The impact of use of traditional medicine on pregnancy outcomes in Chipinge District; Manicaland Province: Zimbabwe

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Abstract

The prevalence of use of traditional medicine to prepare for child birth in Chipinge district is pronounced. No research has been done to examine the impact of use of traditional medicine on pregnancy outcomes in Chipinge district. It is from this background that this study was conducted to determine the impact of traditional medicine on pregnancy outcomes. An unmatched 1:1 case control study design was used to assess the pregnancy outcomes of 40 mothers who used traditional medicine and 40 mothers who did not. The mothers were between 20 and 35years of age, parity range of 1 to 4, identified from the delivery record of Mahenye and Mabee record book, period July 2015 and February 2016. The most commonly used traditional medicine was elephant dung. A young age (20-25years) and perceiving that traditional medicine is effective were associated with using traditional medicine. Low knowledge of traditional medicine and low knowledge of health risks of traditional medicine was protective of using the medicine. Precipitate labour was significantly associated with the use of traditional medicine for childbirth.

Key words: traditional medicine, pregnancy outcome, precipitate labour

Introduction

In Europe, North America and other industrialized regions, over 50% of the population have used complementary or alternative medicine at least once. In Africa, 80% of the people use some form of traditional herbal medicine and the world wide annual market for the products approaches US$60 billion (WHO, 2007). In China, traditional herbal preparations account for 30%-50% of the total medicinal consumption. In Ghana, Mali, Nigeria and Zambia, the first line of treatment for 60% of children with high fever resulting from malaria is the use of herbal medicines at home, (WHO, Fact Sheet, 2003).

Findings of a multinational study that was conducted on 9 459 women from 23 countries on the use of traditional herbal medicine in pregnancy showed that 28.9% of respondents reported the use of herbal medicine in pregnancy. The highest reported use was in Russia (69%), in Europe (51.8%), and Australia (43.8%), (Deborah A Kennedy, Angella Lupattelli, (2013), Herbal medicine use in pregnancy).

Locally in Zimbabwe, a cross-sectional study was conducted on 248 women from selected Harare clinics, to determine patterns of prenatal use of traditional herbal medicine in pregnancy. Fifty two percent (52%) of the interviewed women used at least one traditional herbal medicine intervention during the third trimester for their most recent pregnancy. The herbal medicine was mainly used to induce labour and avoid perineal tearing and improving the safety of the delivery process, (Dudzai D. Muray, et al, 2012).

Although such a high use of traditional medicine is to try and improve safety of the delivery process, maternal mortality is still high globally, regionally and locally. When modern medicine does not guarantee safe delivery, people tend to use alternative medicine. The

Zimbabwe Multiple Indicator Cluster Survey[2014] defines maternal mortality as all deaths that occur to women during pregnancy, during delivery and up to 2 months after delivery. Some of the leading causes of maternal mortality include obstructed labour, pre-partum and postpartum haemorrhage (Maliwichi, 2002). The Zimbabwe, maternal and neonatal health roadmap, 2007-2015 suggests that most complications leading to maternal and neonatal deaths occur during delivery (25%) or immediately thereafter (60%).

Globally, there were an estimated 289 000 maternal deaths in 2013 a decline of 45% from 1990. Regionally, Sub-Saharan Africa carried 62% (179 000) of global maternal deaths followed by Southern Asia at 24 % (69 000). At country level the two countries that account for one third of global maternal deaths are India 17 % (179 000) followed by Nigeria 14 % (40 000), (WHO, UNICEF, UNFPA, World Bank and United Nations Populations Division, (2011),Trends in Maternal Mortality).

Locally, the Zimbabwe Multiple Indicator Cluster Survey (MICS, 2014) shows that the current MMR is at 581 deaths per 100,000 live births. There is not much documentation and research on the impact of traditional medicine on pregnancy outcomes. It is against this background that this research project seeks to determine the impact of the use of traditional medicine on pregnancy outcomes. The study will be conducted amongst mothers in Chipinge district, findings of this study may be used to improve maternal and reproductive health for women in Chipinge district.

Background

Chipinge district has a total population of 283 792 people and an estimated population of 59 799 children under five years of age. The major tribes in the district are Ndau, Shangani, and Shona speaking tribes (Chipinge District Communication Strategy, MOHCC, 2009).

Chipinge District Hospital is the main referral hospital for 3 mission hospitals and 46 rural clinics, It serves an estimated total population of 360 000 people, 54 360 under 5s, 82 200 women of child bearing age with 16 200 expected pregnancies. Out of this population, the urban population accounts for 12 546, the under 5 year population is 2 146, women of child bearing age are 2 949 and expected pregnancies are 74 199 (Chipinge District Health Data, 2014).

The District Hospital monthly maternity admission were 300 patients, normal monthly vaginal deliveries were 240, lower segment caesarean section were 35, and monthly referrals were 110 cases. The statistics in table 1.0 shows the trends in maternal health indicators over the past 4 years starting from 2010 to year 2013.

Table 1.0: **Maternity department Statistics:** (Delivery Outcomes)

	2010	**2011**	**2012**	**2013 (half year)**
Deliveries	2527	2615	2668	2735
LSCS	158	148	197	383
Vacuum extraction	20	42	44	58
Live births	2211	2382	2345	2672
Maternal referrals	103	101	132	110

Source: Chipinge District Hospital data, 2014

According to the Campfire report of 2009, the lower part of Chipinge that covers Mahenye and Mabee Clinics houses the Gonarezhou national park. This park is shared between the population of the Shangan speaking people and wild life such as elephants. A rapid assessment at Mahenye clinic reviewed that the use of traditional herbal medicine to prepare for child birth is high amongst the Shangani and Ndau speaking people. The most commonly used traditional medicine for preparing for childbirth is elephant dung.

Problem Statement:

The prevalence of use of traditional medicine to prepare for child birth in Chipinge district is so pronounced, (Mahenye Clinic maternity rapid assessment report, 2014).

Chipinge district hospital recorded a total of 76 meconium aspiration cases, 32 post partum hemorrhage cases, 4 third degree vaginal tears and 36 preterm labour cases, (Chipinge district hospital maternity data, 2015). Mahenye clinic had a total of 14 second degree vaginal tears amongst mothers who delivered at the clinic, (Mahenye Clinic maternity data, 2014). Chipinge district hospital is the main referral hospital to a total of 52 health facilities within Chipinge district. In the year 2013 the hospital received a total of 110 maternity referrals of the 2735 deliveries, (Chipinge Hospital maternity data, 2013).

There has not yet been much research or documentation on the impact of use of traditional medicine on pregnancy outcomes. It is from this background that this study seeks to determine the impact of use of traditional medicine on pregnancy outcomes.

Purpose of the study was to determine the impact of use of traditional medicine on pregnancy outcomes among 20 to 35 year old mothers in Chipinge district

Specific Objectives were:

- To determine the use of traditional medicine to prepare for childbirth by 20-35 year old mothers who delivered at Mahenye and Mabee clinics between July 2015 and February 2016
- To assess the knowledge on traditional medicine and childbirth of the 20-35 year old mothers who delivered at Mahanye and Mabee clinics between July 2015 and February 2016
- To establish the perceived health benefits and risks of use of traditional medicine by the 20-35 year old mothers who delivered at Mahenye and Mabee clinic between July 2015 and February 2016

- To asses the effects of use of traditional medicine on labour progression and pregnancy outcomes in 20-35 year old mothers who delivered at Mahenye and Mabee clinic, July 2015 and February 2016
- To make recommendations

An insight into literature related to use of traditional medicine and pregnancy outcomes was reviewed.

Studies on traditional medicine and pregnancy outcome:

Herbal medicine use in Pregnancy: Europe, North, South America and Australia

A multi-national study was conducted to determine how women treat disease and pregnancy related diseases health ailments. The study was conducted in Europe, North and South America and Australia. The study sample was made up of 9 459 women from 23 countries, of these 28.9% reported the use of herbal medicines in pregnancy, Most herbal medicines were used for pregnancy related health ailments such as cold and nausea. The highest reported use of herbal medicines was in Russia (69%), women from Eastern Europe (51.8%), and Australia (43.8%). Women using herbal medicines were characterized as having their first child, non-smokers, using folic acid and women who were currently students, (Deborah A Kennedy, 2013).

The major differences between this study and the summarized 2013 multinational study are, difference in settings, study designs and study samples. The 2013 multinational study was conducted at regional level whilst this current study is only at district level and confined to Zimbabwe.

A study done in Malaysia revealed that the most common indication for the use of traditional medicine was to augment labour. The older generations and in-laws suggested the use of herbal medicine, (Azriani Ab. Rahab etal, 2008).

Herbal medicine knowledge and practice

In another study conducted on 460 Malaysian women, the findings revealed that the most commonly used herbal medicine were Anastastica hierochuntia (60.1%), followed by coconut oil (35.4%). The majority of the women (89.2%) used only one type of herbal medicine and took one capsule 38% per day. Herbal medicine used by women is largely unsupervised (81%), with most women getting information from their parents (60.7%) and buying the product directly from midwives (32.2%).

A study conducted in the Middle East revealed that the commonly used herbs were peppermint, ginger, thyme, chamomile, sage, aniseed and green tea. The reasons for use of herbal medicine were treatment of gastrointestinal disorders, cold and flue-like symptoms, (LishaJ.Johnetal, 2015). In this study, the researchers set out to determine the types of traditional medicines used by mothers in Chipinge district as well as the impact of the medicines on pregnancy. Similaritites were drawn from other countries where the use of traditional herbs was practiced A statistically significant association was found in a Nigerian study between herbal medicine use and no formal education, low economic status. The common herbs used included ginger and garlic (Tamuno et al, 2015).

In North West Province of South Africa, findings revealed d that traditional medicine was not only used to prevent or solve physical problems but to protect against harm from evil spirits during labour. The use of crushed egg shells was believed to be for inducing labour. It was also discovered that communication between the pregnant mothers and midwives on traditional medicine was poor thereby hindering reporting on recording of dosage and evaluation effect, (Roland van der Kooi, 2006).

Studies done in Zimbabwe revealed that the herbal medicine used by pregnant women was mainly for induction of labour and prevention of tears proving the safety of the delivery process, (Dudzai D. Muray, e.tal, 2012).

Utilisation of the Health Belief Model assists to understand issues of behavior change. The Model is a cognitive theory which focuses on cognitive variables as part of behaviour change, and assumes that attitudes and beliefs, as well as expectations of future events and outcomes, are major determinants of health related behangehaviour. The HBM views health behaviour change as based on a rational appraisal of the balance between the barriers to and benefits of action. Ogden J.(2007). In this study, some components of the Health belief model will be used to analyze the adoption of the behavior of using traditional medicine to prepare for child birth by pregnant mothers. Amongst the key components that will be used are perceived benefits and perceived threats in behavior adoption.

Perceived benefits are an individual's assessment of the positive consequences of adopting the behaviour. It is opinion based, not everyone adopts the same behaviors. A person is likely to adopt behaviors that they you think will decrease the chance of getting a disease.
Perceived susceptibility is an individual's assessment of their risk of getting the condition. The greater the risk is of getting a certain medical condition, the more a person will engage in behaviors to decrease the risk.

In trying to work towards behavior change, several other concepts such as the diffusion of innovation theory. This is a concept, behavior, or technology that is new to an individual. Diffusion takes place in stages (awareness, implementation and maintenance) and may occur through formal and informal channels. Some people naturally adopt innovations much earlier

than others. The attributes of an innovation affect willingness to adopt it, and these can be manipulated, (National Cancer Institute, 2005).

Key concepts are Stages of diffusion, Channels of communication, Roles: opinion leaders, change agents, change aides, Adopter categories (e.g., innovators, early adopters), Attributes affecting diffusion (e.g., relative advantage, complexity).

In the case of the current study, the innovation is the behavior of use of traditional medicine to prepare for child birth. This study looked at how the society and environmental factors influence mothers to take up the behavior of using traditional medicine. The same components of the theory may be applied to unlearn a behavior if it is considered harmful to health.

On the other hand, The Social Learning theory may also apply. In this theory, three main factors contribute to behavior change. These are self-efficacy, goals and outcome expectancies. People must believe that their action will make a difference and that the result will be beneficial. They must have the ability and skills necessary to act and self-efficacy (the belief that they will be successful in carrying out the action). Role models are effective in encouraging behavior change. Both social and physical environments may create barriers or facilitate change, (National Cancer Institute, 2005).

METHODOLOGY

An unmatched 1:1 case control study design was used. This study is to determine the impact of use of traditional medicine on pregnancy outcomes, so a case control study was used to compare the pregnancy outcomes of mothers who used the medicine and those who did not. This enabled the identification of factors associated with use of the medicine and factors common in users and non-users.

The study was conducted at Mahenye and Mabee clinics in Chipinge district. The practice of use of traditional medicine to prepare for child birth is more pronounced in mothers within the catchment of these 2 Clinics in Chipinge district. Mahenye Clinic serves the Shangani speaking people within the Gonarezhou national park and the maternal health rapid assessment that was conducted in that area showed that mothers from this population use items such as plant extracts and animal products as traditional medicine for childbirth.

The study population included Mothers between 20 and 35years of age, less than 6 months post-delivery and within a parity range of 1 to 4. The mothers delivered at Mahenye and Mabee Clinics in the period July 2015 and February 2016.
Delivery records were analyzed.

By definition, cases were mothers who used traditional medicine to prepare for childbirth, 20 and 35years of age, within a parity range of 1 to 4, delivered at either Mahenye or Mabee clinic between July 2015 and February 2016. Controls were mothers who did not use traditional medicine to prepare for child birth, 20 and 35years of age, within a parity range of 1 to 4, delivered at either Mahenye or Mabee clinic between July 2015 and February 2016.

A total sample size of 80 was used, 40 cases and 40 controls. It was calculated using Epi-Info 7, two sided confidence level of 95%, Power 80% and the assumption of the percentage of controls exposed to low literacy (never attended formal education) is 22%.

Purposive sampling was used, purposive sampling in the sense that specific people were specifically targeted (Mothers who delivered at Mabee and Mahenye Clinic). This enabled the tracking of specific indicators in the specific relevant people, thus the limited resources of were thus used on the people who can be affected with the practice. The maternity delivery book at

each of the 2 health facilities was used to identify study participants. The mothers selected in the study population were purposively initially more than 80, this created room for the decrease in size due to the screening process. The study population was made up of mothers who met the inclusion criteria below:

- Delivered at either Mahenye or Mabee Clinic
- Delivered within the period July 2015 to February 2016
- Within the 20 to 35 years age group
- Within a parity of 1 to 4

Household visits were conducted to access the selected mothers for an informed consent. Mothers who accepted to participate in the study made up the study sample. The mothers were further asked whether they used traditional medicine to prepare for childbirth in their most recent child birth. Those that used traditional medicine were the cases, those that did not were the controls. The process led into getting the final 20 cases and 20 controls per clinic, collectively the 2 clinics had 40 cases and 40 controls to make the total sample size of 80 participants.

Pretesting was done on 10 respondents from Uketi village in ward 30; the pretested ten respondents were not included in the study. The pretest process was to enhance reliability and validity of instruments. The results of the pretest were used to improve the data collection tools. For data collection, guided interviews were conducted to assess on variables such as demographics, knowledge, practice and perceptions. A checklist was used to analyze each respondent's maternity delivery record at the health facility. This was to ascertain the impact of the practice on pregnancy outcomes.

Data analysis was done using Epi-Info version 7, univariate, bivariate and multivariate analysis was conducted. Results were presented on frequency tables, graphs, cross tabulation and chi-squared test tables. Qualitative data from open-ended questionnaires were analyzed manually using themes.

Ethical considerations

Permission to conduct the study was sought from the Faculty of Healthy Sciences, (Africa University Research Ethics Committee) AUREC and the Provincial Medical Director (PMD) Manicaland through the District Medical Officer (DMO).

Permission was sought to interview participants as well as permission to access maternity delivery records at health facilities from the DMO. Participants were not harmed in the process and their names were not used for any purposes without their consent. A high degree of privacy and confidentiality was maintained.

Those that could not write showed that they accept to participate in the research through a finger print. Those that could not read would listen to the verbal communication in the local language.

Results

Findings are presented in the form of pie charts, bar graphs, tables and paragraphs.

Table 1.1, Demographic data, (N=80):

	Characteristics of Participants		**Cases (%)**	**Control (%)**
1	Clinic and Ward Mabee	Ward 28	20 (50)	20 (50)
	Mahenye	Ward 30	20 (50)	20 (50)
2	Age	(20-25)yrs	26 (65)	13 (32.5)
		(26-30)yrs	11 (27.5)	13 (32.5)
		(31-35)yrs	3 (7.5)	14 (35)
3	Parity	1	21 (52.5)	16 (40)
		2	9 (22.5)	8 (20)
		3	2 (5.0)	12 (30)
		4	8 (20)	4 (10)
4	Marital status of participant	Single	3 (7.5)	1 (2.5)

		Married	37 (92.5)	37 (92.5)
		Divorced	0 (0.0)	1 (2.5)
		Widowed	0 (0.0)	1 (2.5)
5	History of C-section	Yes	5 (12.5)	6 (15)
		No	35 (87.5)	34 (85)
6	Age of most recent child	<2 months	19 (47.5)	19 (47.5)
		(2-4)months	7 (17.5)	9 (22.5)
		(4>-6)months	14 (35.0)	12 (30)
7	ANC booking on recent child birth	Yes	34 (85)	35 (87.5)
		No	6 (15)	5 (12.5)
8	Highest level of Education	None	7 (17.5)	5 (12.5)
		Primary	26 (65)	19 (17.5)
		Secondary	7 (17.5)	13 (31.5)
		Tertiary	0 (0.0)	3 (7.5)
9	Religion	ATR	5 (12.5)	3 (7.5)
		Protestant	13 (32.5)	12 (30.0)
		Apostolic	12 (30.0)	20 (50.0)
		Pentecostal	2 (5.0)	4 (10.0)
		Atheist	8 (20.0)	1 (2.5)
10	Average monthly HH income	<$10.00	39 (97.5)	35 (89.7)
		$10-$50	1 (2.5)	4 (10.26)

4.2. Demographics:

Age of respondents

The study sample was divided into 3 age groups, (20-25), (26-30) and (31-35) years of age. Amongst the three, the most dominant age group was the 20 - 25 years age group, this made 49% of the study population. Consequently, the same age group dominated the cases contributing to 65% of the cases. The least was the 30-35 years age group which made 9% of the study sample, 7.5% of the cases and 35% of the controls. This implies that more young mothers (20-25) years used traditional medicine to prepare for pregnancy more than older mothers (31 to 35) years of age, 65% and 13% respectively.

Most respondents (46%) had a parity of 1, this was 52.5% of the cases and 40% of the controls. Respondents with a parity of 4 were the least making 30% of the participants, 20% of the cases and 1% of the controls. The trends show that mothers of a parity of 1 used traditional medicine more than those with a parity of 4.

A cross tabulation was done to analyze the relationship between age and parity. The majority of the participants (26) 32.5%, had a parity of 1 and within the 20 to 25 years age group. The least group was that of participants with a parity of 1 and within the 31 to 35 years age group, such a group made 1.3% of the study sample. Parity increased with age and young mothers used traditional medicine more than older mothers (31-35) years.

Marital Status

The study sample was dominated by participants who were married 74 (92.5%), this was (92.5%) of the cases and controls (92.5%) of the controls. One participant 2.5% in the cases and controls was widowed or divorced. Cases carried more single mothers (3) than controls (1). This means that more single mothers used traditional medicine relative to married mothers.

History of delivering through Cesarean section

The controls had more mothers who had a history of delivering through cesarean section (6) than cases (5). Mothers who had a history of delivering through cesarean section made 11/80 of the study sample. This shows that a history of cesarean section was not associated with use of traditional medicine for delivery. The assumption is that delivering through cesarean section whilst having used traditional medicine may be perceived as an indicator that the medicine is not effective. This perception may limit further use of the medicine.

Age of the most recent child

Children most recent to the participant were below 2moths of age and these made 38 (47.5%) of the study group. This meant the majority of the respondents were within 2months of having given birth. This also meant that the period of recall for the participants was almost the same for all mothers. If there are chances of recall bias due to time, the bias will be generally evenly distributed across all the respondents.

Booking for ANC

Consequently, a significant fraction of the study group (69/80) had booked for Ante-natal care during the pregnancy of their most recent child. However, controls (35) had booked for ANC compared to cases (35). This shows that more mothers who did not use traditional medicine accessed health education on modern MNCH more than those that used. ANC sessions discourage mothers from using traditional medicine to prepare for childbirth.

Level of Education

The highest level of formal education attained, 45 out of 80 participants acquired education up to primary level, Cases had slightly higher participants without any formal education (7) compared to controls (5). This suggests that having some formal education was protective against the use of traditional medicine. This may imply that formal education increased literacy levels hence increased use of modern MNCH services.

Religion

In terms of religion, the apostolic sect church made most of the respondents (12/40) cases and 20/40 controls, Nine of the respondents did not belong to any religious group that is 8 cases and 1 control. This shows that although most mothers are from the apostolic sect, the group used the medicine relatively less than mothers from other religious groups.

Use of Traditional Medicine:

Amongst the 40 mothers who used traditional medicine to facilitate child birth, 35 out of 40 (87.5%) cases had used the medicine to prepare for child birth in their first pregnancy. Chances of using traditional medicine with the second pregnancy, given that one once used it in the first pregnancy were higher. The experience of use or the results of use in the first pregnancy may have influenced the clients' decision

The most common type of traditional medicine used by the mothers to prepare for childbirth was elephant dung, 22(55%) of the cases reported to have used elephant dung. Seven participants (17.5%) reported to have used elephant dung and other plant solutions. Eight participants, (20%) used unknown plant extracts as traditional medicine to prepare for child birth. The findings are summarized in fig 1.1.

Scientific quantifications of traditional medicine is a challenge, mixing two or more different types of medicines is likely to have a varied effect due to varied chemical compositions. Use of unknown plant solutions may be the reason for varied pregnancy outcomes.

Fig 1.1: Types of traditional medicine used to prepare for childbirth (N= 40):

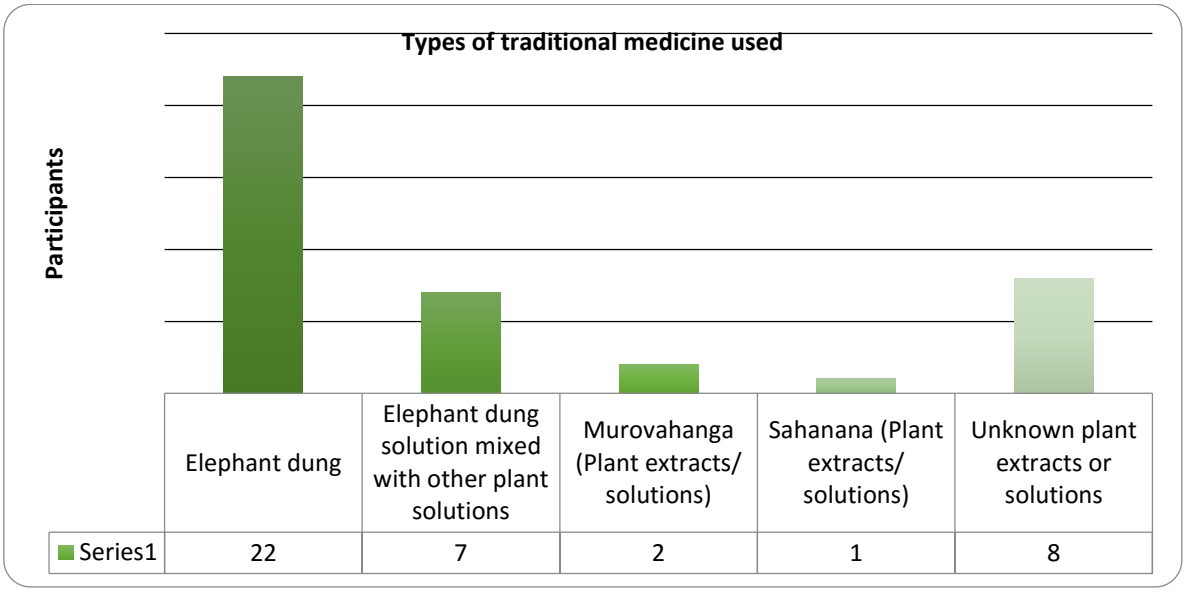
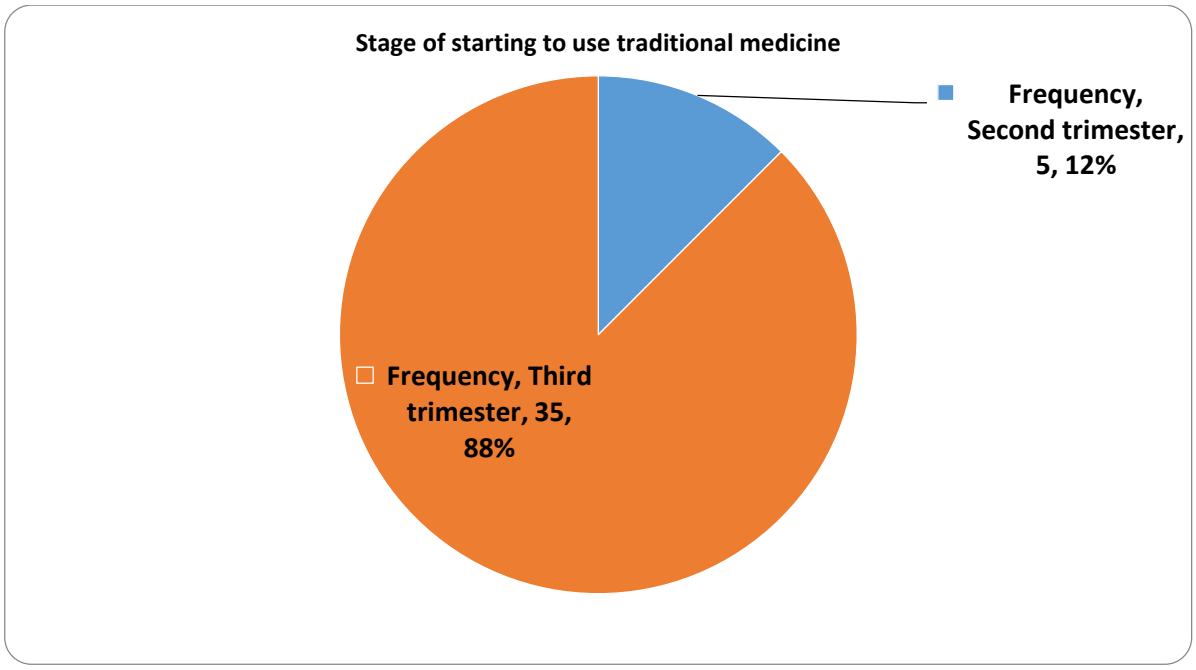


Fig 1.2: Stage of pregnancy of starting to use the traditional medicine (N=40)



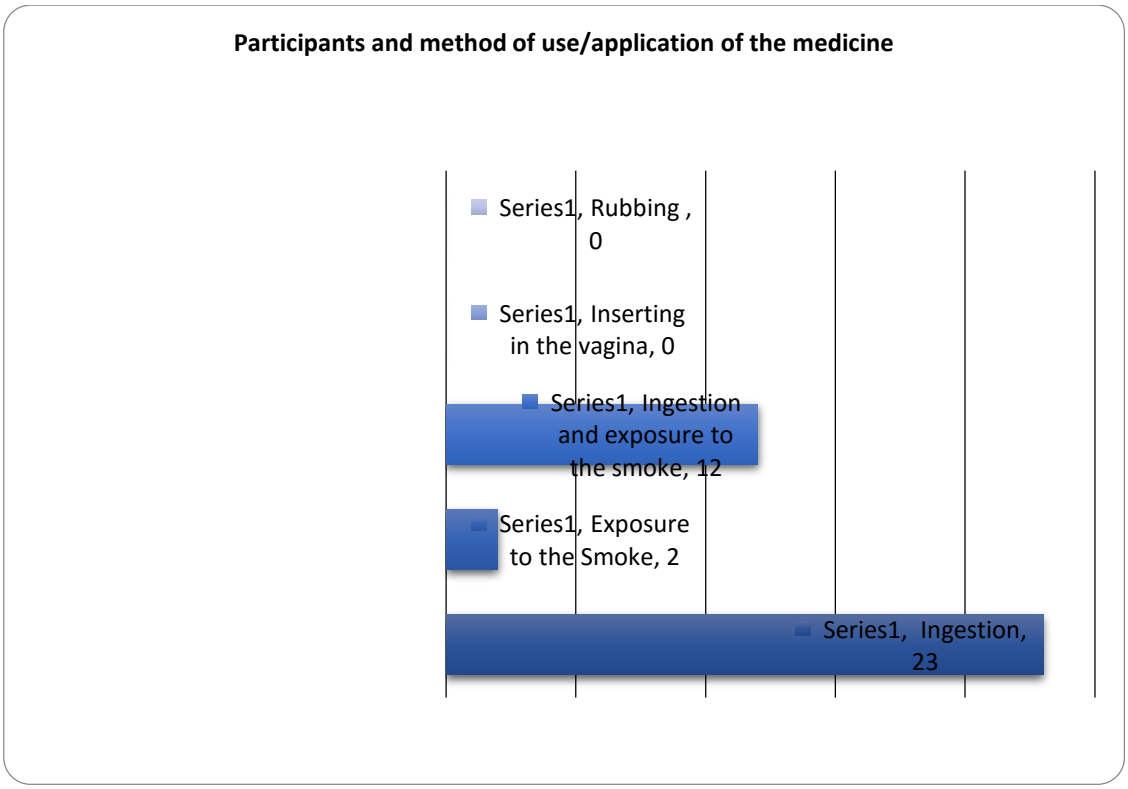
Most participants (88%) reported that they started using or applying the medicine in the third trimester and 12% reported that they started in the second trimester. There are no participants who started applying traditional medicine in the first trimester.

Method of use of the traditional medicine by pregnant mothers:

Twenty three out of forty participants reported that they ingested the traditional medicine solution. Some (2/40) reported that they burn elephant dung and expose their vagina to the smoke of the elephant dung. This was a common method in Mahenye village ward 30, some respondents used both the smoking method and the ingestion method. The findings are summarized in fig 1.3.

Gaseous forms of the medicines carry less concentrations of the medicine relative to liquid solutions. Respondents who use both methods are also likely to experience more toxic

Fig 1.3: Method of use of the traditional medicine (N=37)



A cross-tabulation was made on the socio-demographic charateristics of the respondent and practice of traditional medicine.

Table 1.2, Socio-demographics and use of traditional medicine (N=80)

Characteristics	Cases n(%)	Controls n(%)	OR	(95% CI)	P Value
Age, (20-25) years (31-35) years	26 (89.67) 3 (10.34)	13 (48.15) 14 (51.85)	9.3333	(2.2705 38.3658)	0.000449
Parity of participant Para 1 Para 4	21 (72.41) 8 (27.9)	16 (80) 4 (20)	0.6563	(0.1676 2.5701)	0.73772
History of C-section No history of C-section	5 (12.5) 35 (87.5)	6 (15) 34 (25)	0.8095	(0.2257 2.9035)	0.3795
Did not book for ANC Booked for ANC	6 (15) 34 (85)	5 (12.5) 35 (87.5)	1.2530	(03444 4.4407)	0.3795
Monthly HH <$10.00 $10.00 to $50.00	39 (97.5) 1 (2.5)	35 (89.7) 4 (10.26)	4.4571	(04753 41.7989)	0.20072
No formal education Formal education	7 (17.5) 33 (82.5)	5 (12.5) 35 (87.5)	1.4848	(0.4287 5.1428)	0.2759

The odds of using traditional medicine to prepare for child birth was 9.3333 times higher in respondents within the age group 20 to 25 years than in respondents within the 31 to 35 years of age. The odds ratio was statistically siginificant with a p value of less than 0.005. This means that use of traditional medine was higher in younger mothers 20-25years than in older mothers 31-35years.

Respondents with a parity of 1 and respondents with a history of delivering through a cesarean section had a low odds ratio of using traditional medicine than those that had a parity of 4 and those that had no history of previous cesarean section. The results were not statistically significant. Having a history of delivering through cesarean section is protective.

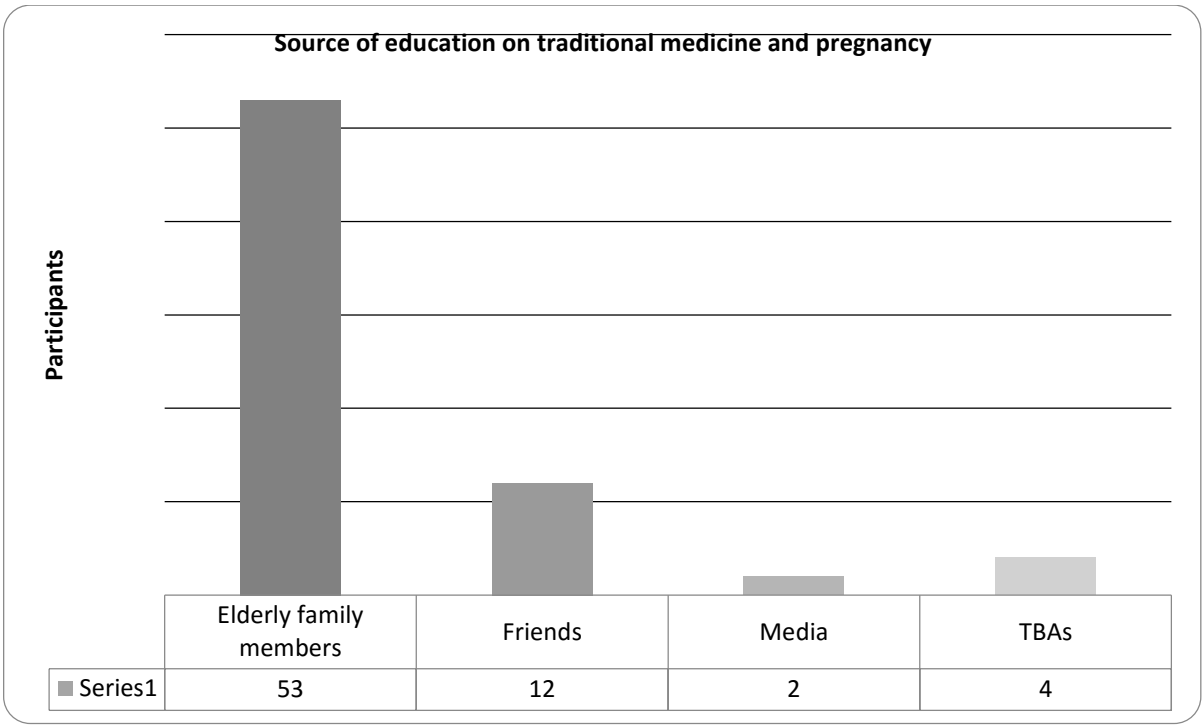
The odds of using traditional medicine to prepare for child birth was higher in participants who did not book for ANC on their previous pregnancy. However the odds ratio was not statistically significant because the confidence interval spanned 1 and the p values were greater than 0.005. The same applied to participants from a household with a monthly income less than $10.00 USD and participants without a formal education. A low household monthly income can also be barring to access to modern MNCH services hence respondents resorting to use traditional medicine. TM is locally available and can be accessed at no financial cost.

Table 1.3: Knowledge of types of Traditional medicine (TM) for child birth (N=80)

Types of TM known	Cases n (%)	Controls n(%)	OR	OR (95% CI)	P Value
1 type or No idea	18 (45)	31 (77.5)	0.2375	(0.0901 0.6259)	0.001654
2 or more	22 (55)	9 (22.5)			

Those that knew at most one type of a traditional medicine were 0.2375 less likely to use traditional medicine to prepare for child birth compare to those that knew at least 2 types of traditional medicine. The likelihood is statistically significant, the confidence interval (0.0901 0.6259). This implies that a low knowledge of types of traditional medicine is protective of using traditional medicine to prepare for child birth. According to social behavior change communication, behavior change is influenced by a high knowledge of the desired behavior. The more knowledge one has on types of traditional medicine the higher the likelihood of use.

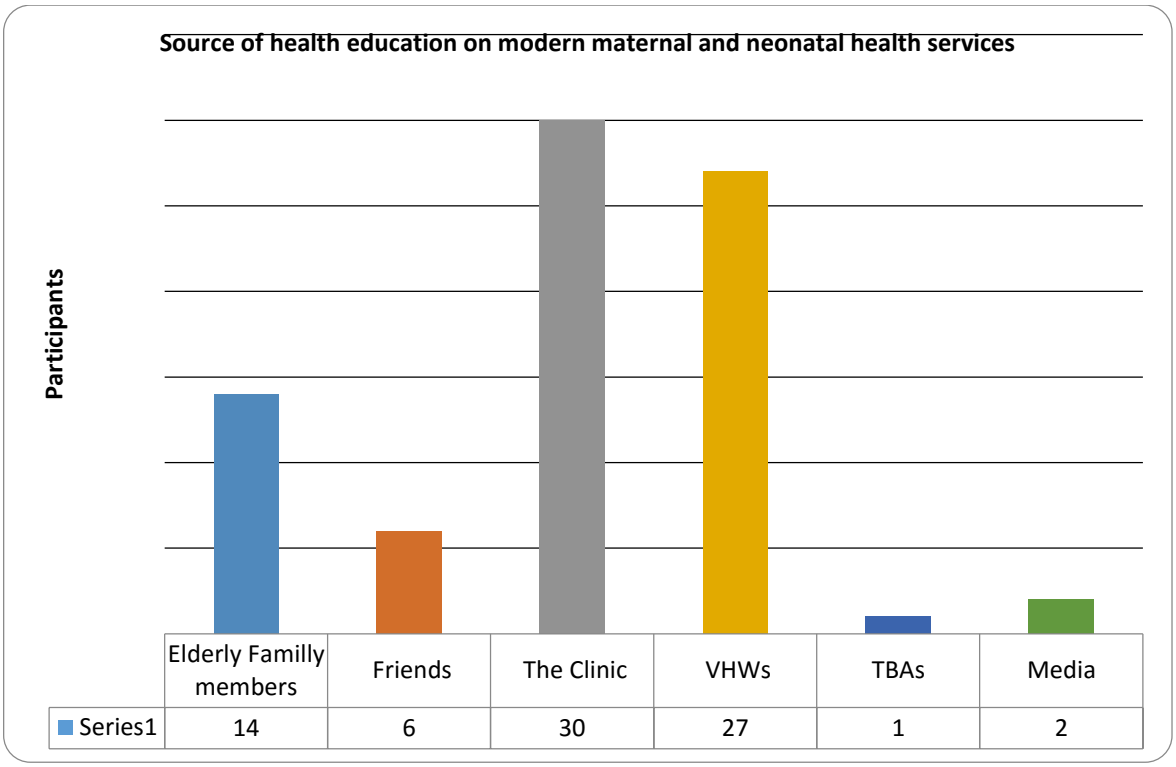
Fig 1.4: Sources of health education on traditional medicine and childbirth (N=80)



Most participants 53 pointed out that they got education on the use of traditional medicine to prepare for child birth from elderly family members. In most cases elderly family members are culturally considered to be advisors in the family. A small group of people said that they learn about traditional medicine from the electronic and print media. The most common forms of electronic media were cell phones, radios and newspapers.

Family members are the most immediate sources of health education and they are considered more culturally reliable hence they have significant influence on health behavior. This may be the reason for the high use of traditional medicine. Traditional birth attendees have since been stopped to operate end they grew less popular hence their influence to maternal health has also decreased. Intervention by the Ministry of health and partners have been intensified to stop unsafe practice by the TBAs.

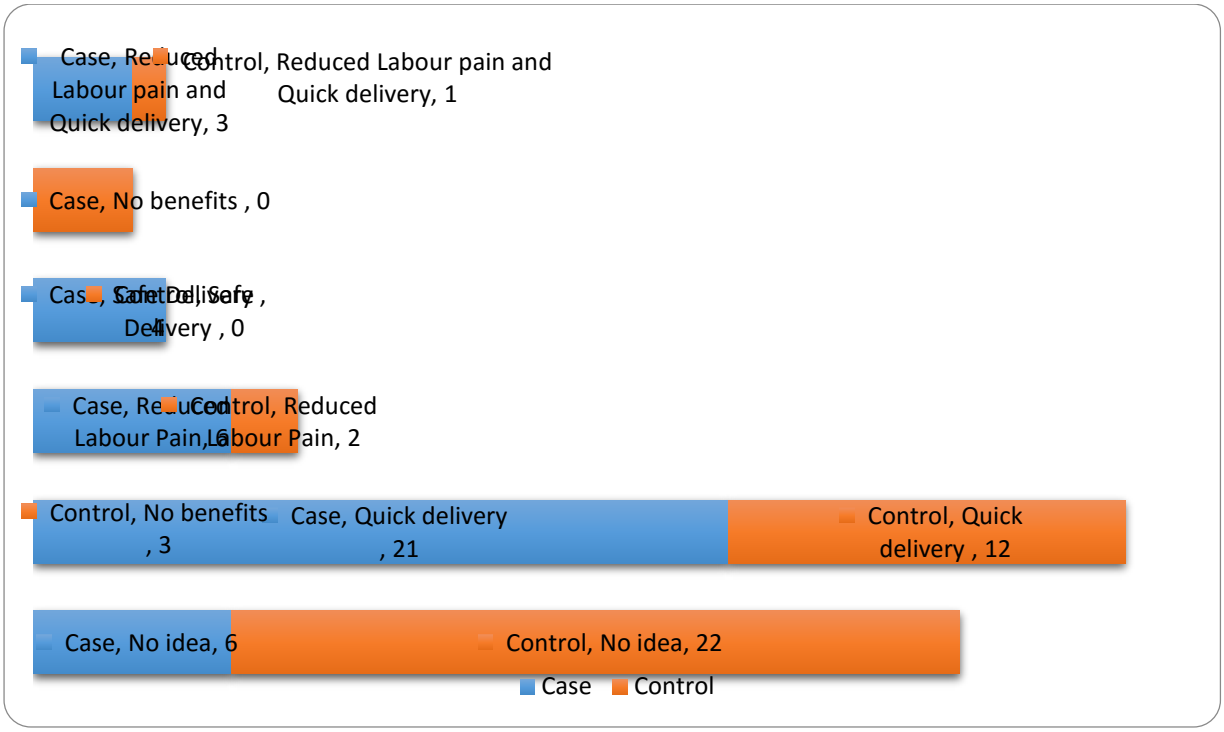
Fig 1.5: Source of health education on modern MNCH (N=80)



The local health centers, Mahenye Clinic and Mabee Clinic were pointed out to be the major source of health education for access to modern maternal and neonatal health services. Most women access the information during Antenatal Care visits and sometimes during related health workers community outreaches. Second to the clinic, the Village health workers were also pointed to be an important source of health education on maternal and neonatal health. Only 1 respondent said that she got information from the TBA (traditional birth attendees).

The Clinic and Village Health works have more influence on use of modern maternal and neonatal health services because there has been a series of interventions by the ministry and different partners to promote safe MNCH practice. In addition, due to the need to be safe from stray animals from the Gonarezhou national park the settlement pattern in Mahenye is characterized by villages clustered around the health centre.

Fig 1.6: Perceived benefits of using traditional medicine (N=80)



Most respondents, 6 cases and 22 controls had no idea of the benefits of using traditional medicine in preparing for child births. Consequently, only 3 controls pointed out that there are no benefits obtained from using traditional medicine. The most perceived benefit of using traditional medicine was quick delivery followed by reduced labour pain.

Although some people have no idea of the benefit of using traditional medicine, they are using it. This behavior may be due to the desire to meet the cultural norms and expectations. Psychologically, a mother may develop a sense of belonging and identity when she does what most women in her culture do to prepare for child birth.

A cross tabulation was made on one' perceptions of using traditional medicine and whether they used traditional medicine or not.

Fig 1.4, Perceived benefits of using traditional medicine (N=80)

Perceptions	Cases n(%)	Controls n(%)	OR	OR (95% CI)	P Value
TM is useful for childbirths TM is not useful for child birth	34 (85) 06 (15)	12 (30.77) 27 (69.23)	12.7500	(4.2332 38.4018)	0.000005
Most successful births are Yes due to TM No	24 (60) 16 (40)	07 (17.5) 33 (82.5)	7.0714	(2.5191 19.8506)	0.000005
Most women use TM Most women do not use TM	27(67.5) 13(32.5)	23 (57.5) 17 (42.5)	1.5351	(0.6170 3.8194)	0.18421

Participants who pointed out that traditional medicine is useful in facilitating child births were 12.75 times more likely to use traditional medicine to prepare for child birth compared to participants who said traditional medicine is not useful and those who had no idea. The association is statistically significant.

The odds of using traditional medicine to prepare for child birth was 7.040 times higher in respondents who pointed out that most successful child births are due to the use of traditional medicine compared to participants who said that most successful child births are not due to the use of traditional medicine. The odds of using traditional medicine by mothers who pointed out that most women use traditional medicine to prepare for child births was 1.5351 higher than in mothers who disagreed that most women use traditional medicine to prepare for childbirth.

A cross-tabulation was made between respondents' socio-demographic characteristics and whether traditional medicine is useful or not in preparing for child birth.

Fig 1.5: Socio-demographics related to usefulness of TM on childbirth (N=80)

Social-demographic characteristics	Traditional medicine is :				
	Useful n(%)	Not Useful n(%)	OR	OR (95% CI)	P Value
No formal education Primary education or more	6 (13.04) 40 (86.96)	6 (18.18) 27 (81.82)	0.6750	(0.1968 2.31490	0.2733
Parity 1 Parity 4	21 (72.41) 8 (27.59)	15 (88.26) 2 (1.76)	0.3500	(0.0649 1.8878)	0,1182
History of C-section No history of C-section	7 (15.22) 39 (84.79)	29 (87.88) 4 (12.12)	0.0248	(0.0066 0.0926)	0.000000

The odds of pointing out that traditional medicine is useful was very low for participants who had no formal education, a parity of 1 and a history of cesarean birth relative to the odds of participants with at least primary education, a parity of 4 and no history of cesarean section respectively. The odds are not statistically significant.

Having no formal education and a parity of 1 is protective of perceiving that traditional medicine is useful in preparing for child birth. History of cesarean section is also protective of saying that the medicine is useful, This protective effect is statistically significant.

Perceived health risks of using traditional medicine:

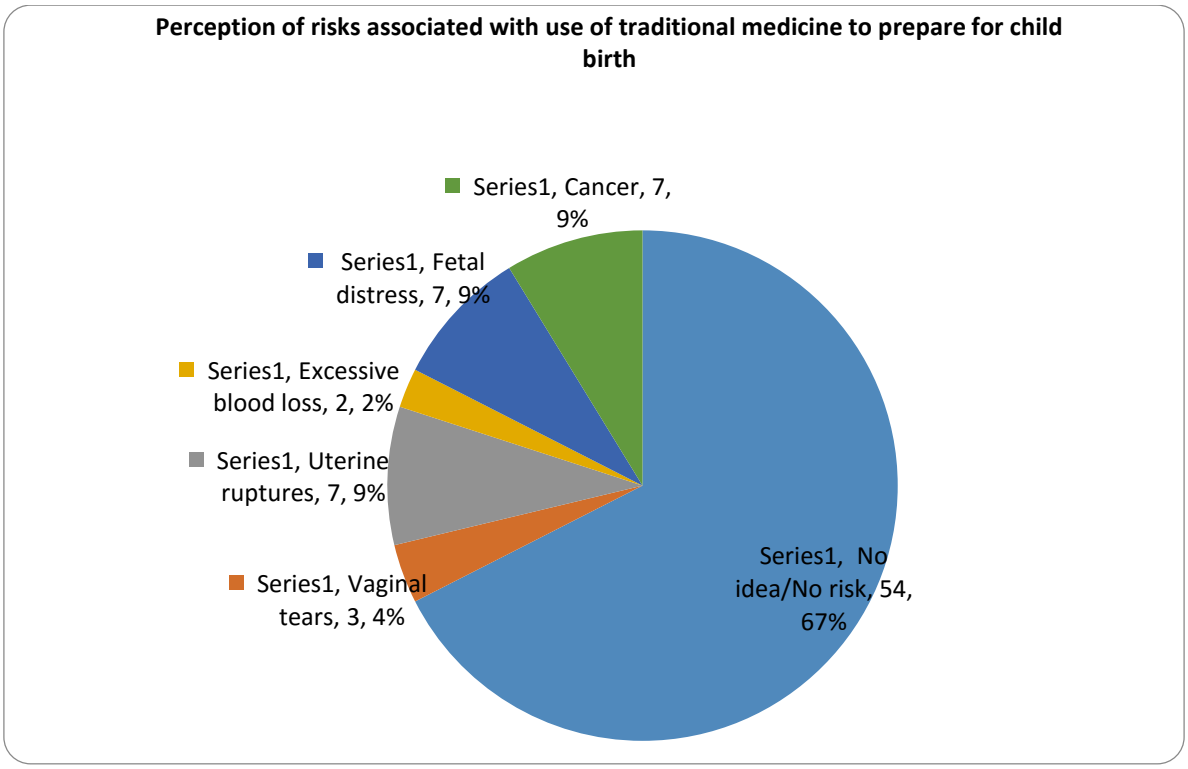
A cross tabulation was made between one of the perception on traditional medicine and use of the medicine. The results are summarized in a table in Fig 1.6.

Fig 1.6: Perception of risks of using traditional medicine for child birth (N=80)

Characteristic	Cases n(%)	Controls n(%)	OR	OR (95% CI)	P Value
TM has some health risks TM does not have health risks	8 (20) 32 (80)	21 (70) 29 (30)	0.1071	(0.0357 0.3219)	0.000000
Would use TM Would not use TM	32 (80) 8 (20)	2 (05) 38 (95)	76.0000	(15.051 15.747)	0.00000
Will recommend others, TM Will not recommend others	31 (77.5) 9 (22.5)	8 (20) 32 (80)	13.7777	(4.71 40.28)	0.00000

The perception that traditional medicine has some health risks was found to be protective. Those that suggested that if they were to have another pregnancy they would use traditional medicine were 76 times more likely to use traditional medicine compared to those that said they would not. The same applied to participants who pointed out that they would recommend other women to use traditional medicine to prepare for child birth. The likelihood of using traditional medicine was statistically significant in both cases.

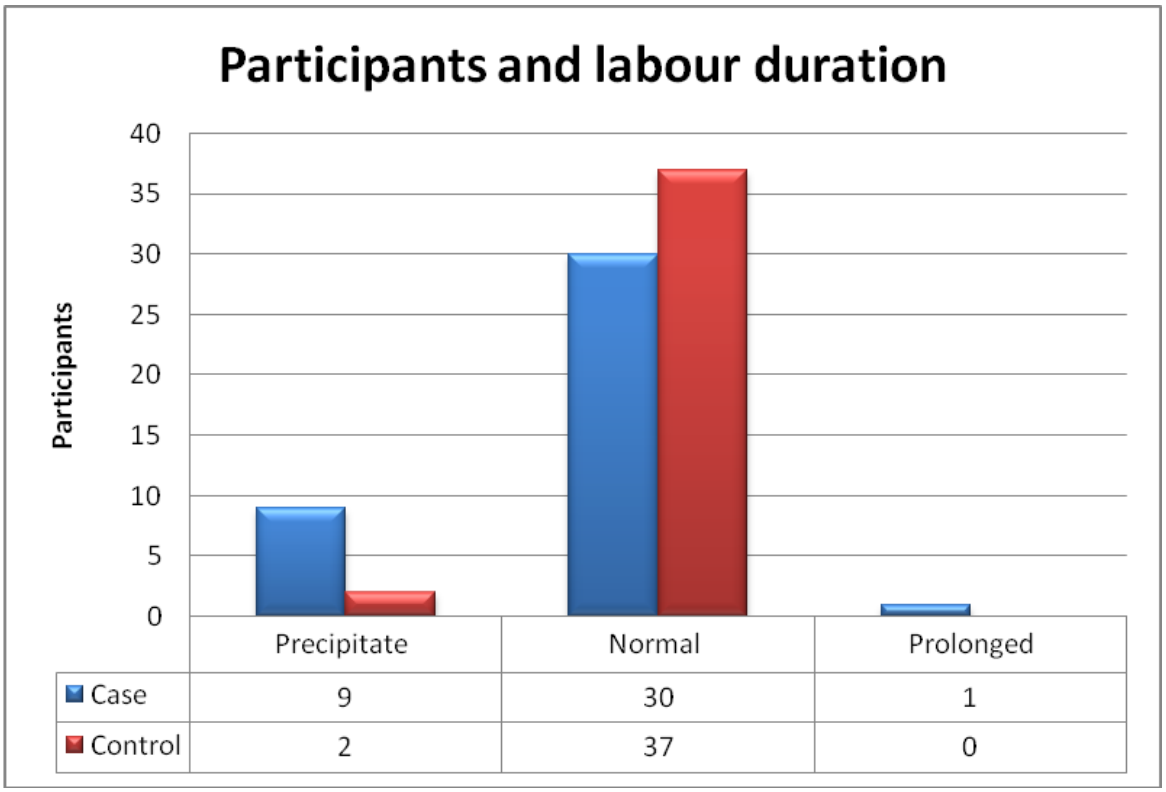
Fig 1.7: Perception of risks associated with using traditional medicine (N=80)



A significant percentage of participants (67%) had no idea or said that there are no risks associated with using traditional medicine to prepare for child birth. The most perceived risks were uterine ruptures, genital cancers and fetal distress, and the least were vaginal cancer and excessive blood loss

This implies that although most mothers use traditional medicine they have no knowledge of possible risks of using the medicine. Their limitedness of the associated risks promotes use of traditional medicine.

Fig 1.8: Labour duration (N=80)



The cases recorded more precipitate deliveries than the controls, the controls recorded more normal labour durations and 1 case had a prolonged labour duration. This means that use of traditional medicine was associated with more precipitate deliveries. The assumption is that the traditional medicine has an influence on labour duration, it speeds-up labour.

Table 1.7. Traditional medicine and pregnancy outcomes (N=80)

A cross-tabulation was made between the pregnancy outcomes practice of use of traditional medicine.

Pregnancy outcomes	Cases n(%)	Controls n(%)	OR	OR (95% CI)	P Value
Precipitate labour	9 (23.08)	2 (5.13)	5.5550	(1.1137 27.6572)	0.0134
Normal labour duration	30 (76.92)	37 (94.87)			
Perineum tear	4 (10)	1 (2.5)	4.3333	(0.4624 40.6101)	0.1034
Perineum intact	36 (90)	39 (97.5)			
Amniotic fluid stained	3 (7.5)	2 (5)	1.5405	(0.2433 9.7546)	0.3397
Amniotic fluid clear	37 (92.5)	38 (95)			
Gestational age : Preterm	01 (2.5)	00 (0)	RR	(1.6202 2.5325)	0.2500
Term	39 (97.5)	40 (100)	2.0256		
Birth weight : Low	00	02			
Normal	36	37	NA	NA	NA
Overweight	04	01			
Apgar Score : Abnormal	05 (12.5)	01 (2.50)	5.5714	(0. 6205 50.0332)	50.0332
Normal	35 (87.5)	39 (97.5)			

Participants who had a precipitate delivery were 5.5550 times more likely to have used traditional medicine compared to participants who had a normal labour duration. This was statistically significant.

Having a perineum tear, stained amniotic fluid and abnormal apgar score was statistically associated to using traditional medicine although the association was not statistically significant.

This means that traditional medicine augment labour, hence more cases of precipitate deliveries. However this was also associated with perineum tear, fetal distress and a low apgar score implying that use of the medicine has some health risks to the mother and the child.

A cross-tabulation was made between socio-demographic characteristics and outcomes of the perineum.

Table 1.8: History of C-section, Parity and Perineum tear (N=80)

Characteristic	Tear n (%)	Intact n(%)	OR	Odds Ratio (95% CI)	P Value
History of C-section	1 (20)	10 (13.33)	1.625	(0.1645 16.0508)	0.3347
No History	4 (80)	65 (86.67)			
Parity 1	2 (50)	35 (77.8)	0.2857	(0.0356 2.2920)	0.14445
Parity 4	2 (50)	10 (22.22)			
Precipitate labour	9 (12.3)	2 (40)	0.2109	(0.0309 1.43495)	0.0875
Normal labour	64 (87.7)	3 (60)			

The most commonly used traditional medicine for facilitating child birth was elephant dung, in some cases elephant dung was mixed with some plant extracts and ingested as a solution, water was used as the solvent. There are few instances were some mothers made use of the dung in the form of smoke. Most women start to use the medicine in the third trimester of the pregnancy.

Discussion

According to a multinational study by Deborah and Kennedy in 2013, mothers who used traditional medicine were classified as having their first child. Similarly in this study, 87.5% of the mothers who used traditional medicine were preparing for their first child. This implies that use of traditional medicine in the first pregnancy can influence continued use of the medicine in other pregnancies.

The commonly used type of traditional medicine was elephant dung (55%). A study by Azriani Ab. Rahab and others in 2008 discovered that the most common type of medicine used by 63.9% of women in Malaysia was coconut oil. Lisha J. John et al in a 2015 study discovered that the most commonly used traditional medicine in the middle east were peppermint, ginger, thyme, chamomile, sage, aniseed and green tea. The prevalence of use varied from 22.3% to 82.3%. These findings show that the types of traditional medicine commonly used vary with the geographical locations of the users.

In this study, most mothers (88%) reported that they started using the traditional medicine in the third trimester of pregnancy. The findings are in concurrence with Malaysian findings where 63.9% of women in Kalentan started using traditional medicine in the third trimester of pregnancy. Similarly, a study by Hedvig Nordengand et al, 2004 at Oslo Hospital in Norway reported the proportion of women using herbal drugs increased throughout the first, the second and third pregnancy trimester of pregnancy.

In addition to use of traditional medicine in the third trimester, this study revealed that being a young mother 20-25 years of age was significantly associated with using traditional medicine. The results are complementary to the discovery by Deborrah and Kennedy 2013, who pointed-out that, most mothers used traditional medicine in their first pregnancies.

Having a low household monthly income and no formal education was found to be statistically associated with use of traditional medicine although the association was not statistically significant. This is in line with the findings by Tamuno (2015) where a study conducted in Northern Nigeria revealed that use of herbal medicine was associated with low economic status and no education.

The similarity of this study 2016 and Tamuno's study may be due to the similarity in that the two studies were all conducted in African, Zimbabwe and Nigeria. The countries share a lot in terms of climate, economy, religion and literacy. The statistical differences may be due to the differences in sample sizes.

Knowledge of traditional medicine:

A low knowledge of traditional medicine (knowing 1 type or none) was considered to be significantly protective of using traditional medicine. This is similar to the findings by Law Kim Sooi and Soon Leang Keng (2013), in a study conducted in Malasia on Knowledge and practice of herbal medicine among women. This may imply that mothers who have more knowledge of types of traditional medicine are likely to use traditional medicine more than mothers who know less.

The most common source of information on traditional medicine were elderly family members.

Perceived benefits of using traditional medicine:

A study by Roland van der Kooi in South Africa year 2006 discovered that traditional medicine was not only used to prevent or solve physical problems but to protect against harm from evil spirits during labour. The use of crushed egg shells was believed to be for inducing labour. This is similar to findings of this 2016 study were 41.2% mothers perceived that traditional medicine shortens labour duration.

A study conducted locally by Dudzai and Muray (2012) outlined that 52% of the mothers used herbal medicine to induce labour and avoid perineum tearing as well as improve the safety of the delivery process. These findings are closely similar to the findings of this study probably because the two studies were all carried out in Zimbabwe and beneficiaries were selected from health centre registers.

The study established a statistically significant relationship between the perception that traditional medicine is useful for child birth and the practice of using traditional medicine. Such findings are in line with Health Belief model by Stretcher & Rosen stock in1997. The theory stresses that one is more likely to adopt a behavior if they perceive that they are more likely to benefit from the behaviour.

1.2.Perceived Health Risks of Using Traditional medicine:

Perceiving that traditional medicine had some health risks was found to be significantly protective of using traditional medicine. This is also in line with the Health belief model by Stretcher & Rosenstock in1997. The theory stresses that one's perception of threats associated with a behavior can discourage them from adopting the behavior.

In addition to perception of risk, most respondents 67% had no idea of any risk associated with use of traditional medicine. The few that were aware pointed out fetal distress (9%), uterine ruptures (9%) and cancer (9%). This implies that although most mothers were making use of traditional medicine, they had no idea of the related risks. Such findings are also in line with findings by Hedvig Nordengand et al (2004) where 39% of women used herbs that were considered possibly harmful or herbs where information about their safety was missing.

According to the Social Learning theory by Bandura 1986, people adopt a behavior through learning from others or their environment. In a society a behaviour by other society members

will be adopted by other members within the same society. The same may be happening on many who have no idea of risk associated with traditional medicine but they still use it. In any case of an intervention for behavior change, the intervention should not be specific to the mothers, but it should include significant others.

Traditional medicine and pregnancy outcomes:

Precipitate labour was found to be significantly associated with the use of traditional medicine. Consequently, perineum tear, stained amniotic fluid and Abnormal apgar score, were statistically associated with use of traditional medicine although the association was not statistically significant.

A history of cesarean section was statistically associated to perineum tear but this association was not statistically significant. Consequently, a parity of 1 was protective of perineum tear but the association was not statistically significant. Precipitate labour was protective of perineum tear but the association was not statistically significant as well.

The significant association between use of traditional medicine and precipitate labour may imply that traditional medicine facilitate labour. This is supported by the study by Dudzai Murray and others in 2012 were they found that traditional medicine was used by mothers in Zimbabwe to induce labour and prevent perineum tearing.

Study limitations:

A review of the Chipinge district hospital's 2015 data showed that the hospital had 76 meconium aspiration cases, 32 PPH cases, 4 third degree vaginal tears and 36 preterm labour cases. However, this study was limited of accessing data of referred cases. This is so because

most suspected cases of maternal complications are referred to the district hospital. As a result, the maternity records are not accessed at the rural health center but at the district hospital.

Conclusion

Younger mothers (20-25 years of age) were more likely to use traditional medicine to prepare for child birth than older mothers (31-35 years of age). However, low knowledge of traditional medicine was protective of using traditional medicine. Consequently, having a history of delivering through cesarean section increased the perception that traditional medicine is not useful for safe delivery. Mothers who perceived that traditional medicine was useful for child birth were more likely to use traditional medicine than those that perceived that the medicine was not useful. Similarly, mothers who perceived that traditional medicine had some health risks were less likely to use traditional medicine than mothers who had no idea or who perceived that TM had no health risks.

The use of traditional medicine by pregnant mothers was significantly associated with precipitate deliveries. It was also associated with perineum tear, stained amniotic fluid, abnormal apgar score but the association was not statistically significant.

Recommendations:

- Target young mothers and educate them on risks associated with the use of traditional medicine in preparing for childbirth
- Educating influential members of the society on traditional medicine and maternal health, such people include family members, traditional leaders and church leaders
- Scale up more social behavior change to promote uptake and use of modern MNCH services such as early ANC booking

- Conduct a similar study at district level, making use of the district hospital maternity health records and including clients referred from the rural health centres

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