakini, matokeo ya utafiti huu yatatumika kuboresha mbinu za kufanya maamuzi kwa wamama wanaolazwa kwa ajili ya kujifungua.

Hatari

Utafiti huu hauna hatari au madhara yoyote na hakutakuwa na hatua za matibabu ambazo utafiti huu utaongeza kwako

Usiri wa data

Data zote ambazo zitakusanywa, zitawekwa kwa usiri, kwa mahali penye usalama.

Data itatumika kwa ajili ya utafiti huu pekee

Maelezo Zaidi

Iwapo unahitaki maelezo zaidi, unaweza waasiliana na mtafiti mkuu au Kamati ya Maadili ya Taasisi cha Chuo Kikuu cha Strathmore kwa anwani zilizopo hapo chini.

Mtafiti Mkuu: Dkt Caesar Bitta.

Nambari ya simu 0713087575.

Barua pepe: cbittas@gmail.com

Kamati ya Maadili ya Taasisi cha Chuo Kikuu cha Strathmore

Nambari ya simu : +254 (0) 703 034158

Barua pepe: ethicsreview@strathmore.edu

Nimekubali kushiriki katita utafiti huu uitwao “mtazamo wa wagonjwa wa maamuzi ya pamoja wakati wa kujifungua na ushirikiano uliopo na matokeo ya kujifungua katika vitengo vya uzazi katika kaunti ya Kisumu, Kenya”

Nimeelezwa na kufafanuliwa juu ya utafiti huu na mtafiti mkuu/ wasaidizi wa utafiti. Pia nimehakikishiwa kuwa data itakayokusanywa itawekwa salama na kutumika kwa utafiti huu pekee.

Sahihi _____ Tarehe _____

Alama ya kidole _____ Tarehe _____

Mtafiti _____ Tarehe _____

Study copy	☐
Participant copy	☐

Appendix 1C: Participant Consent Form- Dholuo translation

NYING NONRO : Pach jotuo kaluwore kod ng'ado rieko e sama inyuolo nyathi mabende otenore kod weche mawuok e kar nyuol manitie e county mar Kisumu mantiere e Kenya.

Jatend Nonro : Laktar Caesar Bitta

Nying ng'at matayo nonro:

Laktar Ben Ngoye.

Weche motelo:

Nyinga en laktar Caesar Bitta to atimo nonro mondo arang' godo pach jotuo e sama ng'at machiwo thieth dwaro mondo ong'ad rieko e kar nyuol mag sirikal mantiere e county ma Kisumu to kod kaponi wechego otudore kod timbe mag jotuo to kod gik mawuok koa kuom rit ma imiyo jotuo.

Abiro kwayi mondo iduok penjo mondiki mabende biro choko wecheni makikende, kaka kama inyuole chal/ kar thieth ma ininde/ kod penjo moko mondo oyud godo pachi e okang' mar ng'ado rieko e seche ma imiyi thieth e kar thieth . Achiel kuom jotim nonro makonya kata mana an abiro betie mondo waket ler ma inyalo dwaro e seche ma indiko duoko mag penjo , to ok wabi miyi pachwa eyo ma iduoko godo penjogo.

Nonro okbi ketho e yo moro amora kaka imiyi thieth kata kaka itimoni gik moko kod kanyakla mantie kama inyuole.

Nonro osepuodhi kod komiti ma rango nonro mar mbalariany ma strathmore to kendo omiye barua kod jokanyo majosayansi, joteknologia kod jorieko (NAKOSTI) ok wabi ketho e yo moro amora thieth ma ochanni kod kanyakla mamiyi rit mar thieth

En genowa kod mano mar ng'ata ma tayo nonro ni duoko mag nonroni ibiro tigodo mondo oting' malo rit kod thieth mag jotuo manitie e kuonde ma inyuolie manitiere e county ma Kisumu to ko jodak a aluora mar piny mangima.

Wabiro goyo erokamano kaponi ikawo okang' mondo ibedie enonroni.

Bedo enonro maonge Achune

Bedo mari enonroni en maonge achune e yo maler. Ok ochuni mondo ibed e nonro kendo inyalo wuok e okang' moro amora. Ok abi choko wach moro amor ama inyalo tigodo mondo ofwenyi godo in iwuon. Indiko duoko mag penjo bang' ka isetieko rit mari mar thieth e kanyo ma inyuole.

Ohala: Ok ibi yudo ohala ma oriere tir koa e nonroni.

Duoko mowuok e nonroni ibiro tigodo mondo okony ekelo ng'enyo kendo biro ting'o malo paro e sama ing'ado rieko ne mon ma orwaki nikech wach nyuol e kuonde nyuol mantiere e county, piny kod aluora

Rach: Onge rach mayudore nikech betie nonroni to kendo onge gima ibiro tim mamiyo iyelo wecheni mopondo.

Maling'ling' mag weche mochoki; Weche duto ma ochoki enonroni ibiro keto maling'ling'.Weche duto maochoki ibiro kan kama orit maber ma inyalo donje mana gi kanyakla mar jotim nonro kende.

Tich mar weche mochoki biro bet manya mar nonro kende.

Weche momedore: Kaponi idwaro ng'eyo weche mamoko momedore, to inyalo yude kokalo kuom Jatend nonro kata kokalo kuom komiti ma rango nonro mar mbalariany ma Strathmore ekar tudruok manitie mwalo.

Jatend nonro: Laktar Caesar Bita

Namba mar simu; 0713087575

Mbui ; cbittas@gmail.com

Kamati marango nonro mar mbalariany mar strathmore

Namnba mar simu; +2540703034158

Mbui; ethicsreveiew@strathmore.edu

Ayie mar bet enonro miluongo: "Pach jotuo kaluwore kod ng'ado rieko e sama inyuolo nyathi ma otenore kod weche mawuok e kar nyuol mantie e county ma Kisumu.

Nonro ni oselerna kod jatend nonro/Jok makonyo e kar nonro . Bende osesingna ni weche duto ma ochoki ibiro tigodoe yo maling'ling' kendo itiyo godo mana nikech weche mag nonroni kende.

Seyi ---------- Tarik ----------

Randhany ---------- Tarik ----------

Jatim nonro ---------- Tarik ----------

Gima ondiki mar nonro

Gima ondiki mar jochiwre

Appendix 2: Data Collection Tool- English

(Adapted from SDM-Q-9)

RESEARCH TITLE: "Patients' perspective of shared decision making at childbirth and association with outcomes in maternity units in Kisumu county, Kenya"

DATA COLLECTION TOOL (Modified SDM-Q-9 Tool)

SERIAL NUMBER_____

PART ONE: SOCIODEMOGRAPHIC CHARACTERISTICS

AGE_____ YEARS

Where do you live? _____

Maternity facility where you were admitted/ attended to_____

What is your highest level of education?

Choose the appropriate answer	Tick
Did not complete Primary School	
Completed Primary School	
Completed Secondary School	
Completed College/ University/ Institute/ Polytechnic	
Completed Master's degree and higher qualification	

Who is the clinician who primarily offered me the childbirth care in the maternity unit?

	Tick
Nurse/ midwife	
Clinical officer	
Medical Officer	

Consultant	
I am not sure of his/her cadre	

Please indicate which health service you were seeking when you came to the maternity unit for care/ for admission.

Please indicate what decision was made regarding your care

Decision made regarding my delivery/ care was:	**Tick**
Allowed to proceed and have a normal delivery	
Induction of labour/ augmenting of labour	
That I needed a caesarean section	
I was referred from/ to another facility for care/delivery	

The following are nine statements related to the decision making during your care process in the maternity unit. For each statement please indicate how much you agree or disagree.

1. My clinician made clear that a decision needs to be made.

☐ completely disagree ☐ strongly disagree ☐ somewhat disagree ☐ somewhat agree

☐ strongly agree ☐ completely agree

2. My clinician wanted to know exactly how I want to be involved in making the decision

☐ completely disagree ☐ strongly disagree ☐ somewhat disagree ☐ somewhat agree

☐ strongly agree ☐ completely agree

3. My clinician told me that there are different options for me to have childbirth

☐ completely disagree ☐ strongly disagree ☐ somewhat disagree ☐ somewhat agree

☐ strongly agree ☐ completely agree

4. My clinician precisely explained the advantages and disadvantages of the childbirth options.

☐ completely disagree ☐ strongly disagree ☐ somewhat disagree ☐ somewhat agree

☐ strongly agree ☐ completely agree

5. My clinician helped me understand all the information that he/she shared with me.

☐ completely disagree ☐ strongly disagree ☐ somewhat disagree ☐ somewhat agree

☐ strongly agree ☐ completely agree

6. My clinician asked me which option of childbirth I prefer.

☐ completely disagree ☐ strongly disagree ☐ somewhat disagree ☐ somewhat agree

☐ strongly agree ☐ completely agree

7. My clinician and I thoroughly weighed the different options of childbirth.

☐ completely disagree ☐ strongly disagree ☐ somewhat disagree ☐ somewhat agree

☐ strongly agree ☐ completely agree

8. My clinician and I selected a treatment option together.

☐ completely disagree ☐ strongly disagree ☐ somewhat disagree ☐ somewhat agree

☐ strongly agree ☐ completely agree

9. My clinician and I reached an agreement on how to proceed.

☐ completely disagree ☐ strongly disagree ☐ somewhat disagree ☐ somewhat agree

☐ strongly agree ☐ completely agree

The following are five questions/ statements regarding the outcome of your care in the maternity unit:

1. What was the outcome of your care in the maternity unit?

Outcome	Tick
Normal delivery	
Induction and augmentation	
Caesarean section	
Stillbirth/ loss of foetus	
Referral to another facility	

2. Did you have any other complications during the childbirth?

	Tick
Excessive bleeding	
Infection	
Prolonged stay in the unit	
Others	

3. If you responded as having other complications, please list them below

_____

_____

_____

4. Overall, I am satisfied with the level of care that I received in the maternity unit during childbirth.

☐ completely disagree ☐ strongly disagree ☐ somewhat disagree ☐ somewhat agree

☐ strongly agree ☐ completely agree

5. Overall, I am satisfied with the decision making process of the clinician(s) who attended to me in the maternity unit.

☐ completely disagree ☐ strongly disagree ☐ somewhat disagree ☐ somewhat agree

☐ strongly agree ☐ completely agree

Appendix 2B: Data Collection Tool- Swahili Translation

KICHWA CHA UTAFITI: "Mtazamo wa wagonjwa wa kufanya maamuzi ya pamoja wakati wa kujifungua na kushirikiana na matokeo katika vitengo vya uzazi katika kaunti ya Kisumu, Kenya

ZANA YA UKUSANYAJI WA DATA

NAMBARI_____

SEHEMU YA KWANZA: SIFA ZA KIBINAFSI

Umri wako ni miaka mingapi?_____

Unaishi wapi? _____

Umelazwa katika kitengo kipi cha uzazi? _____

Kiwango chako cha juu ya elimu ni kipi**?**

Chagua jibu linalo faa	**Tiki**
Sikumaliza shule ya msingi	
Nilimaliza shule ya msingi	
Nilimaliza shule ya upili	
Nilimaliza chuo/ chuo kikuu	
Nina shahada kuu	

Ni mhudumu yupi wa afya alisimamia uzalishaji wangu?

	Tiki
Muuguzi/ mkunga	
Afisa wa kliniki	
Daktari	
Daktari mtaalamu	
Sina uhakika	

Ni huduma gani ulitarajia kupata ulipolazwa/ iliofanya ulazwe?

Tafadhali onyesha uamuzi uliofanywa kuhusu uzalishaji wako

Uamuzi uliofanywa kuhusu uzalishaji wangu ulikuwa	**Tiki**
Nulikubaliwa kujifungua kwa njia ya kawaida	
Kuanzishwa kwa maumivu ya leba/ kuharakishwa kwa uzalishaji	
Kuzalishwa kwa upasuaji	
Nilitumwa kwa kitengo kingine cha uzazi	

Sentensi zifuatazo zinalingana na ufanyaji wa maamuzi ulipokuwa unapokea huduma kwa kitengo cha uzalishaji. Tafadhali dokeza kiwango ambacho unakubaliana au kutokubaliana na sentensi yenyewe.

1. Mhudumu wa afya aliyenihudumia alinieleza kuwa kuna uamuzi unaofaa kufanywa juu ya uzalishaji wangu.

☐ sikubaliani kabisa ☐ sikubaliani kwa nguvu ☐ sikubaliani ☐ nakubaliana

☐ nakubaliana kwa nguvu ☐ nakubaliana kabisa

2. Mhudumu wangu wa afya alitaka kujua vile ningependa kuhusishwa katika uamuzi wa uzalishaji wangu

☐ sikubaliani kabisa ☐ sikubaliani kwa nguvu ☐ sikubaliani ☐ nakubaliana

☐ nakubaliana kwa nguvu ☐ nakubaliana kabisa

3Mhudumu wangu wa afya alinieleza kuwa kuna mbinu tofauti za uzalishaji

☐ sikubaliani kabisa ☐ sikubaliani kwa nguvu ☐ sikubaliani ☐ nakubaliana

☐ nakubaliana kwa nguvu ☐ nakubaliana kabisa

4. Mhudumu wangu wa afya alinieleza mazuri na yasiyo mazuri katika kila mbinu ya uzalishaji.

☐ sikubaliani kabisa ☐ sikubaliani kwa nguvu ☐ sikubaliani ☐ nakubaliana

☐ nakubaliana kwa nguvu ☐ nakubaliana kabisa

5. Mhudumu wangu wa afya alinisaidia kuelewa alichonijulisha

☐ sikubaliani kabisa ☐ sikubaliani kwa nguvu ☐ sikubaliani ☐ nakubaliana

☐ nakubaliana kwa nguvu ☐ nakubaliana kabisa

6. Mhudumu wangu wa afya aliniuliza mbinu ya uzalishaji ambayo naegema/ napenda

☐ sikubaliani kabisa ☐ sikubaliani kwa nguvu ☐ sikubaliani ☐ nakubaliana

☐ nakubaliana kwa nguvu ☐ nakubaliana kabisa

7. Mimi na mhudumu wangu wa afya tulijadili kwa kina mbinu za uzalishaji

☐ sikubaliani kabisa ☐ sikubaliani kwa nguvu ☐ sikubaliani ☐ nakubaliana

☐ nakubaliana kwa nguvu ☐ nakubaliana kabisa

8. Mimi na mhudumu wangu wa afya kwa pamoja, tulichagua mbinu ya uzalishaji

☐ sikubaliani kabisa ☐ sikubaliani kwa nguvu ☐ sikubaliani ☐ nakubaliana

☐ nakubaliana kwa nguvu ☐ nakubaliana kabisa

9. Mimi na mhudumu wangu wa afya tuliafikiana vile tunafaa kuendeleza huduma yangu

☐ sikubaliani kabisa ☐ sikubaliani kwa nguvu ☐ sikubaliani ☐ nakubaliana

☐ nakubaliana kwa nguvu ☐ nakubaliana kabisa

The following are five questions/ statements regarding the outcome of your care in the maternity unit:

1. Ni matokeo gani uliyopata baada ya kuhudumiwa?

Matokeo	Tiki
Kujifungua kwa kawaida	
Kuongezwa uchungu au kuanzishwa	
Kuzalishwa kwa upasuaji	
Kupoteza mtoto	

Kutumwa kwa hospitali nyingine kujifungua	

2. Je ulikuwa na matatizo zozote wakati wa kujifungua?

	Tick
Kuvuja damu kwa wingi	
Maambukizi	
Kukaa kwa muda mrefu	
Matatizo mengine	

3. Yataje matamizo mengine kama ulikuwa nazo

_____

_____

_____

4. Kwa ujumla nimefurahishwa na huduma nilizopata.

☐ sikubaliani kabisa ☐ sikubaliani kwa nguvu ☐ sikubaliani ☐ nakubaliana

☐ nakubaliana kwa nguvu ☐ nakubaliana kabisa

5. Kwa ujumla, nimetoshelezwa na maamuzi ya pamoja wakati wa kujifungua .

☐ sikubaliani kabisa ☐ sikubaliani kwa nguvu ☐ sikubaliani ☐ nakubaliana

☐ nakubaliana kwa nguvu ☐ nakubaliana kabisa

Appendix 2C: Data Collection Tool- Dholuo translation

NYING NONRO: Pach Jotuo kaluwore kod ng'ado rieko esama inyuolo nyathi ma bende otenore kod weche mawuok e kar nyuol mantiere e county ma Kisumu manitie e Kenya.

GIMA ITIYOGODO MONDO OCHOK WECHE

NAMBA: _____

OKANG' MOKUONGO: Wecheni makikende

Hiki: _____ Kar hiki

Idak kanye:_____

Kar nyuol mane ininde / Kama ne okonyie:

Somo mari mabor ogik kanye:

Somo mari mabor ogik kanye?

YIER DUOKO MOWINJORE	ket tick
Ne ok atieko primary	
Natieko primary	
Natieko Secondary	
Natieko kolej/mbalariany/istitution/polytechnic	
Natieko masters kod ranginy mokalo kanyo	

En jachiwo thieth mane mane omiya rit sama anyuol e kama inyuolie?

Jarit jatuo/Jacholo	Ket tick
Ng'at machiwo thieth e klinik	
Laktari	
Daktari ma ipenjo weche	
Ok an gi adiera kuom tije	

Yie indiki kit thieth mane idwaro kane ibiro e kama inyuole mondo orangi/ kata mondo orwaki e wod

Yie inyis rieko mane ong'adni kaluwore kod thieth mari

Rieko mane ong'adi kaluwore kod nyuol mara/rit mar thieth	Ket tick
Noyiena mondo adhi nyime gi yor nyuol mapile	
Nochakna muoch /noket muoch mondo odhi mapiyo piyo	
Ne idwaro mondo adhi e pala	
Ne oora koa /to adhi e kamachielo ne thieth/nyuol	

Mantieregi gin weche ochiko motenore kod ng'ado rieke e seche mag rit mari mar thieth e kar nyuol. Kuom wach ka wach yie indiki ka iyie kata ok iyie.

1. jachiw thieth mara ne owacho maler ni rieko ne dwarore mondo og'adi.

☐ Ok ayie kabisa ☐ adagi gi teko ☐ ok ayie

☐ Ayie ☐ ayie gi teko ☐ ayie kabisa

2. Jachiw thieth mara ne dwaro ng'eyo moriere kaka ne adwaro mondo abedie sama ing'ado rieko.

☐ Ok ayie kabisa ☐ adagi gi teko ☐ ok ayie

☐ Ayie ☐ ayie gi teko ☐ ayie kabisa

3. Jachiw thieth mara nowachona ni nitiere yore mopogore opogore ma anyalo nyuol godo.

☐ Ok ayie kabisa ☐ adagi gi teko ☐ ok ayie

☐ Ayie ☐ ayie gi teko ☐ ayie kabisa

4. Jachiw thieth mara ne olero maber beyo kod richo mag yore mopogore opogore mag nyuol.

☐ Ok ayie kabisa ☐ adagi gi teko ☐ ok ayie

☐ Ayie ☐ ayie gi teko ☐ ayie kabisa

5. Ng’at machiwo thieth mara ne okonya mondo awinj maber weche mane owacho koda

☐ Ok ayie kabisa ☐ adagi gi teko ☐ ok ayie

☐ Ayie ☐ ayie gi teko ☐ ayie kabisa

6. Ng’at machiwo thieth mara nopenja yo mar nyuol mane berna

☐ Ok ayie kabisa ☐ adagi gi teko ☐ ok ayie

☐ Ayie ☐ ayie gi teko ☐ ayie kabisa

7. Ng’at machiwo thieth mara kod an ne opimo e yo maler yore mogore opogore mag nyuol.

☐ Ok ayie kabisa ☐ adagi gi teko ☐ ok ayie

☐ Ayie ☐ ayie gi teko ☐ ayie kabisa

8. Ng’at machiwo thieth mara kod an ne oyiero yo mar thieth kanyakla.

☐ Ok ayie kabisa ☐ adagi gi teko ☐ ok ayie

☐ Ayie ☐ ayie gi teko ☐ ayie kabisa

9. Ng’at machiwo thieth mara kod an ne ochopo e winjruok e yo mane idhi luw.

☐ Ok ayie kabisa ☐ adagi gi teko ☐ ok ayie

☐ Ayie ☐ ayie gi teko ☐ ayie kabisa

Magi gin penjo abich/weche kaluwore kod duoko mar rit mari mar thieth e kar nyuol.

1. Duoko mari mar thieth mari e kar nyuol ne ang’o

Duok	Ket Tick
Yor nyuol mapile	
Chako muoch/keto muoch madhi mapiyo piyo	
Pala	
Nyathi notho eich/ich nowuok	
Ne oora ekar thieth machielo	

2. **Bende ne ibet kod chandruok machielo e seche mane inyuol?**

	Ket Tick
Chuer mar remo momuomre	
Tuo	
Dak ma alanda e kar thieth	
Mamoko	

3. Kaponi ichiwo duoko ni ne in kod chandruok mamoko to ndikgi piny ka _____

4. Duto kuom duto, ayie kod rang'ing mar thieth mane ayude kama inyuole e seche mane anyuol.

☐ Ok ayie kabisa ☐ adagi gi teko ☐ ok ayie

☐ Ayie ☐ ayie gi teko ☐ ayie kabisa

5. Duto kuom Duto Ayie kod okang' mar ng'ado rieko mar jachiw thieth/jochiw thieth mane okonya e kar nyuol.

☐ Ok ayie kabisa ☐ adagi gi teko ☐ ok ayie

☐ Ayie ☐ ayie gi teko ☐ ayie kabisa

Appendix 3: Institutional Ethical Research Committee Approval

Strathmore UNIVERSITY

3rd November 2023

Dr Bitta Caesar Ochieng',
caesar.bitta@strathmore.edu

Dear Dr Bitta,

RE: Patients' Perspective of Shared Decision-Making at Childbirth and Association with Outcomes in Maternity Units in Kisumu County, Kenya

This is to inform you that SU-ISERC has reviewed and **approved** your above SU-masters research proposal. Your application reference number is **SU-ISERC1875/23.** The approval period is from **3rd November 2023 to 2nd November 2024.**
This approval is subject to compliance with the following requirements:

i. Only approved documents including (informed consents, study instruments, MTA) will be used.
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 72 hours of notification.
iv. Any changes anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 72 hours.
v. Clearance for the export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to the expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days of completion of the study to SU-ISERC.

Before commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) https://research-portal.nacosti.go.ke/ and obtain other clearances needed.

Yours sincerely,

Mr Ambrose Rachier,
Chairperson; SU-ISERC

Ole Sangale Rd, Madaraka Estate. PO Box 59857-00200, Nairobi, Kenya. Tel +254 (0)703 034000
Email admissions@strathmore.edu www.strathmore.edu

Appendix 4: National Council for Science, Technology and Innovation Approval

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **131367**

Date of Issue: **10/November/2023**

RESEARCH LICENSE

This is to Certify that Dr.. Caesar Bitta of Strathmore University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Kisumu on the topic: PATIENTS' PERSPECTIVE OF SHARED DECISION MAKING AT CHILDBIRTH AND ASSOCIATION WITH OUTCOMES IN MATERNITY UNITS IN KISUMU COUNTY, KENYA for the period ending : 10/November/2024.

License No: **NACOSTI/P/23/31318**

131367

Applicant Identification Number

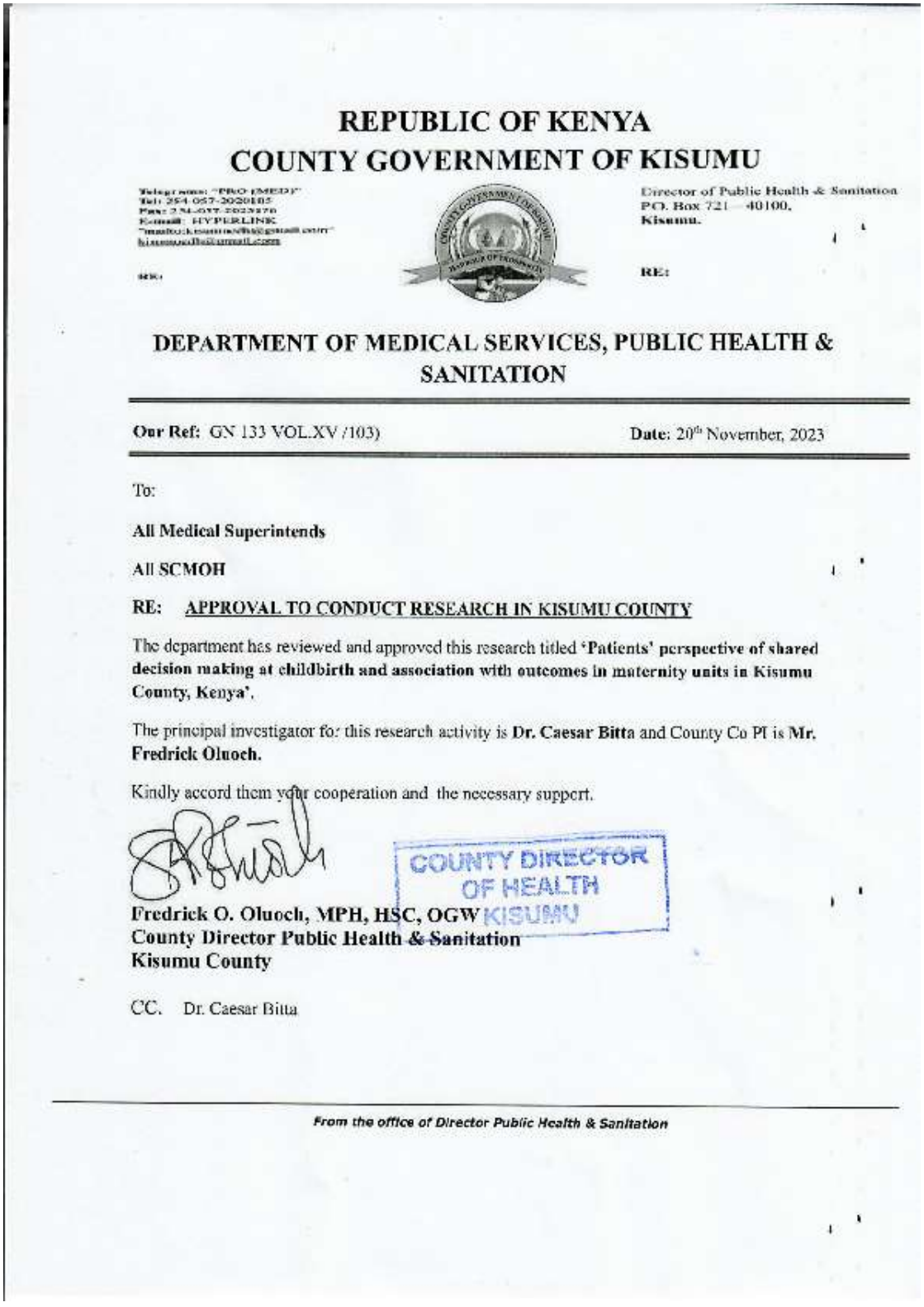
Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

See overleaf for conditions

Appendix 5: Authorisation by the Department of Health, County Government of Kisumu



REPUBLIC OF KENYA

COUNTY GOVERNMENT OF KISUMU

Telegrams: "PHO (MED)"
Tel: 254-057-2020185
Fax: 254-057-2023576
E-mail: HYPERLINK
"mailto:kisumuhealth@gmail.com"
kisumuhealth@gmail.com

Director of Public Health & Sanitation
P.O. Box 721 – 40100,
Kisumu.

RE:

DEPARTMENT OF MEDICAL SERVICES, PUBLIC HEALTH & SANITATION

Our Ref: GN 133 VOL.XV /103)

Date: 20th November, 2023

To:

All Medical Superintends

All SCMOH

RE: APPROVAL TO CONDUCT RESEARCH IN KISUMU COUNTY

The department has reviewed and approved this research titled **'Patients' perspective of shared decision making at childbirth and association with outcomes in maternity units in Kisumu County, Kenya'.**

The principal investigator for this research activity is **Dr. Caesar Bitta** and County Co PI is **Mr. Fredrick Oluoch.**

Kindly accord them your cooperation and the necessary support.

COUNTY DIRECTOR OF HEALTH KISUMU

Fredrick O. Oluoch, MPH, HSC, OGW
County Director Public Health & Sanitation
Kisumu County

CC. Dr. Caesar Bitta

From the office of Director Public Health & Sanitation