Factors associated with parental traditional medicine use for children in Fagita Lekoma Woreda Northwest Ethiopia: A cross-sectional study

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Abstract

Background: Over the last 100 years, the development and mass production of chemically synthesized drugs have revolutionized health care in most parts of the world. However, large sections of the population in developing countries still depend on traditional medicines for their primary health care needs. More than 88% of Ethiopian parents use different forms of traditional medicine for their children. Therefore, this study aimed to determine factors associated with parental traditional medicine use for children in Fagita Lekoma Woreda.

Method: Community-based cross-sectional study was conducted from 1 to 30 March 2019 in Fagita Lekoma Woreda. Data collection tool was a structured interviewer-administered questionnaire. Both descriptive and inferential statistics were used to present the data. Odds ratio and binary and multiple logistic regression analysis were used to measure the relationship between dependent and independent variables.

Results: Among 858 participants, 71% of parents had used traditional medicine for their children within the last 12 months. Parents who cannot read and write (adjusted odds ratio = 6.42, 95% confidence interval = 2.1–19.7), parents with low monthly income (adjusted odds ratio = 4.38, 95% confidence interval = 1.58–12.1), and those who had accesses to traditional medicine (adjusted odds ratio = 2.21, 95% confidence interval = 1.23–3.98) were more likely to use traditional medicine for their children. Urban residents (adjusted odds ratio = 0.20, 95% confidence interval = 0.11–0.38) and members of community-based health insurance (adjusted odds ratio = 0.421, 95% confidence interval = 0.211–0.84) were less likely to use traditional medicine for their children.

Conclusions: Our study revealed that the prevalence of traditional medicine remains high. Educational status, monthly income, residence, accessibility to traditional medicine, and being a member of community-based health insurance were predictors of potential traditional medicine use. Therefore, the integration of traditional medicine with modern medicine should be strengthened. Community education and further study on efficacy and safety of traditional medicines should be also given great attention.

Keywords

Traditional medicine, complementary and alternative medicine, children, parents, Fagita Lekoma, Ethiopia

Introduction

The World Health Organization (WHO) defines traditional medicine (TM) as health practices, approaches, knowledge, and beliefs incorporating plant-, animal-, and mineral-based medicines; spiritual therapies; manual techniques; and exercises, applied singularly or in combination to treat, diagnose, and prevent illnesses or maintain well-being.[1] This form of health care system plays an important role in the health of

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millions of people all over the world, particularly in developing countries, including Ethiopia. The Alma-Ata conference 1978 on primary health care (PHC) recommended governments to give priority to TM and make policies and regulations embracing proven traditional remedies.[2] The WHO estimated that 80% of the world population relies on TM prepared mainly by the use of natural products (animals and plants).[3]

TM is the ancient and culture-bound medical practice existed in human societies before the application of modern science to health. Although it has been used in different degrees almost in all cultures, the practice varies widely in keeping with the sociocultural heritage of different countries. In Ethiopia, most of the population relies on traditional remedies as a primary source of health care. More than 88% of Ethiopian parents had used different forms of TM for their children. The commonly used traditional medicine practices (TMPs) include herbs (66.9%), religious therapies (52.8%), massage (22.8%), bone settler (21.8%), and traditional birth attendants (13.1%). Female parents, low educational level, accessibility of TM, low price, and perceived effectiveness were significantly associated with parental TM use for children.[4,5]

TM is the main source of health care for millions of people in the world. There are many evidences that show traditional health care systems are still common, not only in Africa but also across the world.[6] A study done in Bhutan showed that in addition to modern biomedicine, TM provides health care to 65%–85% of the world's population in developing as well as developed nations.[7]

Traditional and complementary/alternative medicine (CAM) is widely used in the prevention, diagnosis, and treatment of an extensive range of ailments. Numerous factors have led to the extensive and growing demand of traditional and CAM throughout the world, particularly in the past 20 years. In some regions, traditional and CAM is more accessible. One-third of the world's population and over half of the populations of the poorest parts of Asia and Africa do not have regular access to essential drugs.[8]

The development and mass production of chemically synthesized drugs have revolutionized health care in most parts of the world over the past 100 years. However, large sections of the population in developing countries still rely on traditional practitioners and herbal medicines for their PHC needs.[9] TM has been used commonly over years for treatment and prevention of diseases. It has also been used for health promotion and for enhancement of the span and quality of life. TM has maintained popularity in the developing world and its use is rapidly spreading in industrialized countries.[10]

In a non-systematic review study done for investigating complementary and alternative drug use by children in Europe, the extrapolated prevalence of CAM use by children was 52% (range = 5%–90%, adjusted for population size). Pediatric CAM experts reported an increasing awareness for and use of CAM in health care institutions.[11]

Most Asian countries like Japan, Korea, and Vietnam provide a good example of the integration of TM into mainstream health services. In Asia, TM has significant economic value. In Australia, the estimated annual national expenditure on alternative medicines and alternative practitioners is almost A$1000 million. In China, the total production of herbal medicines was 17.57 billion Chinese Yuan (US$2.3 billion). In Japan, sales of herbal medicine products are estimated to be US$1.5 billion per year, 3.5% of the total market for pharmaceutical products.[12]

Modern health services remain concentrated in urban areas and have failed to keep pace with the growing population, keeping health care access out of reach for most Ethiopians living in rural. Hence, the wide use of traditional medical practices should be considered as an important issue.[13] Both traditional medicinal practices and child health are priority issues of Ethiopia.[14] Little is known about factors for TM use by parents for children in Ethiopia, specifically at Fagita Lekoma Woreda. Therefore, this study aimed to assess magnitude and factors associated with childhood TM utilization to improve child health practice and to identify the possibilities of integrating TM with modern medicine to reduce child mortality.

Aim of the study

The aim of this study was to determine factors associated with parental TM use for children in Fagita Lekoma Woreda.

Methods

Study design and study area

A community-based, cross-sectional study was conducted from 1 to 30 March 2019 in Fagita Lekoma Woreda. Fagita Lekoma Woreda is one of the 12 woredas found in Awi zone, Amhara National Regional State, Ethiopia.[14] Parents who have children <18 years of age in the selected kebeles were randomly selected for inclusion in the study.

Sampling techniques

We stratified the kebeles into rural and urban (3 urban, 27 rural). To make representative, 25% of the kebeles, that is 8 kebeles, were selected by using simple random sampling method (1 urban, 7 rural). The number of households (parents have under 18 years' children) in each selected kebeles were identified from health post family folder document. The calculated sample size was proportionally allocated to the selected kebeles.

Sample size determination

The sample size was calculated using single population proportion formula considering the following assumption: prevalence of TM use for children of 88.2%,[5] marginal error of 5%, 95% confidence interval (CI) (α = 0.05).

Table 1. Sample size determination for parental use of TM for children STATCALC: Cohort or cross-sectional.

Variable	Proportion		Sample size calculated	Non-response rate (10%)	Design effect	Total sample size
	P1	P2				
Accessibility of TM	93.8	84	360	396	792	792
Cheap in price	93	83	370	407	814	814
Sex	89	78	390	429	858	858

TM: traditional medicine.

Based on this assumption, sample size of 160 is calculated as follows

$$n = \frac{(Z\,\alpha/2)^2\,P\,(1-P)}{d^2}$$
$$= \frac{3.84 \times 0.882 \times 0.118}{0.0025} = 160$$

where n = the required sample size, z = standard score corresponding to 95% CI, p = prevalence of parental TM use for children, q = 1 − p, d = the margin of error 5%.

Sample size was computed based on single population proportion formula assuming 95% CI, 5% margin of error, prevalence (P) of 88.2%, a design effect of 2 (since multistage sampling technique was used) and a non-response rate of 10%, which gave a final sample size of 352.

The required sample size for the second objective was calculated as follows: The sample size for associated factors was calculated using statically significant factors taken from a study conducted on the prevalence and factors associated with parental use of TM for children at Mota town, Amhara Regional State, Ethiopia, 2014[5] (Table 1).

Therefore, the required sample size is assumed to be the largest one, which is n = 390, and by adding a 10% non-response rate, it resulted in 429 respondents. Then, the overall required sample size (n) was 858, by assuming the design effect of 2 to adjust the variation, that is, n × design effect = 429 × 2 = 858.

Variables

The dependent variable was parental TM use for children. Independent variables included were predisposing factors such as socio-demographic characteristics of parents (age, sex, ethnic group, religion, marital status, income, education, family size, age of child, sex of child, and resident), enabling factors (cost, accessibility, source of referral, distance from the health facility, and member of community-based health insurance (CBHI)), need factors (conditions such as promotion, prevention, and treatment; type of illness; duration of illness; and perception of illness), and health care experience (parental CAM use, level of satisfaction with modern medicine, the effectiveness of CAM, and side effects of modern medicine).

Operational definitions

Traditional healers: health care providers who are not trained in modern medical science;

Parent: father, mother, or/and guardian who nurtures the child;

Children: those who are less than 18 years old and living with their parents.

Health status of the child before treatment:

Poor: bed ridden and mental illness;

Good: the child had some symptom disease;

Very good: the child had not any sign and symptom of a disease.

Data collection procedure

The data collection tool was a structured interviewer-administered questionnaire that was developed by adapting from prior studies in this particular study.[2,5,15] The mother or father or the guardian of the children was interviewed, but priority was given to the mother because mothers are close to their children than fathers. When the mothers were not available by any means, the father or the guardian was interviewed. For the parents who used more than one type of TM for their children in the last 12 months, the recently used TM was selected for the study. The data were collected by using face-to-face interview with structured questionnaires. The data collection tools were prepared in English and translated to the local language Amharic and back translated to English. Pre-test was done on 43 respondents (5% of total sample size) in Gezihara kebele to validate the consistency of the questions and data collection tool.

Data processing and analysis

The data were cleaned, coded, and entered in Epi data version 3.1 and transferred to SPSS version 20.0 for analysis. Descriptive and inferential statistics were used to present the data. Odds ratio and bivariate logistic regression analyses were computed for each independent variable. Variables

with p-value ≤ 0.25 in bivariate logistic regression were entered into multivariable logistic regression model. Those variables with p-value < 0.05 were considered as significantly associated with the outcome variable at 95% CI.

Results

Socio-demographic characteristics

The study included a total of 858 households/parents on voluntary bases with a response rate of 100%. Among 858 respondents who participated in this study, 665 (77.5%) were females and 340 (39.6%) of the respondents were within the age groups of 31–40 years old. Most (898.8%) of the respondents were Orthodox Christianity followers. Most (88.3%) of the participants were married. More than half (59.4%) of respondents cannot read and write. It was found that 178 (20.7%) respondents were living in urban areas and 374 (43.6%) of the parents had three to four children. More than half (53.6%) of the participants earn <1000 Ethiopian birr every month (Table 2).

Prevalence of TM utilization for their children

The study result showed that from the total of 858 participants, 693 (80.3%) have ever used TM for their children. The prevalence of parental use of TM in the last 12 months was 71%. Based on this study, 120 (17.3%) of the parents use TM for their child within 1 month (Table 3).

According to our study, 302 (44%) parents administered TM for their children through oral route of administration (Figure 1).

Type of TM utilization for their children

In this study, 393 (56.7%) and 38 (5.5%) of respondents used herbal medicine and bone settler for their children, respectively (Figure 2).

Enabling factors

Among 693 participants, 411 (59.3%) participants declared easy accessibility of TM as the major reason to use TM for their children. Based on this study, 223 (32.6%) of the parents obtained information about the benefit and efficacy of TM from their family members and 294 (42.4%) of respondents took TM from traditional healers. Among 858 respondents, 598 (69.7%) live within 5 km from health institutions. According to this study, 641 (74.7%) respondents were a member of CBHI (Table 4).

Reasons and features for use of TM

In this study, 397 (57.4%) participants had used TM for their children to treat illness and/ or to relieve symptoms of

Table 2. Socio-demographic characteristics of parents having <18 years old children in Fagita Lekoma Woreda, Amhara Regional State, Northwest Ethiopia, 2019 (N = 858).

Variable	Frequency	%
Parent sex		
Male	193	22.5
Female	665	77.5
Parent age		
≤20 years	20	2.3
21–30 years	227	26.5
31–40 years	340	39.6
41–50 years	171	19.9
>50 years	100	11.7
Religion		
Orthodox	853	99.4
Protestant	5	0.6
Marital status		
Single	28	3.3
Married	758	88.3
Divorced	45	5.2
Widowed	27	3.2
Income per month		
<1000	460	53.6
1000–2000	336	39.2
>2000	62	7.2
Educational status		
Cannot read &write	491	57.2
Read & write	145	16.9
Grade 1–8	122	14
Grade 9–12	70	8.2
Above Grade 12	30	3.5
Number of child (<18 years)		
≤2	334	38.9
3–4	374	43.6
>4	150	17.5
Child age in years		
<5	310	36.1
5–9	295	34.4
10–14	192	22.4
15–18	61	7.1
Child sex		
Male	434	50.6
Female	424	49.4
Residence		
Urban	178	20.7
Rural	680	79.3

diseases. A total of 238 (34.3%) participants perceived that the overall health status of their child was poor before TM treatment. A total of 426 (61.5%) respondents had used TM for their children for a disease of less than 1 month duration (Table 5).

A total of 204 (29.4%) participants had used TM to treat gastrointestinal problems, 116 (16.7%) of them used for

Table 3. Prevalence of traditional medicine utilization for their children in Fagita Lekoma Woreda, Amhara Regional State, Northwest Ethiopia, 2019.

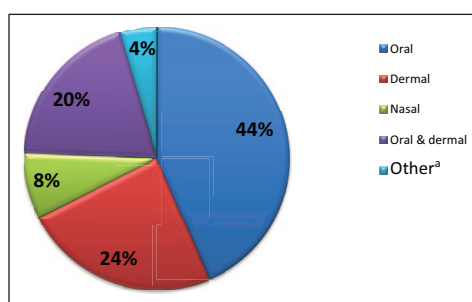| Variable	Frequency	%
Ever use of traditional medicine for children (N=858)		
Yes	693	80.8
No	165	19.2
Parental use of traditional medicine for their children for the last 12 months (N=858)		
Yes	609	71
No	249	29
When have you used traditional medicine for your child? (N=693)		
Within 1 month	120	17.3
Within 6 months	378	54.5
Before 6 months	195	28.2

Figure 1. Route of administration of TM for their children in Fagita Lekoma Woreda, Amhara Regional State, Northwest Ethiopia, 2019.
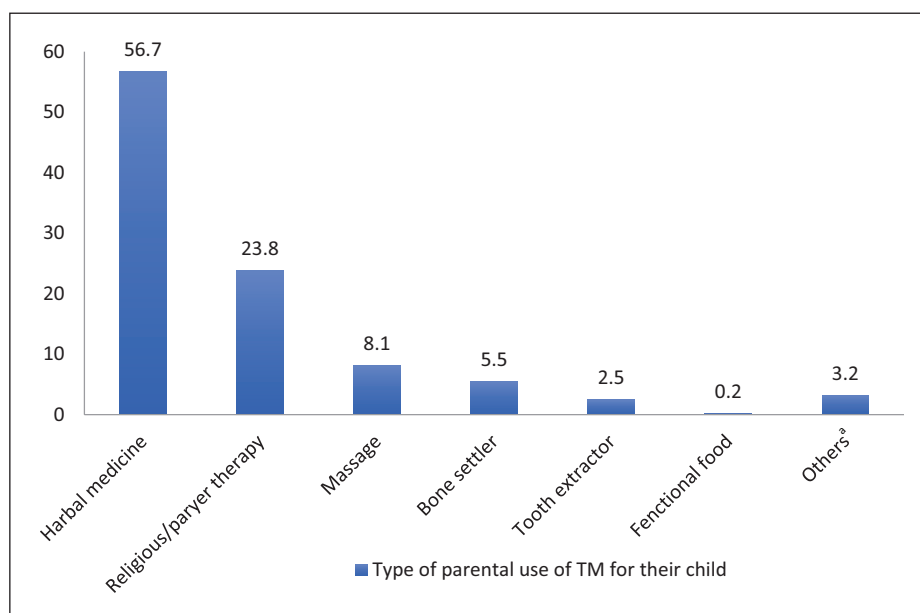^aCutting, washing.

headache and 89 (12.8%) used TM for dermatological problems (Figure 3).

Health care experience

Among the total participants, 694 (80.9%) respondents had used TM for themselves at least once in their lifetime for the treatment of different diseases. A total of 493 (71.1%) participants' children had shown improvement. Among all study participants, 250 (36.7%) used TM perceiving that it has a good outcome. Only half of the respondents were satisfied with the modern health care system (Table 6).

Factors associated with TM practice

The educational status of parents was significantly associated with parental TM use for children. Parents who cannot read and write were 6.42 times more likely to practice TM (adjusted odds ratio (AOR)=6.42, 95% CI=2.1–19.7), parents who can read and write were 3.61 times more likely use TM (AOR=3.61, 95% CI=0.9–10.4), and those who had primary education were 1.83 times more likely to practice TM (AOR=1.83, 95% CI=0.54–5.96).

The other factor that affected parental use of TM for their children was residence. Parents who live in urban were less likely to use TM for their children compared with those who were living in rural areas (AOR=0.20, 95% CI=0.11–0.38).

Another factor that showed association with parental TM practice was the average monthly income. Parents who had low monthly income were 4.38 times more likely to use TM for their children compared with parents who had high monthly income (AOR=4.38, 95% CI=1.58–12.1). Accessibility of

Figure 2. Type of parental use of TM for their children in Fagita Lekoma Woreda, Amhara Regional State, Northwest Ethiopia, 2019.
^aTsefet, Kitab.

Table 4. Reasons for parental TM use for children in Fagita Lekoma Woreda, Amhara Regional State, Northwest Ethiopia, 2019.

Variable	Frequency	%
Reason to applied TM		
Accessibility of TM	411	59.3
Cheap in price of TM	262	37.8
Referred by other persons	317	45.7
The sources of information about TM (N = 693)		
Self	88	12.7
Family	223	32.2
Relative	133	19.2
Friends	73	10.5
Neighbors	92	13.3
Health professionals	9	1.3
Religious institutions	47	6.8
Traditional healers	28	4
Sources of TM used for their children (N = 693)		
Home	177	25.5
Neighbors	222	32
Traditional healers	294	42.4
Distance from health institutions (N = 858)		
<5 km	598	69.8
≥5 km	260	30.2
Member of CBHI (N = 858)		
Yes	641	74.7
No	217	25.3

CBHI: community-based health insurance; TM: traditional medicine.

Table 5. Major Reasons and features for use of TM for parental TM use for children in Fagita Lekoma Woreda, Amhara Regional State, Northwest Ethiopia, 2019.

Variable	Frequency	%
Purpose of TM use for your child (N = 693)		
To promote health	101	14.6
To prevent illness	194	28
To treat illness/symptom	398	57.4
Health status of the child before treatment (N = 693)		
Poor	238	34.3
Good	376	54.3
Very good	79	11.4
Duration of illness (N = 693)		
<1 month	412	59.5
>1 month	281	40.5

TM: traditional medicine.

TM was significantly associated with parental TM practice for children. Parents who had access to TM were 2.21 times more likely to use TM for their children than those who had no accessible (AOR = 2.21, 95% CI = 1.23–3.98).

Being a member of CBHI was significantly associated with parental TM practice for children. CBHI member parents were less likely to use TM compared with those who were not a member of CBHI (AOR = 0.421, 95% CI = 0.211–0.84) (Table 7).

Discussion

TM has gained increasing popularity among parents for children.[5] In this study, we found that utilization of TM remains high. The prevalence of parental TM use for children over 12 months was 71%. This finding is somewhat lower compared with the study conducted in Mota town, Northwest Ethiopia, which showed that 88.2% of parents used TMs for children.[5] This might be probably due to the sample size difference because the latter takes a smaller sample size. It may be also due to current government attention given to the child and maternal health service; health education has been given largely to the parents regarding children's health. Another explanation for the difference might be increment in health-seeking behavior toward modern medicine due to CBHI program. This finding is also lower compared with a study conducted in Tole Woreda, which showed 85%.[6] It is may be due to cultural differences. But it was higher compared with a research done in Southern Arizona (64%),[7] Korea (65.3%),[16] and Turkey (56%).[17] The difference might be from methodological and cultural differences between the studies. The previous studies were conducted at the health care setting and this study was conducted at the community level.

Parental educational status was significantly associated with parental TM use for children in this study. The findings of our study revealed that the frequency of TM use decreases as parental education increases. This finding was not in line with previous studies done in Calabria and Wales, the United States, and Germany which showed parents who used TM for their children were more educated.[18–21] This difference may be due to parents living in developed countries prefer natural product medicine than chemical synthesis medicine because of the fear of side effects of modern medicine.

Parents' residence was the other factor that was significantly associated with parental use of TM for their children. Parents living in urban areas used TM 0.247 times less likely than parents who are living in rural areas (AOR = 0.247, 95% CI = 0.122–0.50). This finding is similar to the study conducted in the Soviet Union.[22] This may be due to the accessibility of modern health facilities in the urban area and health-seeking behavior of the urban population for modern medicine higher than rural populations.

The monthly income of a household was significantly associated with parental TM use for children. Parents who had low economic status (<1000 Ethiopian birr) were found to be 3.9 times more likely to use TM for their child. This finding was similar to a study done in Tole Woreda.[6] This may be due to difficulties in accessing and less affordability of modern medical treatments in developing countries, including Ethiopia. However, studies conducted in Taiwan
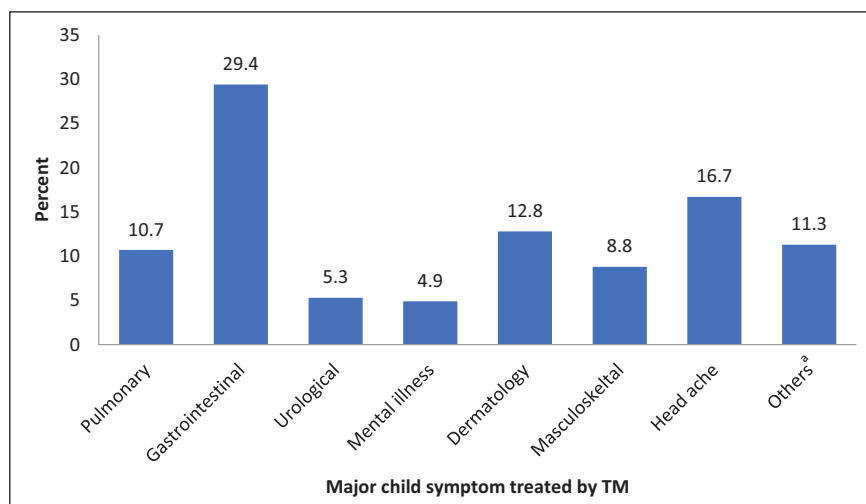
Figure 3. Major child's symptoms treated by parents in Fagita Lekoma Woreda, Amhara Regional State, Northwest Ethiopia, 2019.
[a]Evil eye, Tsedal, Yebetabet, fever.

Table 6. Health care experience of participants in Fagita Lekoma Woreda, Amhara Regional State, Northwest Ethiopia, 2019.

Variable	Frequency	%
Have you ever used TM for yourself (N = 858)		
Yes	694	80.9
No	164	19.1
Who used TM (N = 694)		
Mather	304	43.8
Father	103	14.8
Mather & Father	199	28.7
Relative	88	12.7
Outcome of TM after used for children (N = 693)		
Deteriorate	58	8.4
The same as previous	142	20.5
Improved	493	71.1
Reasons for parental use of TM than modern medicine (N = 693)		
Perceive good outcome of TM than modern medicine	239	34.5
Satisfaction with TM	157	22.7
Dissatisfaction with modern medicine	78	11.3
Fear of side effects of drugs	45	6.5
In accessibility of health care facilities	144	20.8
Others[a]	30	4.3
Level of satisfaction with modern medicine (N = 858)		
Very dissatisfied	62	7.2
Dissatisfied	185	21.6
Neither satisfied nor dissatisfied	103	12
Satisfied	430	50.1
Very satisfied	78	9.1

TM: traditional medicine.
[a]Not treated by modern medicine, cultural believe.

and Wales revealed a high prevalence of traditional and complementary medicine use with higher socioeconomic status participants.[20,23]

Resources found within the family and the communities were other pushing factors for TM practice.[15] In our study, accessibility of TM was significantly associated with parental TM use for their children. Among the total respondents, 411 (59.3%) perceived TM as it is being easily accessible. Those parents who perceived TM as it is being easily accessible were 2.94 times more likely to use TM for their children. This is nearly consistent with a previous study done at Mota town, Northwest Ethiopia.[5] This might be because more than half (53.6%) of respondents in this study had very low monthly income and they may rely on accessible TM.

The other enabling factor that was associated with parental use of TM was being a member of CBHI. Those parents who were members of CBHI were less likely to use TM for their child compared with those who were not a member of CBHI. This finding was congruent with a study conducted in Tanzania.[24] This may be due to increased access to health care by CBHI, by reducing the financial barriers and increasing health services utilization.

The duration of illness was another factor that showed a significant association with parental use of TM for their children. Parents having children with acute illness were 1.85 more likely to use TM compared to those with chronic illness. This finding was congruent with studies done in Tole Woreda.[6] This may be due to the need for releveling symptoms of acute illness and acute and communicable diseases are common in Ethiopia. But this finding was not in line with studies done in Korea which indicated that those who had children with chronic illnesses were more likely to use TM compared to those with an acute illness.[25] This may be due to higher prevalence of non-communicable disease in developed countries compared with developing countries.

Limitations of the study

While the study considers parental characteristics; children's characteristics were not evaluated. Thus, subsequent studies

Table 7. Factors associated with parental TM used for children in in Fagita Lekoma Woreda, Amhara Regional State, Northwest Ethiopia, 2019 (N = 693).

Variable	Parental TM use for their children in the last 12 months		COR (95% CI)	AOR (95% CI)	p-value
	Yes	No			
Education status of parent					
No read & write	393 (56.7)	21 (3)	15.3 (5.7–40.9)	6.42 (2.1–19.7)	0.001*
Read & write	108 (15.6)	12 (1.73)	7.4 (2.37–28)	3.61 (0.9–10.4)	0.73
Primary (1–8)	77 (11.1)	19 (2.74)	3.32 (2.37–8.99)	1.83 (0.54–5.96)	0.34
Secondary (9–12)	20 (2.9)	23 (3.3)	0.71 (0.21–3.34)	0.48 (0.13–1.71)	0.26
12+	11 (1.6)	9 (1.3)		1	
Residence					
Urban	99 (14.3)	38 (5.5)	0.235 (0.145–0.38)	0.20 (0.11–0.38)	0.001*
Rural	510 (73.6)	46 (6.6)		1	
Income per months					
<1000	366 (53)	36 (5)	6.58 (2.86–15.1)	4.38 (1.58–12.1)	0.004*
1000–2000	226 (32.6)	37 (5.3)	3.95 (1.26–12.1)	1.83 (0.98–3.37)	0.54
>2000	17 (2.5)	11 (1.6)		1	
Accessibility of TM					
Yes	369 (53.2)	42 (6.1)	1.54 (1.12–2.43)	2.21 (1.23–3.98)	0.008*
No	240 (34.6)	42 (6.1)		1	
Member of CBHI					
Yes	434 (62.6)	69 (10)	0.54 (0.3–0.96)	0.421 (0.211–0.84)	0.014*
No	175 (25.2)	15 (2.2)		1	

TM: traditional medicine; COR: crude odds ratio; CI: confidence interval; AOR: adjusted odds ratio.
1 = Reference, *p-value < 0.05 (significance).

could take into account these limitations for better understanding of traditional medication practices and children.

The study is cross sectional and evaluates the effect of variable of interest, but there is no possibility to identify whether TM practice affects the associated factors and whether there is association or effect between variables. Thus, subsequent studies could take into account these limitations for better understanding of traditional medication practices and pediatrics.

Conclusion

The prevalence of parental TM practice for children remains high. This indicates the contribution of TMs to the public health is very important. Parents' educational status, monthly income per house hold, residence, accessibility of TM, being member of CBHI and duration of illness were associated with parental TM use for their children in this study.

Author contributions

D.A. has participated in designing the study and collecting data. B.K., B.D., and A.A. participated in the proposal development and final paper write-up. D.A., B.D., and A.A. prepared the manuscript. All authors read and approved the final manuscript.

Ethical approval

The study protocol was approved by the research and ethics review committee in Debre Markos University. Oral consent was obtained from participants before being involved in the study. Confidentiality of data was assured for participants. Prior to data collection, appropriate ethical clearance was obtained from Debre Markos University, College of Health Sciences Ethical Review Committee. The ethics approval number given was ጤሳኮ/1012/16/11.

Informed consent

During data collection, oral consent was taken from each parent. Respondents who were not willing to participate were excluded from the study. The institutional ethical review committee

permitted oral consent and waived written because the research did not involve clinical trials or was not experimental study design.

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Data availability statement

Data used to support this study can be accessed by requesting Bekalu Dessie, bekiebda@gmail.com.

Supplementary materials

Supplementary materials for this article is available online.

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