DILEMMAS OF USING TRADITIONAL INFERTILITY REMEDIES AMONG CLIENTS SEEKING INFERTILITY WORKUP IN URBAN DAR ES SALAAM

Regina Joseph

MA (Health Policy and Management).Dissertation
Muhimbili University of Health and Allied Sciences,
October 2016.

DILEMMAS OF USING TRADITIONAL INFERTILITY REMEDIES AMONG CLIENTS SEEKING INFERTILITY WORKUP IN URBAN DAR ES SALAAM

By

Regina Joseph

A Dissertation Submitted in (Partial) Fulfillment of the Requirements for the Degree of Master of Arts (Health Policy and Management) of Muhimbili University of Health and Allied Science,

Muhimbili University of Health and Allied Sciences.
October, 2016.

CERTIFICATION

The undersigned certifies that he has read and hereby recommend for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled ***Dilemmas of using traditional infertility remedies among clients seeking infertility workup in urban Dar es salaam***, In (Partial) Fulfillment of the requirements for the degree of Master of Arts In Health Policy and Management of Muhimbili University of Health And Allied Sciences.

_____

Prof A.D.Kiwara

(Supervisor)

Date:_____

DECLARATION AND COPYRIGHT

I, **Regina Joseph** declare that this **dissertation** is a result of my own work and has neither been presented nor be presented to any other University /Institution for similar or any other degree award.

Signature---------- Date----------

ACKNOWLEDGEMENT

In a special manner I would like to extend my sincere gratitude to all Organizations, Institutions, infertility clients and individual staffs at the School of Public Health and Social Sciences that have provided advice and information to the completion of this report.

My heartfelt thanks to Prof A.D.Kiwara for the supportive supervision from proposal development to the final research completion.

Special appreciation goes to my beloved husband Mr Richard Mujuni Katiti for his financial and moral support as without him the completion of this work would not have been possible.

Lastly but not least I would like to extend my peculiar thanks to my lovely children Rechal, Rembert and Rebecca for their positive attitudes and tolerance on the time shift and budget constraints.

DEDICATION

I dedicate this work to my beloved mom Mrs. Veronica Joseph for her spiritual support.

ABSTRACT

Infertility is a serious but largely neglected public health problem in resource-poor countries such as Tanzania.

Perceptions on the causes and treatments of infertility vary across societies. A wide array of treatments including conventional therapy, traditional remedies, ineffective or even harmful intervention has been used in managing infertility. The infertile client in urban Dar es salaam use traditional infertility remedies in managing infertility problem. The used remedies contained unknown constituents. Unregulated or inappropriate use of traditional medicines and practices could have negative or dangerous effects.

The objective of this study was to assess the dilemmas of using traditional infertility remedies among clients seeking infertility workup in urban Dar es salaam.

This was a case study design in which triangulation of methodologies has been used. A combination of qualitative and quantitative methodologies was used. In the qualitative part, in-depth interviews were conducted with Regulatory Authorities, traditional healers and 9 key informants who were purposively selected. A steps model for qualitative data analysis was used. Data were analyzed to generate the qualitative results. While in the quantitative approach, direct observation, questionnaire fillings and snowball technique was used in collecting data from infertile clients. A total of 167 infertile clients aged 18-44 years at 10 health facilities were conveniently selected and interviewed, then the data were analyzed by statistical Package for the Social Sciences (SPSS) Version 16.0)

From this research it was found that out of 167 infertile couple interviewed, 107(64.1%) have used traditional infertility remedies as a means of fighting the infertility problem from which16(15%) obtained the remedies from relatives (a related person who knew the remedies) while 52(49%) got it from traditional healers and 39(36%) obtained the remedies from both traditional healers and relative .Remedies in form of liquid and powder were the mostly utilized (43.9%) while taboo and piece of paper with Arabic words were least used (1.9%). Statistical significant factor (p-value < 0.05) that influence the use of traditional infertility remedies were Age group, infertility duration and availability of traditional healer .The safety and efficacy of the consumed traditional infertility remedies were of

doubtfully. The traditional remedies obtained from neither traditional healer nor relatives were not officially registered hence the infertile client utilize on their own risk.

Conclusion and Recommendations

The traditional infertility remedies was widely used within the society , Drug Regulatory Authority should advocacy on community awareness on causes and systematic infertility management to protect the public health, Strengthening the Health Policy on the issues of Standardization, Controlling and Monitoring of safety and efficacy of Traditional infertility remedies for future public health to protection is of paramount Moreover Traditional healer and relevant stakeholders(upon their proprietary right) should provide relevant information to the Regulatory Authority based on the plant particularity that are used and claimed for infertility, so that scientific and clinical validation can be applied to prove the safety and effectiveness of a therapeutically product.

CONTENTS

LIST OF ABBREVIATIONS

ART-Assisted Reproductive Technologies.

IVF-In vitro fertilization or fertilization

MHCDGEC- Ministry of Health, Community Development, Gender, Elderly and Children.

TFDA- Tanzania Food and Drug Regulatory Authority.

TIR- Traditional Infertility Remedies.

TR- Traditional Remedies.

DEFINITION OF KEY TERMS

Infertility; is a condition where by a couple fails to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse.

Traditional medicine/remedies. Traditional medicine is the sum total of the knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness.

Institutional infertility clinics, medical clinics that assist couples, and sometimes individuals, who want to become parents but for medical reasons have been unable to achieve this goal via the natural course. Clinics apply a number of diagnosis tests and sometimes very advanced medical treatments to achieve conceptions and pregnancies.

Complementary/alternative medicine (CAM)

The terms "complementary medicine" or "alternative medicine" are used inter-changeably with traditional medicine in some countries. They refer to a broad set of health care practices that are not part of that country's own tradition and are not integrated into the dominant health care system.

Herbal medicines

Herbal medicines include herbs, herbal materials, herbal preparations and finished herbal products that contain as active ingredients parts of plants, or other plant materials, or combinations.

Dilemmas is a situation in which a difficult choice has to be made between two or more alternatives, especially equally undesirable ones, for the purpose of this study looking at dilemmas in safety and use of infertility traditional remedies.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Back ground.

Infertility is a condition where by a couple fails to achieve clinical pregnancy after 12 months or more of regular unprotected sexual intercourse (1& 2). Around the world 12% of couples have difficulties in conceiving a child at some point in their lives that is 50-80 million people are affected(5). Approximately 10% of married couples in the United States experience difficulty in conceiving over a year's time and about 1.26 million women receive medical advice or treatment for impaired fertility in a given year. The lifetime incidence of infertility is estimated to be between10% and 17%. Some studies showed that, 17.6% of women aged 20–54 had experienced involuntary childlessness(6)

One in every four couples in developing countries had been found to be affected by infertility (WHO, 1990). Overall burden of infertility in women from 190 countries has remained similar in estimated levels and trends from 1990 to 2010 (19& 20).Infertility is usually not the natural state of a healthy adult organism especially in humans. It may be described as a woman who is unable to conceive as well as being unable to carry a pregnancy to full term.

Infertility is often thought of as a female concern, however, both women and men can have problems that cause infertility; it affects the social, economic and psychological wellbeing of a couple. There are many anatomical or diseases associated factors that cause infertility, including some that medical intervention can treat. Age is a known factor that is associated with infertility in women.(7)

Different arrays of treatments have been applied in managing infertility. These include conventional, non-conventional or traditional. Other approaches are even ineffective and dangerous. Because of the expenses associated with assisted reproductive technologies, such as In-vitro Fertilization (IVF), some infertile couples may turn to complementary or alternative medicine in an attempt to become pregnant using treatment that they may perceive as being of lower cost, safer, or more effective. More over the infertile client are

in dilemma in a sense that, the attempt in managing infertility problem may have negative health consequences in future.

Traditionally, in Tanzania the Maasai society has developed culturally accepted solutions to infertility. If a woman did not conceive, her husband often permitted her to have sexual relationships with other men. Sometimes she went on a special journey for this purpose. If the woman conceived, the children were regarded as her husband's children. Recently, people are realizing more and more that this traditional solution can lead to health problems, such as HIV. Couples are therefore looking for safer solutions to overcome infertility (21& 8).

According to Tanzania's National Health Policy of 2007, the Ministry of Health recognizes "the role and contribution of traditional and alternative health care in the health status of Tanzanian people" Now, both traditional and western medicine services are widely accepted, patients are able to choose between the two when in need of medical attention. Practitioners of traditional medicine claim to be able to cure various and diverse conditions including infertility management (37, 38& 39).
WHO had earlier estimated that the usage of traditional medicine in developing countries is 80%.Although little is known about health care seeking process in traditional practices ,In Tanzania 60 to 80% of people use traditional remedies in everyday health care (8).

Moreover, Tanzania Health policy of 2007 and Act No 23 of 2002 of Tanzania parliament also aimed to strengthen and supervise traditional and alternative medicine though modality of quality assurance not well stated, besides this, local traditional remedies users and giver such as those who just know the plant/remedies and could take any time for themselves or give it to their relative who have infertility problem were disregarded (37&33).

Traditional practitioners practice mainly includes the use of plants/plant parts, animal and mineral products .They are likely to be the first consulted health providers due to socio-cultural settings in rural Tanzania. They act as four in one which means one person act as a diagnostic point, prescriber, formulator and dispenser (Muhame MHCDGEC).

Unregulated or inappropriate use of traditional medicines and practices can have negative or dangerous effects. For instance, the herb “Ma Huang” (Ephedra) is traditionally used in China to treat respiratory congestion. In the United States, the herb was marketed as a dietary aid, whose over dosage led to at least a dozen deaths, heart attacks and strokes. (21)

Furthermore in Belgium, at least 70 people required renal transplant or dialysis for interstitial fibrosis of the kidney after taking a herbal preparation made from the wrong species of plant as slimming treatment.(2)

1.1 STATEMENT OF THE PROBLEM

Infertility is a public health problem that affects the social, economic and psychological wellbeing of couples and society at large. However, perceptions on the causes and treatments of infertility vary across societies. A wide array of treatments including conventional therapy, traditional remedies, ineffective or even harmful intervention has been used in managing infertility. More over where infertility is widespread, couples seeking help can place a heavy opportunity cost on the general society. Although little is known about the health care seeking process and practices for specific problems, it is estimated that 60-80% of people in Tanzania use traditional remedies to manage their ill heath including infertility management.

Researches done in rural Kilimanjaro show that out of 56% of people followed up and reported to have used traditional remedies 11% were using these remedies for infertility management. Despite impressions that traditional remedies are widely used. Specific studies on the use of traditional remedies in managing infertility in the urban set up are few.

This study therefore sets out to explore factors in an urban set up that are associated with the use of traditional remedy for infertile couples, the source of those traditional remedies, the commonly used traditional infertility remedies and the dilemmas in the safety and efficacy of the used traditional infertility remedies.

1.2 RESEARCH QUESTIONS

1. What is the magnitude of traditional infertility remedies users among the infertility clients attending the infertility workup in urban Dar es salaam?
2. Where does infertile individuals/ couple obtain those traditional infertility remedies?
3. What factors influence the use traditional infertility remedies among the infertility clients?
4. Which plant parts or formulations are commonly used in managing infertility?
5. What criteria do traditional healers and Regulatory authority base on to ensure the safety and efficacy (treatment/therapeutics value) of the remedies in relation to volume and duration of use?

1.3 OBJECTIVES

1.3.1 Broad objective

To assess the use and safety dilemmas of traditional infertility remedies based on population attending the infertility clinics in urban Dar es Salaam.

1.3.2 Specific objectives

1. To examine proportion of infertile couple aged 18 -44 years using traditional remedies for infertility management among the patient attending the infertile clinics in urban settings.

2. To investigate the source of traditional infertility remedies.

3. To investigate factors leading to the use of traditional remedies in management of infertility in urban Dar es salaam.

4. To identify commonly used traditional plant parts or formulations in managing infertility.

5. To explore safety and efficacy criteria for traditional infertility remedies as per Traditional healers and Drug Regulatory Authority Board (TFDA**).**

1.4. RATIONALE OF THE STUDY.

The anticipated influence of the findings from this research is to a help the policy maker on the use of the traditional infertility remedies and their public health effects making a better policy. Since the health policy already recognizes the presence of these remedies and role of traditional medical knowledge in health care provision, this research will consolidate the credibility of the policy further. Such credibility may encourage the TFDA and Ministry of Health, Community Development, Gender, Elderly and Children, through collaborative and networking ventures with traditional healers to deepen our understanding of the remedies and their usefulness in treating infertility.

Furthermore this study will deepen the societal knowledge on traditional infertility remedies in aspects such as that the remedies may have toxic effects when inappropriately used.

CHAPTER TWO

2.1. LITERATURE REVIEW

2.1.1. Introduction.

Infertility is a serious public health problem that affects a significant proportion of humanity**.** Beside the consequences and high rate of infertility burden, the needs of the infertile client have not been addressed systematically. Salient aspects of traditional infertility remedies will be reviewed below.

2.1.2. Use of traditional infertility remedies among infertile couples attending workup clinics.

Although there is limited information available to quantify the use of traditional remedies/ complementary and alternative medicine (CAM), growing evidence suggests that traditional remedies prevalence among patients seeking infertility treatment is increasing worldwide. There are many products available on the market and many infertile patients demand information about traditional remedies from their health care providers. Some of these practices may be potentially harmful for women and community in general(10).

Globally, the use of traditional remedies/CAM by infertile couples or women varies considerably from 12% to 91%. A study among Lebanese women seeking infertility treatment showed that 41% of the women used CAM. Similarly a study in the UK found out that 40% of 400 infertile women had used CAM as a therapy for infertility treatment (11)

A Jordan survey conducted between May and August 2012 report that, the traditional remedies/ for infertility treatment were documented in (44.7%) out of 1021 interviewed. The vast majority of the traditional remedies users were females(12). Meanwhile a cross-sectional study of women attending an infertility clinic at Mulago hospital in Uganda also revealed a wide use of traditional remedies among the infertile clients. Furthermore the results showed that the majority 260 (76.2%) of respondents had used herbal medicines for infertility treatment(11). Likewise an investigation carried out in a rural county in Eastern Turkey in year 2008 among the primary infertile women , showed that105(83%) of the women applied for traditional applications(13).

A study conducted in Abha city showed that 504(36.9%)infertile client have used traditional infertility remedies(14).In Tanzania, researches done in rural Kilimanjaro 2013-2014 showed that, out of 56% of people reported to have used traditional remedies 11% were using these remedies for infertility management(8).By and large alternative medicine is gaining acceptance among the general population(15&16). Although usage is thought to be widespread among patients, few studies have been done.

2.1.3. Source of traditional infertility remedies.

Traditional remedies are part of the cultural and religious life of the African people. Furthermore, this broad use of traditional medicine is attributable to its accessibility and affordability(15&17).

A study conducted in South Africa showed that**,** a substantial number of South African women seek treatment from traditional healers for a variety of complications and disorders associated with the female reproductive and genital organs(18).

A study conducted among patients in herbal clinics in Gucha districts ofKisii County Kenya, showed that, out 167 purposively selected patients relatives had a marked influence on 37.7% of the respondents using herbal medicine while, media also played an important role in creating awareness(19) .

Another study conducted in Urban District (Moshi) in Kilimanjaro Region in2002-2004 showed that, traditional healers were utilized for provision of infertility remedies.(20).Likewise a Survey done 2010 in Shirati within the Tarime District, of the Mara Region in Tanzania justifies the use of traditional infertility remedies from the traditional healers (21).Besides this a study conducted in Kilimanjaro between December 2013 and June 2014 showed that, out of 655 traditional remedies user (68%) reported knowing someone who (relative) frequently used traditional medicines(22).

2.1.4. Factors leading to the use of traditional remedies in management of infertility

In many cultures, having children is an essential part of life, while infertility is seen in much of Sub-Saharan Africa (SSA) as a personal tragedy, with the potential impact to the

entire family or community. It is a dreaded condition that is associated with devastating psychosocial consequences(23&24).

In developing countries, where child-bearing is greatly valued, infertile couples are faced with problems ranging from overt ostracism or divorce to more subtle forms of social stigma leading to isolation and mental distress .The systematic unmet need for infertility control is the most contributory factor towards the use of traditional remedies(11&25).

Several studies have showed that older women, who are better-educated and employed with high incomes, are more likely to use CAM. Addo et al (2008) in Ghana, however, found that under privileged women attending the gynecological clinic were more likely to utilize herbal medications in the management of their infertility (11&23).Meanwhile significant factors found to increase the likelihood of traditional remedies use in Saudi nationality were illiteracy and the place of birth. There was a statistically significant increase in using CAM among participants born in the villages(14).
A study conducted in Uganda showed that, herbal medicine use was associated with the participants' age, level of education, marital status, infertility duration, null parity, duration of marriage and delay of medical care(23).

The failure of conventional remedies is also mentioned as a contributing factor to the use of traditional infertility remedies. As some study justifies, out of 57 of the people that received two or more treatments for their illnesses, 7 patients went to the hospital and 36 went to traditional medicine for their second treatment. A study done in Mara, Tanzania conducted and I quote, *"Patients answered with several reasons for going to a traditional healer. The most common response was that treatment at the hospital did not work and that they went to traditional medicine as a second option"*(21).

2.1.5. Commonly used traditional remedies and forms in managing infertility.

There is no individual herb that is considered specifically to be useful for promoting fertility. Rather, more than 150 different herbs, usually given in complex formulas comprised of 15 or more ingredients, are used in the treatment of infertility (26). The design of the formulas has varied somewhat over the centuries, based on prevailing theories and available resources, however individual practitioners have a preference for

particular herbs, thus accounting for some of the variations among formulas that are used (27).The main materials for the formulations are derived from roots, barks, leaves, flowers, and fruits. The finally used formulas can be converted into liquid, powdered or solid in tablet shape and sometimes packed in attractive conventional containers as the photograph below shows. At other times given in their raw form such as roots.

Picture of packed traditional remedies.

A research conducted in Baham, Cameroon(2009)showed that 46 plant species were prepared as maceration (43%) or decoction (40%) of only one plant (25%) or of the mixture of two (22%), three (28%), four (22%) or even seven (3%) medicinal plants(29).

Meanwhile a study conducted in Jordan 2012 from which the use of infertility remedies found to be relatively high about 1021(44.7%)showed that herbs and spiritual healing are widely used among patients in adjunct to conventional medical interventions(12).

Moreover in South Africa a research on 156 gynecological used medicinal plants, showed that roots are used in 57% of cases to prepare the remedy, leaves in 11% of cases and bark in 9% of cases. Some remedies are pre-scribed by healers as mixtures(28).

Likewise a study conducted in Western Uganda showed that, from the identified medicinal plants, the formulary composition of the traditional infertility remedies consist of shrubs

42.4%, herbs 39.4%, herb climbers and trees18.2%. Leaves (57.6%) were the commonest plant parts used followed by roots (42.1%), barks (27.3%) and the rest of the plant parts have less than 10%.

The common methods of plant medicine preparation included boiling, chewing, pounding, cooking, roasting and smoking. The commonest method of herbal administration was by oral means as food, herbal teas or by mixing in several drinks including locally made beer(29).

A study conducted in 2008, in Muleba district Kagera region in Tanzania also showed that the plant parts used for making herbal preparations included roots, leaves, stem barks, root barks, pods, tubers, sap, fruits and other aerial parts. Among these leaves were most frequently used which encountered by 63.3% out of 49 plant species(30).

2.1.6. Safety assurance of infertility remedies as per Drug Regulatory Authority Board

There is an urgent need for an appropriate system for ensuring safety and efficacy control of the practice as well as in production and use of the traditional infertility remedies so as to rescue the public from dilemma in using traditional infertility remedies.

The traditional /herbal medicinal products are often regarded as safe based on the rationale that they have been derived from natural sources(31).The literature confirms the use of the majority of these plants for the treatment of infertility and illnesses that are associated with it (15&29), globally, most preparations are given orally for approximately 30 days, at an average dosage of two glasses per day. However, other remedies (in different preparation/formulation) are taken orally, topically or insertions at non-uniformity dosage(15).

Regardless of its use, evidence shows that, not all medicinal plants are safe, some are toxic with varying degree. A study conducted in 2012 on the effect of Indian liquorices' which was used and claimed to have fertility effects, showed that the liquorice has harmful effects on the fertility potentials(4).Likewise Details of 156 plants which were used in the treatment of gynecological disorders of women such as infertility, the chemistry analysis

showed that 20 plants were potentially toxic hence they caused paralysis, collapse, heart failure ,hypoglycemia ,hallucination while others led to death(28).

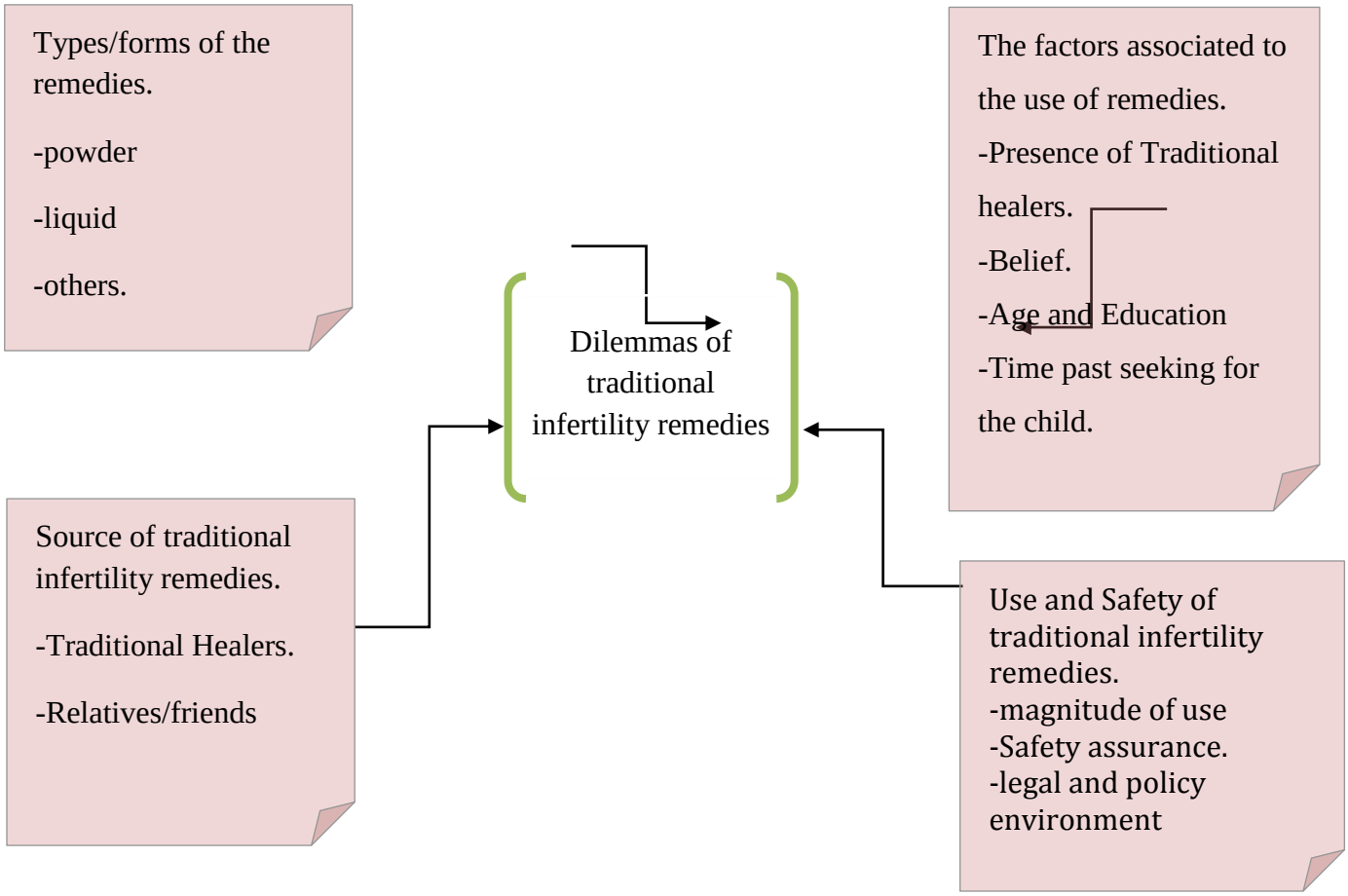
The same plant species have at different concentration of active ingredient at different parts of the plant. (29).This can lead to negative effects in confusion of the same plant but different part. The confusion among the plant name such as vernacular (traditional remedy), use of vernacular name leading to different name in different regions could results into client taking wrong species hence exposure to toxicity. A research conducted in Belgium linked to safety of traditional remedies showed that, at least 70 people required renal transplant or dialysis for interstitial fibrosis of the kidney after taking a herbal preparation made from the wrong plant caused by different names of the same plant. In Cameroon some studies in 2011 showed that most herbal products on the market today have not been subjected to drug approval process to demonstrate their safety and effectiveness(32).

In Tanzania for the purpose of regulating and controlling traditional and alternative medicines, the Tanzanian Parliament enacted Act No. 23 of 2002. Two provisions of this law in which enforcement agencies are mentioned, include the Registrar and the Council of Traditional Medicine (TM) and Complementary and Alternative Medicine (CAM). Quality assurance of traditional and alternative medicine practitioners, services and methods are to be achieved as a result of this Act. However, less has been done so far to design the mechanism of how to ensure quality hence recently practice shows that the infertile client consume the traditional infertility remedies at their own risks(33).

2.2. CONCEPTUAL FRAME WORK

The conceptual frame work showing the dilemmas in terms of use and safety of the traditional infertility remedies and associated factor towards the use of the remedies.

Fig.0.The interaction between dependent and independent variables



The framework depicts the association between dilemmas in traditional infertility remedies and independent variables which are factors that leads to the use of the remedies, Safety, magnitude of use, legal and policy environment. Types/formulations and source of traditional infertility remedies.

The dilemmas are driven by the independent variables acting either independently to each other or simultaneously acted all to gather.

The levels of dilemmas differ, depending on the location from which the study was conducted.

The Conceptual framework also serves several purposes which includes ; linking the source of the traditional infertility remedies, the social demographic factors and general factors that contribute the use of the traditional infertility remedies together with knowing whether those used remedies are there any safety and efficacy assurance to the users.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

In this chapter the researcher explains the study design, area of stud, study populations, sample size calculation, sample size, inclusion and exclusion criteria, sampling technique and procedures, study variables, data collecting tools, data analysis, ethical consideration, dissertation plan and study limitation.

3.2 Study design

This is a case study which will allow the exploration and understanding of the researched problem through qualitative and quantitative data collection methods.

3.3 Study area

The study was carried out in urban Dar es Salaam within the three municipals (Temeke, Ilala and Kinondoni) from 1st of June 25th to July 2016 (annex 1).The study included Regulatory Authorities, traditional healers, public and private health facilities. At Regulatory authorities offices involved were, coordinator of traditional healer from each Municipal, Coordinator of traditional healer at Ministry level, TFDA and Tanzania Laboratory chemist, likewise in health facilities clients from Muhimbili National Hospital, Temeke Regional Referral Hospita, Mbagala Rangi Tatu Health center, Dar group Hospital, Amana Regional Referral Hospital, Mnazi Mmoja Health Centre, Regency Hospital, Sinza Health centre, Mikocheni and Massana Hospitals were participated in the study . Besides this four traditional healers sites from all three municipals were also involved.

Dar es Salaam Region is located between Latitudes 6.36 and 7.0 degrees to the South of the Equator and Longitude 33.3 and 39 degrees to the East of Greenwich. The region lies along the shore of Indian Ocean in the East and boarders costal region in the West, South and North. In 2013, Dar es salaam Regional had one National Hospital, three Governmental Regional referral hospitals and twenty-nine Health centers, while in 2012 had over five thousands registered traditional healers(34&35).

3.4 Study Population

The study population comprised of willing infertile couples at both public and private institutional gynecological clinics which provided mostly quantitative data while traditional healer sites and Regulatory Authority in urban Dar es Salaam provided more of qualitative component.

3.5 Sample size Calculation for Quantitative data

The sample size was obtained through the use of the formula for sample size calculation for quantitative variables specifically in cross-sectional studies.

$$\text{Sample size } (n) = \frac{z1\text{-}\&2 * P(1-p)}{d2}$$

Where Z1-&2= standard normal vitiate, at 5% type 1 error P<0.05 IT IS 1.96

P value are considered significant below 0.05 therefore 1.96 will be used.

P=Expected proportion in population based on previous studies, in our case 11% was used, a study conducted in Kilimanjaro in Tanzania.

D=Absolute error for this study 5% was used.

So the calculated sample size is

$$N = \frac{1.96 * 1.96 * 0.11(1-0.11)}{0.05 * 0.05}$$

$$= 151.$$

By taking non-respondent rate be equal to 10% then

10% of 151= 15.1

The total number of participants to be interviewed was 151+16=167.

3.6 Sampling procedure and selection for both quantitative and qualitative data

3.6.1 For quantitative part

Several techniques have been used to obtain study sample. Simple random selection was done out of three Regional Referral hospitals so as to obtain two of them, three public health centers, one private health center, three private hospitals and the National hospital within the three Municipalities having the gynecological clinics were purposively selected. A total of 10 health facilities were included in the study. Willing individual infertile clients and one couple attending the gynecological clinic within a particular health facility were conveniently interviewed to constitute the study sample.

Data was collected by means of observations and interviews assisted by structured questionnaire with both closed and open ended questions. The collected quantitative data was cleaned on daily basis prior to data codification and entry into a database. The key aspects dwelled on included: demographic characteristic `such as age, sex, number of children, children spacing, sex of the children (for those having secondary infertility). economic activities, financial position/income and health seeking behavior, proportion of traditional remedies users among the infertile clients, the source of those remedies, factors contributing to the use of the traditional infertility remedies, and the mostly commonly used remedies including formulations and part whether it is leaves, shoot or the barks.

Other information collected included the methods used by the traditional healer in realizing the effectiveness of the remedies and safety assurances, looked whether the Governmental Regulatory Authorities by any means took measures for public protection upon the use of traditional remedies.

3.6.2 Qualitative part

For qualitative sample was purposively selected based on targeted information. The snowball technique was also used in obtaining other key informants. In this case one registered traditional healer from each municipals, one unregistered traditional healer (those who believed to manage infertility), three coordinators of traditional healers (one in

each municipal) and Regulatory Authority personnel constituted the sample size. A total of 9 key informants was in-depth interviewed using interview guide from which the basis of theoretical saturation has been reached.

3.7 Inclusion and exclusion criteria.

The inclusion criteria was all willing infertile couples aged 18-44 years while exclusion criteria was those unwilling, aged below 18 and above 44 years

3.8 Measurements and Pretest of the questionnaire

Pretesting of the data collecting tools; questionnaire and interview guide, recruitment of the researchers assistance, were done in order to meet stated objectives, maintain uniformity and preciseness of the data. The weakness and difficulties were amended accordingly.

Pilot study was implemented by Principal investigator, some questions were rephrased for better archive of targeted objective and proper time management.

The sample size of pilot study consisted 18 infertile clients that was 10% of the research sample size (167 infertile clients). The pilot area was MHS Massana Hospital situated at Kinondoni Municipal. The sampling procedure used was simple randomly Selection and snowball technique. Names of 16 client conveniently attended at Gynecological clinic for infertility problem were numbered in a piece of paper, each piece consisted of number and name. the those pieces were folded and put into a box, then the client were asked to pick one folded piece paper from box and the remained folded paper were shake and allow other client to pick ,the exercise was done repeatedly until got 10pices of paper. Finally I unfold the paper and those name (10) client were interviewed. Besides this, 8 clients so as to constitute18 were obtained through snowball technique from which 5 were physically asked the questionnaire and 3 reply the questionnaire thought mobile communication.

The pilot participants provided consent and lead to the inclusion of two open ended seed questions of the main study. The additional questions:

1. For how long were the infertile client spent for looking for a child?

2. For how long have you (infertile client) used the traditional infertility remedies?

3.8.1 Dependent variables

Dilemmas in traditional infertility remedies.

3.8.2 Independent variables

-The use of traditional remedies in the infertile couple.
-Attitudes towards the use of traditional remedies in infertility management.

-Demographic characteristic, age, education level, residential location, marital status, sex, number of children and their sex, the space between children, economic status, financial position, health seeking behavior,

-Availability of the traditional healer/remedies towards influencing the use of traditional remedies, proportional of traditional remedies users, failure of conventional remedies.
-safety of infertility traditional remedies.

3.9 Recruitment and training of the assistant researchers

This was a three days activity done a week before data collection process. It involved two research assistants whose Qualifications were Conventional medicines dispenser (Accredited Drug Dispensing Outlets-ADDO- Nurse) and Rural Medical Officer. Training to these researchers based on orientation of data collecting tools Annex 1 and 2 together with proper use of recorder devices.

3.10 Data collection

Both qualitative and quantitative data were collected within 14 days. Secondary data were used just to provide guidance information on availability of infertile clients within a particular health facility. Qualitative approach was guided by unstructured questionnaire from which 9 Key informant were in-depth interviewed. Meanwhile in quantitative part 165 infertile individual and one couple who purposively went to gynecological clinics were conveniently selected and interviewed to constitute sample size 167.

3.11 Data analysis.

The collected data was analyzed using the statistical package for social sciences (SPSS version 16) computer software whereby descriptive analysis, logistic regression was performed. Cross tabulation and associations between different analyzed variables was also determined. Differences among different variables were considered significant at $p < 0.05$.

For qualitative data, analysis went hand in hand with data collection. Step model for qualitative data analysis was applied in doing analysis

3.12 Ethical Consideration

Permission to conduct this study was sought from research and publication committee of Muhimbili University of Health and Allied Sciences (MUHAS) The permission to conduct the study was received from relevant Authority (Dar es salaam Regional Administrative Secretary). Similarly, prior to recruitment of respondents, clear and vivid explanations were given to elaborate the objectives of the study and enough time was given for answers and questions as well as for participants to decide whether to take part or not, both written and verbal consents were sought from each interviewee. The participants were allowed to withdraw from the study at any point in time. Moreover, neither names nor any personal data was revealed for confidentiality purpose.

3.13 Dissemination plan

The findings are expected to be disseminated to the MUHAS –School of Public Health and Social Sciences, MUHAS Library, Peer review journals ,NIMRA and MHCDGEC.

CHAPTER FOUR

4.0. RESULTS

4.1 Introduction

This study aimed at assessing the use of traditional infertility remedies in managing infertility problem in urban Dar es Salaam. The infertile couple and individuals were interviewed in the study area. The results of the study are presented as per specific objectives.

4.2 Socio-demographic characteristics of the infertile individuals in a sampled population.(n=167)

Table 1 A: Social demographic characteristic of participants

	Education level				
	Frequency (%)				
Age group (years)	**None**	**Primary**	**Secondary**	**Diploma and above**	**Total**
18 – 23	5(38.5)	2(2.6)	4(8.5)	0(0)	11(6.6)
24 – 29	2(15.4)	18(23.1)	10(21.3)	1(3.4)	31(18.6)
30 – 35	3(23.1)	22(28.2)	11(23.4)	7(24.1)	43(25.7)
36 and above	3(23.1)	36(46.2)	22(46.8)	21(72.4)	82(49.1)
SEX					
Male	1(7.7)	0(0)	0(0)	2(6.9)	3(1.8)
Female	12(92.3)	78(100)	47(100)	27(93.1)	164(98.2)
Number of children					
None	8(61.5)	33(42.3)	28(59.6)	23(79.3)	92(55.1)
One child	2(15.4)	21(26.9)	12(25.5)	6(20.7)	41(24.6)
Two children and above	3(23.1)	24(30.8)	7(14.9)	0(0)	34(20.4)
Total	13(100)	78(100)	47(100)	29(100)	167(100)

Source: Field Data

Table B: Health facilities attended by participants

HEALTH FACILITIES	**Frequency**	**Percent**
Mikocheni hospital	23	13.8
Sinza hospital	7	4.2
Masana hospital	18	10.8
Temeke hospital	33	19.8
Mbagala rangi tatu	5	3.0
Mnazi mmoja	7	4.2
Amana	33	19.8
Regency	11	6.6
Dar group	12	7.12
Muhimbili	18	10.8
Total	167	100

Source: Field Data

Table 1A: shows that out of 167 who participated in the study, 164(98.2%) were female, 82(49.1%) aged 36 years and above from which 36(46.2%) have a primary level of education that is standard seven leaver. More than halve participants 5(38.5%) whose age was below 23 they were not attended to formal education.

Level of infertility problem varies, from those who have never had a child (primary infertility) to those who had at least one and above but in need to have more children (secondary infertility).

Among ten health facilities table 1B: Temeke and Amana Regional referral have an equal number of interviewed infertile clients 33 (19.8%) while the Mbagala Rangi Tatu Health center have the least client 5 (3%) interviewed due to inconveniences of client attendance.

4.3. The proportion of infertile individual who have used the traditional infertility remedies

The table below shows the use of traditional infertility remedies from 167 respondents and the distribution as per age group.

Table No 2:

	Did you use traditional infertility remedies?		
Age group	No (%)	Yes (%)	Total
< 23 years	2(18.2)	9(81.8)	11(100)
24 - 29 years	11(35.5)	20(64.5)	31(100)
30 - 35 year	24(55.8)	19(44.2)	43(100)
36 years and above	23(28.0)	59(72.0)	82(100)
Total	60(35.9)	107(64.1)	167(100)

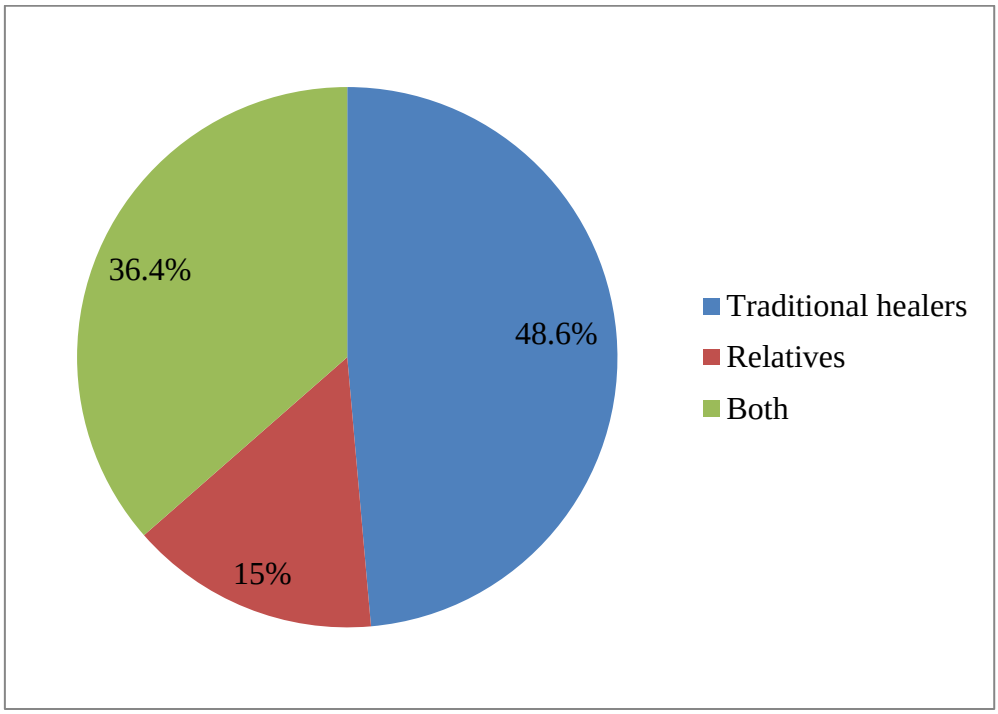
Source: Field Data

Table No 2: showed that, out of 167 infertility clients who went to seek conventional infertility management, 107(64.1%) have reported to use the traditional remedies in managing the infertility problem. Higher rate of traditional infertility remedies users was found in smaller age group (<23) and in the higher age group (thirty six and above).

4.4.Source of traditional infertility remedies.

The pie chart below represents 107 responses towards source of the remedies

Figure 1: Where did you obtain traditional infertility remedies?



Source of Data: Field Data

Figure 1, above indicates that out of 107 Infertile clients who have used the traditional infertility remedies, about half (48.6%) of traditional remedies user, obtain their remedies from traditional healers while 15% obtain from their relatives alone, 36.4% obtain from both sources. One of the clients who was interviewed in relation to the source of the remedies had the following to say and I quote, "*Am called by many names because of infertility, so when I told you that I got the remedies from a relative don't think of one specific relative but I meant several of them, whoever said he/she will help I rushed to*

*them. The same applies to the traditional healers, I saw many of them and I could not even count". (*Temeke Municipal on June 2016)

4.5 Factors leading to the use of traditional infertility remedies in urban Dar es salaam.

Table No 3. Association between the use of traditional infertility remedies and independent variables.

	Did you use traditional infertility remedies?			
Age group (years)	YES	NO	OR(95%CI)	P-VALUE
< 23	9(81.8)	2(18.2)	0.643(0.12-3.46)	0.607
24 - 29	20(64.5)	11(35.5)	0.922(0.35-2.45)	0.871
30 - 35	19(44.2)	24(55.9)	2.505(1.094-5.733)	0.030
36 and above	59(72.0)	23(28.0)	Reference	
Does the availability of traditional healers influence the use of traditional infertility remedies?				
Yes	87(71.3)	35(28.7)	2.851(1.311-6.198)	0.008
No	20(44.4)	25(55.6)	Reference	
What other reasons influence the use of traditional infertility remedies?				
Believe	19(42.2)	26(57.8)	2.649(0.633-11.082)	0.182
Try and error	57(73.1)	21(26.9)	0.766(0.194-3.020)	0.704
Story telling	20(74.1)	7(25.9)	0.750(0.157-3.570)	0.717
Failure	3(60)	2(40)	1.249(0.134-11.609)	0.845
Divorce	8(66.7)	4(33.3)	Reference.	

Source: Field Data

From table No 3 above, the logistic regression was used to test the association of the factors that lead to the use of traditional infertility remedies.

4.5.1. Age groups

Out of 167(64.1%) infertility clients, 9(81.8%) belongs to age group less than 23 have used traditional infertility remedies while 20(64.5%), 19(44.2), 59(72%) age groups 24-96, 30-35, and 36> respectively have used traditional infertility remedies in managing infertility problem. The association between the use of traditional infertility remedies and age group 30-35 is statistically significant. (P value=0.03)

4.5.2 Traditional healer.

Out of 167 respondents, 87(71.3%) who had used the traditional infertility remedies, have responded that, it is true availability of traditional healer influence the use of traditional infertility remedies, while 25(55.6%) who had not used traditional infertility remedies responded that ,availability of traditional healer did not influence use of traditional infertility remedies.

There was an association between availability of traditional healer and the use of traditional infertility remedies. There is a high chance of use of use the remedies among those who said yes as compare to those who said availability of traditional healer did not influence use of traditional remedies, the association is statistically significant Confidence interval 1.311-6.198 (P value=0.008).

4.5.3 Other reasons which contribute to the use of traditional infertility remedies are as described below.

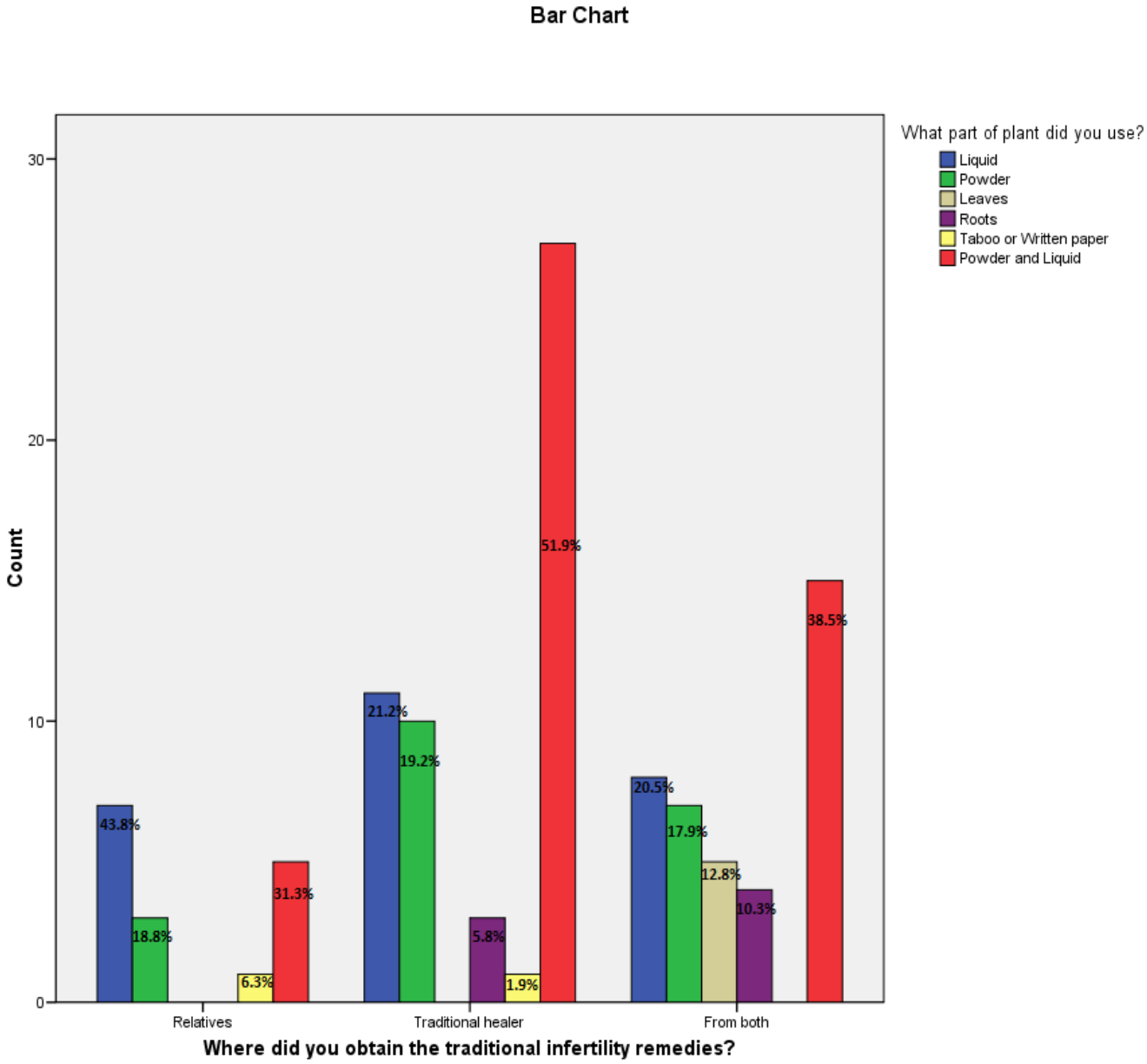
4.5.4.1 Belief

Out of 167 study sample, 19(42.2%) have used the traditional infertility remedies and they believe that the remedies will have positive impact toward pregnant conception. Likewise for Try and Error 57(73.1%), storytelling 20(74.1%), failure of conventional remedies 3(60%) was among the factors that influence the use of traditional infertility remedies among the users. Though belief contribute in almost three times as compare to the use of traditional remedies due to worries of being divorced, the factor believe was not statistically significant(P-value 0.182) .

4.6 Commonly used traditional infertility Remedies.

The bar chart below represents different forms/formulations utilized by infertile clients as obtained from different source.

Fig: No 2: What parts of plant or form of remedies did you use.



Source: Field Data

The bar chart above shows that the commonly used traditional infertility remedies were mixture of liquid and powder clients obtained from traditional healers, followed by powder and liquid, while traditional infertility remedies in liquid formulation was commonly issued by relatives. The taboo and Arabic written paper were of little use.

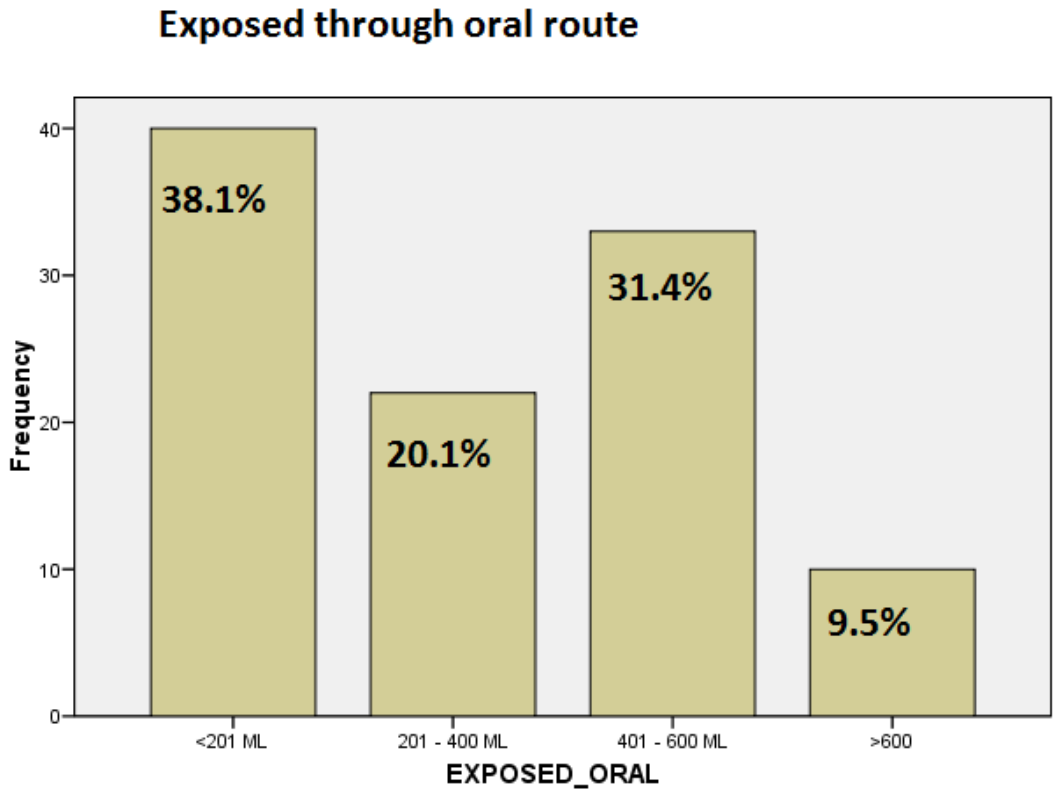
4.7 Route of administration and safety assurance of the traditional infertility remedies

This part was covered by quantitatively and qualitatively for deeper understanding.

4.7.1: Quantitative analysis

The remedies were administered through skin (by incision), topically through bathing and orally. While other means of remedies application were of little value and its impact being almost negligible, the application through oral route was utilized by all most all clients. Infertile couple were taking the traditional remedies in a form of liquid and powder, the raw (root) and other formulation but at the end were converted either into a liquid or powder. Taking assumption 1ml is equivalent to 1gm then the affected individual were drinking from 10ml to 3000ml per day. Figure 3 below shows, majority 107(38.1%) were took about 20ml per day while about 20.1% were exposed into oral remedied of volume ranging from 201ml to 400ml per day, 31.4% of client who use the remedies used at a volume between 401ml to 600ml lastly about 9.5% were exposed to traditional infertility remedies at a volume more than 600ml per day. The duration of use also varies from a period of less than a month up to more than five years especially for those having longer infertility period. The duration and amount is considerably higher as compared to the standard regime in conventional infertility management. The longer and larger exposed amount of traditional infertility remedies the higher the chance of intoxication.

Figure 3: The administration of traditional infertility remedies through orally.



Source: Field Data

4.7.2: Qualitative analysis

The qualitative data were analyzed following ten steps for qualitative data analysis after Dey (1993) model (41). Four themes were developed. The four themes are presented below:

(i) Safety and efficacy of traditional infertility remedies, (ii) National level effort to analyze the traditional infertility remedies, (iii) Inclusion or training of traditional practitioners, (iv)Concomitant of use of conventional drug and traditional remedies.

4.7.2.1: Safety and efficacy of traditional infertility remedies

Safety and Efficacy analysis wasn't done on most traditional infertility remedies as this was on the context of conventional remedies. Drug analysis to evaluate the constituents, strength, therapeutic efficacy and verification of stated purpose (claimed treatment) is only

done to conventional remedies and herbs that are industrially processed following Goods Manufacturing Practices (GMP).

In one level of Regulatory Authority the officer narrate and I Quote; *"mean while we register the traditional healer. Registering the remedies will follow later we are planning on it. However when we start registering the remedies we will start with those industrial processed remedies."*

This position was also verified by the Tanzania Food and Drug Authority and I quote "*It is very challenging when we come to registration of traditional remedies in general as practitioners mix a lot of herbs with unknown constituents from which they claim treatment of a particular illness. However for now Traditional healer registration and their remedies is under the MHCDGEC''.*

4.7.2.2: National Level Effort to analyze the traditional infertility remedies

To date, Tanzania has not officially analyzed and proved safety and efficacy of any traditional infertility remedies as used by infertile individual. The affected clients use the remedies at their own risk.

An Officer from Regulatory Authority responded and I quote. *"we are checking the toxicity of the traditional remedies if there is a police case that is upon consumption of a particular remedies there are suspected health effect usually death of the individual and in rare cases we do check the toxic city of a traditional remedy upon request of a traditional healer his/herself''.*

4.7.2.3: Induction on training for Traditional practitioners

Most Registered traditional healers get their knowledge by "induction" inheritance while only few get it abroad. No college or formal institution in Tanzania offers training on pure traditional service provision. Besides that, they are registered by the Government. One of the practitioner responded and I quote: *"Am a conventionally a clinical officer I got the knowledge on traditional infertility management through informal training from the owner of this facility for about six months. The owner got the knowledge (certificate) in China as in Tanzania there are no college that offer purely traditional remedies practices"*.

This being the case, the traditional infertility remedies users are in the high risks of endangers their health if those traditional remedies claimed to manage infertility will not be analyzed to find out toxicity and prove efficacy and its safety.

4.7.2.4: Concomitant use of conventional drug and Traditional remedies

Health hazard due to traditional infertility remedies use could also results from drug-drug interaction upon concomitant use of traditional with conventional drug. Hence, Health professional practitioners should assess the use of traditional infertility remedies while offering services to advice the client on possible health effect due to drug-drug interactions, and consumption of unsafe remedies. One of infertile client who was in long infertility duration when asked about using drugs responded and I quote, *"I have been infertile since I got married 15 years ago .I have been to many clinics- both conventional and traditional: None has asked me about using drug from the traditional clinics and vice versa".*

CHAPTER FIVE.

5.0 DISCUSSION

5.1. Introduction.

This chapter is composed of discussion of the results based on the specific objectives.

5.2 The proportion of infertile couple aged 18-44 who have used traditional infertility remedies in managing infertility problem.

These research findings showed that the desire to be a biological parent pushed infertile clients to use traditional infertility remedies. The use of the remedies was independent of education level and Health facility attended. Rather as the age increased, the desire for a child also increased. See page 22 Table 2 and last paragraph for the analysis.

The findings compare well with a study conducted in Jordan where the rate of traditional remedies use among the infertile client was high (43%) out of 428 studied in year 2013(35&37).The variation in proportion can be due to time elapsed, magnitude of the infertility problem and increased popularity of traditional healers.

5.3. The source of traditional infertility remedies

Due to infertility consequences, the affected couple /individuals tend to use the traditional infertility remedies regardless of the source. However, this research findings showed that, the majority of the remedies used were obtained from traditional healers while minority obtained them from their relatives. (Somebody who were not officially recognized as a traditional healer).Refer to the fig 1 page 23. The source of the remedies has bearing on its safety at time and efficacy. As applied in previous sections, plant do resemble in physical appearance and might differ in the constituents, some of the constituents are toxic. This is a real threat because under such condition of obtaining the remedies in whatever the source one can come up to the use of unintended plant species(toxic plant). Hence increasing a risks of exposing the infertile client to unknown toxic levels. This situation complicate further the problem of infertility again this is a dilemma to the infertile client once more. It is evident from this research that use of traditional remedies in managing infertility is wide. Despite this, however, there is minimal official advocacy on increasing awareness on the possible toxic effects of the remedies. Since some times the traditional infertility remedies

are used concomitantly with either conventional medicines or traditional remedies from other source then collaboration of traditional infertility healer/remedies with conventional infertility remedies could reduce chances of conventional-traditional infertility drug interactions which usually leads to unexpected side effects or intoxication.

There are dissimilarities when this findings are compared with a research done in OSUN State of Nigeria which showed that out of 152 respondents 41.1% got infertility help from Faith healers while 7.9% got it from traditional herbalist and the remaining percentage from other means(30&37).

5.4 Factors leading to the use of traditional infertility remedies.

This study validates the association between the use of traditional infertility remedies with younger age groups, Infertility duration and presence of traditional healers. The association is statistically significant. The associations are presented below.

5.4.1Use of traditional infertility remedies among age groups

Higher rate in use of traditional infertility remedies among the younger age group can be due to the marriage/ relationship pressure while for the older infertile clients tend to use the remedies because they afraid of biological factor which exclude them from getting pregnancy at the age above 45years see table 3 on page 24,this results are comparable to a study conducted in USA which showed a higher proportion of using Assisted Reproductive Techniques(in managing infertility) among the younger age group(39).

5.4.2Use of traditional infertility remedies due to the relatives influence

The research finding of this study showed an association between the use of traditional infertility remedies and relatives influence towards the use of those remedies, it compared well with a study conducted in Gucha districts in Kenya which showed a similar association, that is, out 167 purposively selected patients relatives had a marked influence on 37.7% of the respondents using herbal medicine(19)

5.4.3 Use of traditional infertility remedies due availability of traditional healers

This research finding are similar to that of a study conducted in Dar es salaam which showed that 87(81.7%) had used the traditional infertility remedies due to the availability of traditional healer who gain popularity from public media advisements (19).

One of the client who was interviewed in relation to the contribution of traditional healer towards the use of traditional infertility remedies had the following comment and I quote, "*being infertile you regard you self as meaningless and the society undervalue your humanity so if you heard or see any advertisement of traditional healer anywhere that she/he is able to free you from the infertility problem then, no way you could stop from following the traditional healer's service".*

While on the same question asked in different way, the client narrate and I quote, *"I used a lot of money, I ate and drink whatever was said that will rescue me from infertility problem as per Traditional healers Advertisement in the Bill boards and TV .There is no way we can take those remedies if those traditional healer are not publicized"*

This research is contrary to the findings of a study conducted in Ireland showed that apart from infertility duration which contribute to the use of traditional infertility remedies, other factor such as increase obesity and higher sexual transmitted disease was also mentioned to be among factors that contribute to the use of alternative remedies in infertility management (40).

5.5 Commonly used traditional infertility remedies

The finding showed that, the traditional infertility remedies used were mostly in the formulation of liquid, powder, Arabic written paper and Taboo. Raw roots were of little use. Though neither the client nor the Regulatory Authority could predict the constituent within those forms/formulations the client have to take upon their own risks. These findings are contrary the findings of a research done in India which showed that, flower remedies were used either own its owned or prepared in combination or mixed to formulate a liquid preparation, also Fertility yoga and traditional yoga were specifically developed as infertility remedies(41).

5.6 Safety assurance of infertility traditional remedies

The findings showed that either there was inadequate means of verification on safety and efficacy on the traditional infertility remedies context or safety and efficacy are considered as just physical state of the remedies rather than the constituents of it. This brings about confusion to the traditional remedies user since though the remedies were allowed to be used by the health sector, the users assumed that they are safe while the safety and efficacy is a still proverb.

This was narrated by a coordinator of Traditional healers and I quote: *"Upon Registration of Traditional Healers, there are steps to be followed before his /her registration is completed. Adequacy of working environment, space and remedies package is among the criteria."*

The growing popularity of herbal medicines is due to the fact that many people believe, they are safer than pharmaceutical preparations. However studies has shown that not all herbal products are safer, some poisonous herbal medicines can cause serious illness from allergies to liver or kidney malformation to cancer or even death(42).

This study findings showed that the traditional infertility remedies utilized by infertile client were neither tested for safety nor efficacy. Due time constraint the health impact towards the consumption of those remedies could not be demonstrated/studied. A study carried out in Nigeria, documented lack of standardization and safety regulations. The study also documented that due lack of safety and efficacy assurance mechanisms 25% of child blindness in Nigeria were associated with the use of traditional eye medicines(43).Likewise a study conducted in Ghana showed that traditional medicine utilized in managing infertility was not standardized(31).

The findings of research in Nigeria reinforces findings a study conducted (WHO 2005) to review the existing evidence on the use of traditional medicines in meeting the health needs of population in developing countries. The WHO study upon tested the safety and efficacy of the remedies it showed that the remedies were contaminated and were of poor quality(fails Quality control specifications) (44).

CHAPTER SIX.

6.0: CONCLUSION AND RECOMMENDATION

6.1: Conclusion.

The section brings up the general conclusion of the research finding based on specific objectives.

6.1.1. Proportional of traditional infertility remedies user

The study has determined that the

- The use of traditional infertility remedies is high in the studded area- Urban Dar es salaam.
- The exposed users of the remedies were both primary infertile clients and secondary infertile client mean while education did not hinder the infertile client from using the traditional infertility remedies.
- The use of traditional infertility remedies was higher among clients aged below 23 years and those with 36 years and above.

6.1.2. Source of Traditional Infertility remedies

The research determined that;

- Infertility patient obtained traditional infertility remedies from different source however, majority got it from traditional healers and minority got from relative who just know the remedies.

6.1.3. Factors that led to the use of traditional infertility remedies

The study has determined that;

- Belief that the traditional remedies have positive impact to the infertility problem, worry for being divorced by their loved one, Trial on whatever is said will free the infertility issues, Testimony (story telling) were among the factors that contribute to the use of traditional infertility remedies.

- Presence of traditional healer and age were significant factors that influence the use of traditional infertility remedies among the infertile clients. Smaller age group

and elderly were the most affected age group. Traditional healers' motives and their popularity encourages the clients towards the use of their remedies.

6.1.4. Commonly used remedies

This study has identified that:

- The mostly remedies used was in a form of liquid powders, Arabic written paper. Taboo and raw roots which were of little use.
- There were neither uniformity in the formulation of traditional infertility preparations nor known constituent present in those infertility formulation that are claimed to solve infertility problem.

6.1.5. Safety and efficacy

The study has explored that:

- Safety and Efficacy was not in patient priority or even concern.
- Traditional healers just believe the remedies are safe because it has been used for so long.
- Today's practice safety and efficacy is on context of conventional remedies and not traditional infertility remedies.
- Regulatory Authority consider safety and Efficacy of traditional remedies just on physically rather than remedies constituents.

6.2. Recommendation.

This study has provided useful information on the Dilemmas that are facing the infertile individual upon use of traditional infertility remedies, so the following are the Recommendations to the Regulatory Authority, Conventional health service provider, Traditional health service provider and Community especially infertile clients.

- Abolish the infertility problem, could not only protect public health from unknown idiopathic non communicable diseases due to utilization of unproven safety and efficacy of traditional infertility remedies but also diminish a central existence of use of traditional infertility remedies of unproven source and exposed to lager dose of infertility remedies.

- Establish innovative intervention on tackling the infertility problem to the reproductive age group to minimize the proportional of infertile individual from taking substances (traditional infertility remedies) of questionable safety and efficacy.

- Advocacy on public awareness on the use of the remedies from authorized source to avoid intoxication.

- Drug Regulatory Authority should advocacy on community awareness on causes and systematic infertility management of infertility problem to rescue the clients from the dilemma of using traditional infertility remedies.

- Law and Regulation to be put in place to control Traditional infertility treatment advertisement from misleading information to the infertility clients.

- Strengthening Health Policy on the issues of Standardization, Controlling and Monitoring of safety and efficacy of traditional infertility remedies to protect future public health.

- Regulatory Authority should establish collaborative and networking venture of infertility conventional Health service provider with traditional infertility service provider for quality service provision to the infertile client.

- The traditional healer and relevant stakeholders(upon their proprietary right) should provide relevant information to the Regulatory Authority based on the plant particularity that are used and claimed for infertility, so that scientific and clinical validation can be applied to prove the safety and effectiveness of a therapeutically product.

- More research should be done on the claimed traditional infertility remedies/Formulations/forms/Preparations to identify the active constituents and proof toxicity free and level of efficacy and through intellectual property right those proven s to be safe and efficacy remedies should be allowed for use so as to protect the public.

- Health service provider should manage the infertility case to their capacity and have a known referral system to the higher level of service provision.

- Conventional health service provider should ask the clients if they were in use of any remedies before prescribing to reduce chances of concomitantly drug use.

LIMITATION OF THE STUDY.

The study was unable to identify commonly names given to traditional infertility remedies as apply to either practitioners of traditional remedies or users of the remedies.. More over the study also could not establish the extent of toxicity from which the infertile clients are exposed to by either means whether by taking through mouth or though skin contact by bathing the remedies.

REFERENCES

1. Mascarenhas MN, Flaxman SR, Boerma T, Vanderpoel S, Stevens GA. National, Regional, and Global Trends in Infertility Prevalence Since 1990: A Systematic Analysis of 277 Health Surveys. PLoS Med. 2012;9(12):1–12.

2. WHO. Traditional medicine. World Heal Organ. 2003;1(1):14–7.

3. new luc 001.

4. Ligha AE, Oyibo AC. The effect of Indian liquorice on fertility potentials of male rats. Arch Biol Sci. 2012;64(1):228–37.

5. Aisha M, Gbadebo AA, Jika YA, Randawa AJ, Biliaminu L. Psychosocial Morbidity in Women Attending an Infertility Clinic in Northwestern Nigeria: "Its the Worst Misfortune of a Woman." J Gynecol Obstet [Internet]. 2015;3(1):6. Available from: http://www.sciencepublishinggroup.com/journal/paperinfo.aspx?journalid=255&doi=10.11648/j.jgo.20150301.12

6. Of T, Processing T. 2. Review of Literature 2.1. 1991;5–43.

7. Hfea T. The HFEA guide. Infertility. 2007;

8. District B. Local Use of Traditional and Modern Medicine. 2011;

9. Stanifer JW, Patel UD, Karia F, Thielman N, Maro V, Shimbi D, et al. The determinants of traditional medicine use in northern Tanzania: A mixed-methods study. PLoS One. 2015;10(4):1–17.

10. Bardaweel SK, Shehadeh M, Suaifan GARY, Kilani MZ. Complementary and alternative medicine utilization by a sample of infertile couples in Jordan for infertility treatment : clinics-based survey. 2013;1–7.

11. Kaadaaga HF, Ajeani J, Ononge S, Alele PE, Nakasujja N, Manabe YC, et al. Prevalence and factors associated with use of herbal medicine among women attending an infertility clinic in Uganda. BMC Complement Altern Med [Internet]. 2014;14:27. Available from: http:// www. pubmedcentral. nih.gov/ articlerender. fcgi?artid=3898407&tool=pmcentrez&rendertype=abstract

12. Bardaweel SK, Shehadeh M, Suaifan G a RY, Kilani M-VZ. Complementary and alternative medicine utilization by a sample of infertile couples in Jordan for infertility treatment: clinics-based survey. [Internet]. BMC complementary and alternative medicine. 2013. p. 35. Available from: http://www.biomedcentral.com/1472-6882/13/35

13. Traditional Practices of Turkish infertile women an example from a rural county.

14. Almousa H, Rabie FM, Alsamghan AS. Prevalence , Types and Determinants of Complementary and Alternative Medications among Health Clinic Clients. 2015;6(18):51–9.

15. Pal S, Shukla Y. Herbal medicine: current status and the future. Asian Pacific J Cancer Prev [Internet]. 2003;4(80):281–8. Available from: http://apocpcontrol.com/paper_file/issue_abs/Volume4_No4/Sanjoy Kumar Pal.pdf

16. S. V. Okello RON and JCO. African Journal of Traditional. African Journal of Traditional, Complementary, and Alternative Medicines. 2010. p. 13.

17. Soladoye MO, Chukwuma EC, Sulaiman OM, Feyisola RT. Ethnobotanical Survey of Plants Used in the Traditional Treatment of Female Infertility in Southwestern Nigeria. 2014;12(March):81–90.

18. Semenya S, Maroyi A, Potgieter M, Erasmus L. Herbal medicines used by Bapedi traditional healers to treat reproductive ailments in the Limpopo Province, South Africa. African journal of traditional, complementary, and alternative medicines : AJTCAM / African Networks on Ethnomedicines. 2013. p. 331–9.

19. FACTORS ASSOCIATED WITH USE OF HERBAL MEDICINE AMONG PATIENTS IN HERBAL CLINICS IN GUCHA. 2015;174–87.

20. Melorose J, Perroy R, Careas S. No Title No Title. Statew Agric L Use Baseline 2015. 2015;1(401).

21. Wenzel TL. Western and Traditional Medicine Use Practices in Shirati, Tanzania Tanya Lynn Wenzel. Spring. 2011;1–17.

22. PLOS ONE The Determinants of Traditional Medicine Use in Northern Tanzania A Mixed-Methods Study.

23. Kaadaaga HF, Ajeani J, Ononge S, Alele PE, Nakasujja N, Manabe YC, et al. Prevalence and factors associated with use of herbal medicine among women attending an infertility clinic in Uganda. [Internet]. BMC complementary and alternative medicine. 2014. p. 27. Available from: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=3898407&tool=pmcentrez&rendertype=abstract

24. Khanna J, Butler P a. Assisted reproduction in developing countries—facing up to the issues. Prog Reprod Heal Res. 2003;(63):1–8.

25. Project WE. Need for accessible infertility care in Ghana : the patients ' voice. 2014;18–20.

26. Chinese Herbs and Fertility.

27. Herbs C. Chinese herbs and fertility.

28. Steenkamp V. Traditional herbal remedies used by South African women for gynaecological complaints. J Ethnopharmacol. 2003;86(1):97–108.

29. Kamatenesi-Mugisha M, Oryem-Origa H. Traditional herbal remedies used in the management of sexual impotence and erectile dysfunction in western Uganda. African Health Sciences. 2005. p. 40–9.

30. Moshi MJ, Otieno DF, Mbabazi PK, Weisheit A. Ethnomedicine of the Kagera Region, north western Tanzania. Part 2: The medicinal plants used in Katoro Ward, Bukoba District. J Ethnobiol Ethnomed [Internet]. 2010;6:19. Available from: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=3224970&tool=pmcentrez&rendertype=abstract

31. Wah CL, Hock SC, Yun TK. Current scientific status and regulatory control of traditional/herbal medicinal products: Globalization challenges. Pharm Eng [Internet]. 2012;32(6):10–20. Available from: http://www.embase.com/search/results?subaction=viewrecord&from=export&id=L368079846\nhttp://elvis.ubvu.vu.nl:9003/vulink?sid=EMBASE&issn=02738139&id=doi:&atitle=Current+scientific+status+and+regulatory+control+of+traditional/herbal+medicinal+products:+Glo

32. Telefo PB, Lienou LL, Yemele MD, Lemfack MC, Mouokeu C, Goka CS, et al. Ethnopharmacological survey of plants used for the treatment of female infertility in Baham, Cameroon. J Ethnopharmacol [Internet]. Elsevier Ireland Ltd; 2011;136(1):178–87. Available from: http://dx.doi.org/10.1016/j.jep.2011.04.036

33. Chirangi MM. Health and Healing in Mara. Afya Jumuishi Towar interprofessional Collab between Tradit Mod Med Pract Mara Reg Tanzania [Internet]. 2013;111–56. Available from: http://hdl.handle.net/1887/20753

34. United Republic of Tanzania. Dar Es Salaam Regional Commissioner ' S Office. 2013;

35. Kilasa Mtambalike_ Traditional healers are popular in Tanzania, but supposed to register before practicing _ D+C - Development + Cooperation.

36. O'Reilly E, Sevigny M, Sabarre KA, Phillips KP. Perspectives of complementary and alternative medicine (CAM) practitioners in the support and treatment of infertility. BMC Complement Altern Med [Internet]. 2014;14:394. Available from: http://www.ncbi.nlm.nih.gov/pubmed/25310971\nhttp://download.springer.com/static/pdf/902/art:10.1186/1472-6882-14-394. pdf?origin Url=http://http ://bmccomplementalternmed.biomedcentral.com/article/10.1186/1472-6882-14-394&token2=exp

37. Bardaweel SK. Alternative and antioxidant therapies used by a sample of infertile males in Jordan: a cross-sectional survey. [Internet]. BMC complementary and alternative medicine. 2014. p. 244. Available from: http://www.ncbi.nlm.nih.gov/pubmed/25026980

38. Tobergte DR, Curtis S. No Title No Title. J Chem Inf Model. 2013;53(9):1689–99.

39. Gyasi RM, Mensah CM, Adjei PO-W, Agyemang S. Public Perceptions of the Role of Traditional Medicine in the Health Care Delivery System in Ghana. Glob J Health Sci. 2011;3(2):40–9.

40. Raphael E. Traditional Medicine in Nigeria: Current Status and the Future [Internet]. Research Journal of Pharmacology. 2011. p. 90–4. Available from: http://docsdrive.com/pdfs/medwelljournals/rjpharm/2011/90-94.pdf

41 Dey, I. (1993). Qualitative data analysis: an user-friendly guide for social scientists London, Routledge.

APPENDICES

ANNEX 1: Questionnaire for Quantitative Data collection. (Infertile Couple.)

ID no_____

Residential_____

1. **Demographics characteristics**

Age_____

Sex: male/female

Educational level: Non _____primary_____secondary_____advanced_____

other specify_____

Source of income_____

Marital status_____

Time spent looking for kid/infertility duration-------

Number of children_____

For those having secondary infertility

Sex of kids_____

Space between the last two kids_____

2.Use of traditional infertility remedies.

(i)For how long were you looking for a child less than six month_____more than one year_____, more than two years_____, others specify_____

(i).Did you ever hear about traditional infertility remedies yes/No

(ii) Did you ever use the traditional infertility remedies in managing infertility problem? Yes_____/No_____

(iii).How did you use the traditional remedies in tackling infertility problem

_____
_____

3. Source of traditional infertility remedies.

_____

_____

(i)Where did you obtain those infertility remedies?

_____

_____

(ii)How did you use it, at what amount?

_____

_____

(iii).For how long have you used the remedies less than a month_____,more than a month_____,others specify_____

4. Commonly used traditional infertility remedies.

(i) What part of the plant did you use roots, shoots, leaves or others specify_____

(ii)What factors led to the use of the traditional infertility remedies mentions at least three? (3)

_____

_____

_____

5. Other factors that influence use of traditional infertility remedies.

(i). In your opinion, how do the mentioned factors influence people to use the traditional infertility remedies?

Attitudes_____

Availabilities of traditional healers_____

Availability of traditional infertility remedies_____

Failure of conventional remedies_____

Others specifies_____

ANNEX 1B: Dodoso la Tarifa za Tarakimu. (Kwa wenye matatizo ya uzazi)

Kumbukumbu namba:_____

Mahali ulipo:_____

1. **Utambulisho.**

Umri:_____

Jinsia me/ke:_____

Kiwango cha Elimu:_____

Chanzochako cha pesa:_____

Hali yako ya ndoa, umeolewa/umeachika/sijaolewa/_____

Jinsia za watoto me/ke_____

Nafasi kati ya mtoto mmoja na mwengine mwaka

1,2 nyingine sema_____

2. **Utumiaji wa dawa za kienyeji katika kutatua taizo la ugumba.**

(i)Muda gani umepita toka uanze kutaka kupata mtoto
miezi 6, zaidi ya mwaka 1, miaka miwili_____ nyingine sema_____

(ii)Umewahi sikia kuhusu dawa za kienyeji zinazosaidia kutatua matatizo ya uzazi? Ndio/Hapana

(iii)Umewahi kutumia dawa za kienyeji katika kutatua matatizo ya uzazi,_____

(iv).Umetumia kwa muda gani?

Elezea

_____

_____

(V)Umekuwa ukitumiaje- na kwa kipimo gani?_____

3.Upatikanaji wa dawa za kienyeji zinazotatua matatizo ya kutopata mtoto/watoto.

(i)Wapi umekuwa ukizipata dawa hizo?

Elezea

_____

_____

4.Aina ya dawa au muundo wa dawa hizo

(i) Ni sehemu gani ya mmea hutumika kama dawa?

Magome, shina, mizizi, majani, mchanganyiko wa dawa ya maji, dawa ya unga unga au nyingine?

Itaje/Elezea

_____

_____

(ii)Ni vitu gani vimepelekea wewe kutumia dawa za kienyeji katika kutatua matatizo ya uzazi?Elezea wala umambo 3.

_____

_____

_____

5.Visababishi vya dawa za kienyeji katika kutatua matatizo ya ugumba.

(i)Ni mambo gani yanasababisha watu kutumia dawa za kienyeji katika kutatua matatizo ya uzazi?

Nini mtazamo wako katika yafuatayo katika kusababisha matutmizi au kutotumia dawa za kienyeji katika kukabili matatizo ya uzazi?

Mtazamo_____

Uwepo wa waganga wakienyeji_____

Upatikanaji wa madawa ya kienyeji yanayosaidia kutatua matatizo ya uzazi_____

Dawa za kisasa/kizungu kushindwa kufanya kazi_____

Nini kingine unafikiri kinachangia matumizi ya dawa za kienyeji katika kukabiliana na matatizo ya uzazi (kutafuta mimba/mtoto)_____

ANNEX 2A: Interview guide for traditional healer.

ID number_____

Residential_____

Working station/area

1. Commonly used Infertility traditional remedies. Name and parts specify

_____

_____

_____

_____

_____

2. How do you know whether the remedies your providing are safe and able to manage infertility.

ANNEX 2A: Interview guide for regulatory authority.

ID number_____

Working station/Area.

Q1. Is there any locally traditional infertility remedy produced/known used in Tanzania for infertility management. Traditional remedy?

Can you mention?

_____

Q2.Is the any authorized traditional infertility remedies,

Q3.What criteria used for authorizing the use of specific infertility remedies as issued by traditional healers.

_____

_____

_____

_____

Q4.How do the safety and effectiveness of the locally used traditional infertility remedies assured for the public health protection.

THANKS FOR THE COOPERATION.

ANNEX 2B:– -Dodoso kwa waganga wa jadi

Kumbukumbu namba_____

Eneo /mahali ulipo_____

1. Katika utoaji wa dawa ya kienyeji kutibu matatizo ya ugumbani unatumia dawa gani?_____

Au ni sehemu gani ya mmea inayotumika mara nyingi

Taja sehemu ya mmea unayotumia ikiwa ni majani, shina au mizizi au nyingine itaje na inatolewa kwa kipimo gani.

_____

_____

_____

_____

2. Gharama kamili ya dawa kwa matumizi ya matatizo ya uzazi unapompatia na ni matumizi ya siku ngapi?

Pesa za Kitanzania_____kwa siku ngapi

3. Unajuaje kuwa dawa uliyompatia au unazotoa zinatibu matatizo ya uzazi?

4. Unajuaje kuwa dawa unayompatia mgonjwa itamtibu na siyo sumu.

_____

_____

ANNEX 3: Work plan

Activity	WEEKS					
	1	2	3	4	5	6
Pre-contact to study sites and initiation of participants recruitment						
Purchase of data collection tools, stationeries and other logistics	‘’’’					
Data collection						
Data cleaning and entry						
Data analysis						
Report writing and dissemination						

ANNEX 4: Budget and justification.

Resource	Unit	Type	Unit	Type	Unit Cost (TShs)	Total Cost (TShs)
Honoraria and operational expenses						
Allowances to researchers: data collection	1	Principle investigator (myself)	14	Substantial allowance	1700	23,800
	2.0	Research Assistants	14	Days	30,000	840,000
SUBTOTAL						**863,800**
Stationers, secretarial services & data collection tools:						
- proposal printing	5	Material	5	Material	45000	225000
- Printing questionnaires	200	Material	200	Material	100	20000
- pen	200	Material	200	Material	200	40000
-printing final report	7	Material	7	Material	35000	245000
-Binding dissertation	7	Material	7	Material	15000	105000
SUBTOTAL						**635,000**
Result publication fee: in Tropical Journal of Medical Research	1	Material	1		-	**-**
TOTAL						**1,498,800.**

JUSTIFICATION OF THE BUDGET

It is estimated that a total of Tsh. 1,498,800 will be needed to carry out this study (as shown in the table above). For effective data collection research assistants who will be composed of one social worker and one medical personnel with good interpersonal relationship, who both will be recruited. Their main role will be, to accompany the principal investigators during the interviews to provide assistance in explaining and clarifying any issues that may need further clarification by either Swahili or English languages and collecting the information. These will

require a total of Tsh. 840,000. Transport expenses by public bus will need Tsh. 23,800 and this will come from Principle investigator (myself) allowances. A total of Tsh635,000will be required for stationery; secretarial services other data collection tools such as proposal printing, Printing questionnaires, pen ,printing final report and Binding dissertation as detailed in the table above**.**

MUHIMBILI UNIVERSITY COLLEGE OF HEALTH SCIENCES DIRECTOR OF RESEACH AND PUBLICATIONS

ANNEX 5A: Informed consent- English version.

ID-NO ☐ ☐ ☐

Consent to participate in this study.

Greetings,

My name is Regina Joseph.

I am a candidate of Master of Public Health at Muhimbili University of Health and Allied Sciences doing a research on ***Dilemmas of using Traditional infertility Remedies among clients seeking Infertility workup in urban Dar es Salaam.***

The aim of this study This study aimed at evaluating the type, source, safety and factors leading to the use of traditional remedies in addressing the infertility problem.

What Participation involves.

Agree to participate in this study, you will be required to answer specific questions as asked by Research assistance and Principal investigator.

Confidentiality.

Neither names nor any personal data will be revealed for confidentiality purpose.

Risks.

Time spent to participate in this study is expected to be within 20 minis, otherwise no any harm shall be subjected to this research.

Benefits

This is purely academic research; your participations may led to future gap filling by policy marker on traditional infertility remedies.

WHOM TO CONTACT

Having a need of any further clarifications as far as this research is concerned please contact this persons.

1. Principle investigator- Regina Joseph

   Email; richard.regina@ymail.com

   Mobile number 0716 299423.

   P.O.BOX 65326 Dar es salaam.

2. The study supervisor- Professor A.D.Kiwara

   Email;anwarakiwara@yahoo.com

   Mobile number: 0716580657.

   P.O.BOX 65001MUHAS, Dar es salaam

3. Chairman of Research and Publications Committee MUHAS, Dar es salaam.

CONSENT.

I _____have read and understood all the content of this form and with no doughty I AGREE TO PARTICIPATE IN THIS STUDY.

Signature of the participant_____

Signature of the participant's witness (for those participant who cannot read)_____

Signature of the research assistance_____

Date of signed consent._____

ANNEX 5 B: Informed consent- Swahili version.

CHUO KIKUU CHA SAYANSI NA AFYA MUHIMBILI
KURUGENZI YA UTAFITI NA MACHAPISHO

FOMU YA RIDHAA.

KUMBUKUMBU NAMBA. ☐☐☐

RIDHAA YA KUSHIRIKI KATIKA UTAFITI HUU.

Salaam,

Jina langu ni Regina Joseph.

Ni mwanachuo wa Chuo Kikuu cha Tibana Sayansi cha Muhimbili. Nafanya utafiti kubaini utata wa usalama na ubora uliopo katika matumizi ya dawa za kienyeji zinazotumika katika kutatu amatatizo ya uzazi haswa tatizo la kupata mimba/mtoto/watoto. Utafiti huu unafanyika Dar ea salaam mjini **kwa wagonjwa wanaohudhuria vituo tiba vya uzazi.**

Madhumuni ya utafiti;

Ni kubainiaina , upatikanaji, usalama wa dawa za kienyeji pamoja na sababu za matumizi ya dawa hizo katika kukabiliana na matatizo ya uzazi.

Namna ya Kushiriki katika Utafiti huu.

Kushiriki katika utafiti huu ni kujibu maswali husika utakayoulizwa na watafiti.

Usiri.

Hakuna mahali utaandika jina lako, na habari zote utakazotoa zitatuzwa kwa siri.

Madhara.

Tunategemea kutumia muda usizid dakika 20 katika mahojiano nawe. Tofauti na hapo hakuna madhara yeyote yanayoweza kukupata kwa kushiriki kwako katika tafiti hii.

Faida.

Utafiti huu ni sehemu ya mafunzo kwa vitendo, habari utakazo tupatia zitaboresha sera za afya katika kutatua matatizo ya uzazi/kupata mimba.

Kwa maelezo zaidi nani wakuwasiliana nae.

Ukiwa una lolote kuhusiana na utafiti huu, wasiliana na watu wafuatao.

1.Mratibu mkuu wa utafiti- Regina Joseph

Email; richard.regina@ymail.com

Mobile number 0716 299423.

P.O.BOX 65326 Dar es salaam.

2.Msimamizi mkuu wa utafiti- Professor A.D.Kiwara

Email;anwarakiwara@yahoo.com

Mobile number:0716580657.

P.O.BOX 65001MUHAS, Dar es salaam

3.Mwenyekiti wa kamati ya chuo ya utafiti na Machapisho

Namba ya simu 2150302-6.

SLP.65001 Dar es Salaam.

RIDHAA

Mimi ----------nimesoma na kuelewa yote yaliyo andikwa humu na kwamba kwa hiyari yangu na kubali kushiriki katika utafiti huu.-

Sahihi ya mshiriki----------

Sahihi ya shahidi ikiwa mshiriki hawezi kuandika.----------

Sahihi ya mtafiti msaidizi----------

Tarehe ya kuridhia kushiriki..----------