

Research Article

Utilization of Integrated Community Case Management and Its Factors in Southern Ethiopia: Facility Based-Cross-Sectional Study

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Received 3 September 2020; Revised 28 January 2021; Accepted 24 May 2021; Published 31 May 2021

Academic Editor: Carol J. Burns

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Background. An integrated community case management (ICCM) program fosters child health care seeking and access to appropriate treatment for illnesses in children at the community level in Ethiopia. There is paucity of evidence to the utilization of ICCM services by mothers/child caregivers in rural Southern Ethiopia. Hence, the aim of this study was to determine the utilization of integrated community case management (ICCM) and its factors among mothers/child caregivers in rural Southern Ethiopia. **Methods.** A multistage sampling technique was used to select study participants in health care facilities offering child health care services. An exit interview was conducted on 574 mothers/child caregivers in randomly selected public health centres. Data were entered using Epi Info and transported to SPSS version 20 for analysis. **Results.** Only less than a quarter of participants visited health posts for ICCM services during the study period. Those study participants who have not heard about ICCM service before the survey were about 6.53 times more likely not to use the services as compared to those who have heard about the service. Participants who were not members of the women's development team were about 2.23 times more likely not to utilize ICCM services when compared to their counterparts. **Conclusion.** The study shows low utilization of ICCM service by children less than five years. Prior information about ICCM services and membership in the health development army was significantly associated with ICCM use. Therefore, our finding may suggest the need for advocacy to increase participation in the health development army and information education to increase the level of awareness and formal education efforts.

1. Background

Integrated community case management (ICCM) is a child survival strategy aimed at increasing access to effective health care services for childhood illnesses. It enables the integration of all child health intervention activities to be accessed at the community level. The strategy particularly targets common childhood health problems like malaria, pneumonia, diarrhoea, and measles, especially among children less than five years of age [1–3]. Ethiopia has been implementing this strategy through its innovative health extension program at the community level. According to the Ethiopian health service delivery tier system, health posts

serve as the first entry points to the health system and are also points of ICCM service delivery which are staffed with at least two health extension workers.

Despite the progress made over the past two decades, in 2018 alone, an estimated 6.2 million children died globally, mostly due to preventable causes [4]. Regional variations showed that up to 99% of child mortality occurs in developing nations [5] and one in three children dies due to malaria, pneumonia, and diarrhoea [6]. However, evidence shows that community health care services brought access to and availability of services for early diagnosis and treatment of such diseases through integrated community case management (ICCM) services [7, 8]. The ICCM service reduces

child morbidity and mortality by improving access to appropriate treatment services [9–11].

The two-thirds reduction in child mortality in Ethiopia since 1990 [12] has been attributed to efforts made at the national level in increasing access to essential child health care services [13] and progressive improvement in evidence-based treatment for child disease conditions [14, 15]. However, ICCM implementation and utilization in other limited geographic locations of the country remain low [1, 2] when compared to other low-income countries [16].

Health centres are higher levels of health facility next to health posts which all together form a primary health care unit. In the Ethiopian health tier system, every health centre supervises at least five health posts. In principle, all children at the community are expected to visit the nearest possible health post for all child health care services. These health posts manage children with simple illnesses according to the ICCM implementation manual and refer complicated cases to the health centre level [15].

Some children utilize the ICCM services that are rendered at the health post level whereas the rest bypass this first tier system, point of services, due to various challenges including absenteeism of health extension workers (HEWs) from work, financial constraints, topographic challenges, and poor acceptance of HEWs services by the mothers and caregivers [15]. Nevertheless, experience has demonstrated the critical importance of HEWs in bringing quality of care close to the home environment [15].

Integrated community case management services are extensively made available at every lowest administrative unit of the country as a cost-effective strategy. This strategy has been locally adapted to alleviate common childhood illnesses among Ethiopian children. But evidence shows that its current implementation has been recorded lower than expected. This could be attributed to lack of essential medicines, turnover of HEWs, and variety of implementation barriers to its pillars, as well as weak and fragmented health systems and poor public awareness. It is well known that reduction in infant mortality requires the existence of integrated health care in the health system but not enough. This effort should be accompanied by activities that promote improved utilization among mothers/child caregivers. However, to our knowledge, much research in the country focuses primarily on the impact of the program, but not on the utilization of ICCM services by the mothers/child caregivers. Therefore, the aim of our study was to determine the extent to which children utilize these services and the factors affecting their utilization.

Operationally, integrated community case management (ICCM) is the strategy that enables assessment, classification, and management of childhood illnesses in an integrated manner at the health post level [17]. And also, for this study, integrated community case management services utilization means receiving packages of health care services for the child's problems as per the ICCM guidelines reported by the mother or caregiver [17]. Moreover, Health post bypass for this study applies when the child receives health care services directly from a health care professional at a health centre level without consulting health extension workers at a health post.

2. Methods

2.1. Study Area and Period. The study was conducted in Southern Ethiopia, Hadiya zone, where 251,434 children less than five years resided in 2016. The study area comprised 311 health posts, that is, one health post per kebele, the smallest administrative unit, and 61 health centres. According to the Ethiopian health delivery system, health post is the lowest health care delivery point staffed with two HEWs and where ICCM is implemented as a child survival strategy. According to the ICCM implementation guideline, health extension workers either manage simple cases at the health post level or refer complicated cases to the nearest health centre where the IMNCI (integrated management of newborn and childhood illnesses) strategy has been implemented [17].

Thirteen selected health centres were included in our study. These health centres served as contact sites to access mothers/child caregivers who visited for child health problems which either were referred from the health post or bypassed it. These mothers/child caregivers were interviewed to determine whether they had utilized ICCM services at the nearest health post for current child problems or bypassed it during the data collection period. This study was conducted in June 2018.

2.2. Study Design. We used an institution-based cross-sectional study design. Face-to-face interview technique was employed to gather the required data using a standardized questionnaire.

2.3. Study Participants. All mothers or caregivers of children under the age of five years living in the study catchment were the source population for our study from which study participants were sampled. The study population primarily was children who lived in the rural areas of the zone where ICCM services were implemented at the health post level. Children who visited selected health centres during the data collection period and met the inclusion criteria were enrolled. Health centres that provide child health care services were randomly selected for the study. These health centres serve as the point of care for two groups of children namely those who come through the referral system from health posts and those who directly visit health centres bypassing the health posts.

Children under the age of five who are presented to the selected health centres for any childcare services were included in the study. Mothers/child caregivers who were under the age of 18 years were excluded from the study for physical incompetence. Also, mothers/child caregivers who visited the study health centres from urban areas were not included in our study since ICCM services were not provided in the urban settings. Informed written consent was obtained from the mothers or child caregivers immediately before the data collection time.

The sample size has been calculated using a single population proportion formula [18] using the following parameters. Accordingly, the proportion (P) of ICCM service used to be 50% to allow maximum sample size, a margin

of error (d) of 0.05 with 95% confidence interval, and consideration of design effect of 1.5 with the assumption that sampling variation might have been introduced while we select our study participants using multistage sampling:

$$n = \frac{Z(\alpha/2)^2 P(1-P)}{d^2} * \text{design effect}, \quad (1)$$

$$n = \frac{(1.96)^2 0.50(1-0.50)}{(0.05)^2} * 1.5 = 576.$$

Therefore, the final sample size of the study was 576.

We employed a simple random sampling technique to select 13 public health centres to be included in our study. An average of three weeks' client flow at all selected health centres was estimated before data collection was started to determine the number of participants to be included from each facility and the expected participants' size was proportionally allocated amongst the chosen health centres. A systematic random sampling technique was used to select study participants in each study health centre among the eligible children who visited the health facility. The sampling interval was determined for each facility independently and participants' recruitment was performed until the sample size was saturated for each facility. Finally, an exit interview session was made with mothers or child caregivers who met the inclusion criteria.

2.4. Study Variables. We have identified two groups of variables in this study to determine the type of analysis to be performed. The dependent variable of the study is the use or utilization of ICCM service whereas the independent variables include sociodemographic characteristics and health service-related factors. Sociodemographic variables include age, sex, marital status, education, occupation, income, family size, and parity whereas health service-related variables include child illness conditions, health post visit, medical consultation conditions, distance from the health post, visit by health extension workers, and individual factors including knowledge about ICCM, information source, experience of ICCM service utilization from health extension workers, and acceptance level of the service.

2.5. Data Collection and Measurement. The development of the measurement tool was guided and shaped by the research objectives. A structured data collection tool was prepared from related literatures that are relevant to our study. The questionnaire was adapted to fit in the local context and ensure cultural appropriateness. For more clarity, see the English version of the questionnaire (S1) in the Supplementary Material section of this manuscript. The tool was pretested and further modified for clarity, consistency, and logical flow of the interview process. The tool comprised of variables which include sociodemographic characteristics, child's current illness conditions, health service-related factors, and health information sources. The English version of the tool was translated into Hadiyiissa (local language) by three English language experts who are

also experts in Hadiyya language and back translated into English to check the consistency of the versions.

Data were collected through the interview technique by trained health workers who worked at the sick-baby clinics in the respective health centres during the data collection period. Information was immediately gathered from the mother or child caregiver at exit after the child has been assessed and served. Participants were provided no incentives of any kind for their participation in the study. The data collection process was supervised by trained supervisors during the entire data collection period. The completed questionnaires were checked daily for completeness, accuracy, and consistency by the supervisors and the data collectors.

2.6. Data Processing and Analysis. Data were manually cleaned before entering into the software. Then, data were entered and cleaned using Epi Info version 3.1 software [19] and transported to SPSS version 20 for analysis [20]. Quantitative variables such as age, income, family size, and number of under-five children per household were recoded to enable the comparison of our findings with other studies. Descriptive univariable analysis of the important background variables like sociodemographic characteristics, child's present illness conditions, and source of ICCM information was carried out to show their frequencies and relative percentages. The proportion of ICCM service utilization has been estimated by considering the proportion of study participants who utilized ICCM services at the health post level for current child health needs before visiting the health centre.

The outcome variable of the study, ICCM service utilization, has been dichotomized into "utilized" and "not utilized." Once the outcome variable has been dichotomized, a bivariable logistic regression analysis was performed to see a crude effect of each independent variable on the utilization of ICCM service. Then, all the variables that showed a significant association (P value of 0.05 or less) in the bivariable logistic regression were taken to the multivariable logistic regression analysis to control for the effect of confounders.

Finally, those variables that showed statistically significant association with ICCM service utilization at P value of 0.05 were considered independent predictors of the outcome variable. As a result, independent predictor variables for ICCM service utilization have been identified using odds ratio with 95% CI to see the strength of the association between the variables.

3. Results

3.1. Sociodemographic Characteristics and Child Illness Conditions. Of all the mothers/child caregivers invited to participate, 574 (99.7%) agreed to get involved in the study. The majority, 492 (85.7%), of the respondents who brought the sick children to the health facilities were females. The mean age of the respondents was 30.36 ± 5.93 SD years. Most of the respondents, 551 (96%), were in a marital union

during the study period. The majority of the respondents were followers of Protestant Christianity, 408 (71.1%), followed by Islam, 116 (20.2%). The dominant ethnic group among the respondents was Hadiya, 509 (88.7%), and housewife was the major occupation, 423 (73.7%), among the respondents.

The median monthly income of the respondents' families was 36.72 USD (United States dollar). Nearly a quarter, 143 (24.9%), of the respondents' families' monthly income was above the third quartile value. More than three-fourths, 436 (76%), of the respondents' families have an average family size of more than 4.5 individuals. The average number of individuals living per household was 6 with the standard deviation of ± 3.9 (Table 1).

More than half, 314 (54.7%), of the sick children less than five years old who visited the health facility were males. Nearly, one-third, 199 (34.7%), of the sick children belong to the age group 2 to 11 months. Only nineteen (3.3%) of the children who visited a health facility for health care were below the age of 2 months. More than half, 310 (54%), of the children's families have had two children below the age of five years.

The four major symptoms reported by sick children less than five years old during the study period were fever 301 (52.4%), cough 230 (40.1%), diarrhoea 117 (20.4%), and skin problems 117 (20.4%). Symptoms associated with malnutrition and other disease conditions account for 19 (3.3%) and 34 (5.9%), respectively (Table 2).

3.2. ICCM Service Utilization and Health Post Bypass. Nearly, less than a quarter, 129 (22.5%), of children less than five years visited health post for health care services during the study period. This shows that the proportion of children who bypassed health posts was 77.5%. This reveals that, on average, seven to eight in every ten children bypassed the health post and directly went to the health centre for health care services. Two major reasons had been cited by the respondents for bypassing the health post, that is, absence of drugs in the health posts, 244 (54.8%), and closed health posts, 167 (37.5%). In addition, long wait times for services, 71 (16.0%), health extension workers' inadequate caring habits, 4 (0.9%), perception of participants that health extension workers lack competence, 27 (6.1%), participants' lack of awareness about the service, 53 (11.9%), and others, 39 (8.8%), were cited reasons. Only one in every 16 children visited the health facility on the first day of the onset of illness whereas a major proportion of children visited health facilities on the second, 201 (35.0%), and third day, 208 (36.2%), after the start of the illness.

Ninety-one (15.9%) of the children's families had a sick family member in the last two weeks prior to the data collection period. Among those family members who sought medical help, the majority had visited health centres, 57 (68.7%), followed by private clinics, 18 (21.7%). Among those who visited the aforementioned health facilities, the majority of them, 58 (69.9%), had been informed about ICCM services. Of these, 38 (65.5%), 39 (67.2%), 46 (79.3%), and 6 (10.4%) had been informed about fever, diarrhoea, cough, and other health conditions, respectively.

TABLE 1: Sociodemographic characteristics of respondents, Hadiya zone, Ethiopia, June 2018 ($n = 574$).

Background variable	Categories	Frequency	%
Sex of the respondent	Male	82	14.3
	Female	492	85.7
Current Marital status	Currently in union	551	96.0
	Not in union	23	4.0
Religion	Protestant	408	71.1
	Islam	116	20.2
	Orthodox	27	4.7
	Others*	23	4.0
Ethnicity	Hadiya	509	88.7
	Silte	32	5.6
	Kembata	20	3.5
	Others**	13	2.3
Age	18–25	129	22.5
	26–30	208	36.2
	31–40	220	38.3
	>40	17	3.0
	No formal education	317	55.2
Education	Primary education (1–8)	207	36.1
	Secondary education (9–12)	32	5.6
	Tertiary education (12 plus)	18	3.1
	Housewife	423	73.7
Occupation	Farmer	56	9.8
	Merchant	50	8.7
	Employee	26	4.5
	Others***	19	3.3
	<22.03	138	24
Monthly income in USD	22.04–36.69	117	20.4
	36.70–89.02	176	30.7
	≥ 89.03	143	24.9
Family size	<4.5	138	24.0
	>4.5	436	76.0

Others*: Catholic, Adventist; others**: Guraghe, Amhara; others***: student, daily labourer; others****: student, daily labourer; not in union refers to single, widowed, divorced, and separated.

More than half of the respondents, 326 (56.8%), reported that they had been visited by health extension workers at least once in their lifetime. Of these, more than three quarters, 247 (75.8%), were visited once whereas the rest, 79 (24.2%), were visited twice in their lifetime.

3.3. Participants' Related Factors. Four hundred fifteen (72.3%) of the respondents indicated that they had been informed about ICCM services before the study period. Of these, women development team 181 (43.6%), health extension workers 280 (67.5%), and other health professionals 104 (25.1%) were the major sources of information regarding ICCM services. Mass media 28 (6.7%) and other sources 6 (1.5%) were also cited by the respondents as their source of information.

Three hundred ninety-seven (95.7%) of the study participants had been informed about the availability of the ICCM services at the health post level. Moreover, the majority of the respondents, 476 (82.9%), were aware of the

TABLE 2: Sociodemographic variables and major disease symptoms among under-five children who participated in the study of Hadiya zone, Ethiopia, June 2018 ($n = 574$).

Background variable	Categories	Frequency	%
Age of the child in months	<2 months	19	3.3
	2–11 months	199	34.7
	12–59 months	356	62.0
Sex of the child	Male	314	54.7
	Female	260	45.3
Children less than five years per household	1	179	31.2
	2	310	54.0
	3	85	14.8
Major child's symptoms for each category)	Fever	301	52.4
	Diarrhoea	117	20.4
	Cough	230	40.1
	Malnutrition	19	3.3
	Skin infections	117	20.4
	Others	34	5.9

Others: constipation, ear problem, tonsillitis, neck swelling, leg swelling, vomiting, and accident.

importance of ICCM. Two hundred ninety (60.9%) and 345 (72.5%) of the respondents reported its advantage for child development and reduction of child mortality, respectively, whereas ninety-two (16%) of the respondents denied the advantage of ICCM services.

More than half of the respondents, 335(58.4%), stated that they were members of women development team. Nearly, three-quarters of the respondents, 424 (73.9%), described that they had been provided health care services by health extension workers. Moreover, respondents testified the services they received as being respectful, 231 (54.5%), relatively good, 166 (39.2%), and compassionate, 41 (9.7%). Among those who had received the services, the majority of them, 517 (90.1%), accepted the services provided by health extension workers. Only 57 (9.9%) of them claimed that they did not accept the services provided by the health extension workers due to various reasons.

3.4. Factors Associated with ICCM Service Utilization. In our multivariable logistic regression analysis, being not informed about ICCM services and not being a member of the women development team were significantly associated with not utilizing ICCM services. Consequently, those study participants who have not heard about ICCM before the survey were about 6.53 times more likely not to use ICCM services as compared to those who have heard about ICCM services [AOR: 6.53, 95% CI: (2.50, 17.05)]. Also, participants who were not members of the women development team were about 2.23 times more likely not to utilize ICCM services when compared to their member counterparts [AOR: 2.23, 95% CI: (1.26, 3.92)]. Those with primary education were 39% less likely not to utilize ICCM service when compared to participants with no formal education [AOR: 0.61, 95%CI: (0.39, 0.96)]. Additionally, those participants whose family monthly income is between 22.04 and 36.69 USD were 2 times more likely not to utilize ICCM services when compared to participants whose family monthly income was between 36.70 and 89.02 [AOR: 2, 95%CI: (1.02, 3.81)] (Table 3).

4. Discussion

The integrated community case management (ICCM) is one of the child survival strategies implemented by the health extension program to extend accessibility and availability of child health services [9]. Available evidence shows that the program reduced childhood illnesses such as malaria [21], pneumonia [11], and diarrhoea [11]. Despite the strategy bringing a remarkable reduction in child and infant mortality rate in Ethiopia [10], a lower level of ICCM utilization has been recorded in this study.

In our study, the proportion of mothers or caregivers who utilized the ICCM service was only 22.5% during the study period. Although the inability of the study to include those children who received services at the health post and went back to their home during the data collection period could have led to the underestimation of the utilization coverage, this finding suggests that the coverage is lower than expected. This finding is nearly similar to the studies in Oromiya region, Ethiopia [6, 10, 22]. However, the finding showed better utilization coverage than the studies done in other parts of the country [21, 23]. Whatever the case, the finding was not promising. Therefore, further community-based strategies that encourage caregivers are needed to enhance ICCM service utilization. Though better improvements were documented [10, 24] with regard to the quality and accessibility of ICCM service, the finding of this study suggests the need for extra efforts to raise utilization coverage.

We have outlined the reasons why study participants were not able to use ICCM services. Accordingly, lack of drug and closed health posts were major reasons mentioned by 54.8% and 37.5% of study participants consecutively for not utilizing the services. According to a study conducted in Oromia, Amhara, and Tigray regions, these were persistent reasons that hindered mothers/caregivers from utilizing the existing ICCM services [22]. Drug shortage and lack of access were particularly important challenges for Ethiopia and other African countries as mentioned in a systematic review study [25]. Although our study did not address the

TABLE 3: Factors associated with ICCM service utilization in Hadiya Zone, Ethiopia, June 2018.

Variable	Variable category	Frequency	Crude OR 95% CI	Adjusted OR 95% CI
Sex of the respondent *	Male	82	1.82 (0.95, 3.47)	
	Female	492	1	
Marital status *	In union	551	1	
	Not in union	23	0.53 (0.22, 1.27)	
Respondents' age *	18–25	129	0.97 (0.58, 1.63)	
	26–30	208	1.04 (0.66, 1.63)	
	31–40	220	1	
	>40	17	1.37 (0.38, 4.97)	
Respondents' education	No formal education	317	1	1
	Primary education	207	0.57 (0.38, 0.86)	0.61 (0.39, 0.96)
	Secondary education	32	1.03 (0.41, 2.62)	1.08 (0.39, 3.04)
	Tertiary education	18	4.05 (0.53, 31.01)	3.35 (0.41, 27.49)
Signs of malnutrition	Yes	17	0.38 (0.15, 0.97)	0.37 (0.12, 1.14)
	No	540	1	1
Families sought medical help	Yes	81	0.48 (0.29, 0.79)	0.66 (0.37, 1.17)
	No	476	1	1
Visited by HEWs	Yes	319	1	1
	No	238	2.24 (1.47, 3.43)	1.18 (0.72, 1.93)
Informed about ICCM before	Yes	504	1	1
	No	53	13.12 (5.26, 32.77)	6.53 (2.50, 17.05)
WDA membership	Yes	410	1	1
	No	147	4.63 (2.82, 7.59)	2.23 (1.26, 3.92)
Had got services by HEWs before	Yes	324	1	1
	No	233	7.01 (3.37, 14.90)	2.20 (0.93, 5.18)
Accept HEWs services	Yes	405	1	1
	No	152	5.80 (1.78, 18.87)	3.08 (0.83, 11.45)
Family income	<22.03	138	1.53 (0.91, 2.59)	1.01 (0.55, 1.83)
	22.04–36.69	117	2.4 (1.31, 4.41)	2.00 (1.02, 3.81)
	36.70–89.02	176	1	1
	≥89.03	143	1.42 (0.85, 2.36)	1.32 (0.75, 2.31)
Family size *	≤4.5	138	1.18 (0.74, 1.90)	
	>4.5	436	1	

*Variables that were not transferred to multivariable analysis ($P > 0.05$).

quality issues of ICCM services alongside the provider (health extension workers) side factors, low-quality services could be as important as the above reasons for not using the services. Therefore, further research on the quality of ICCM services may be needed to reduce utilization gaps.

Among respondents who have had sickness during the last two weeks prior to data collection, a low percentage of participants (4.8%) visited health posts. This finding implies that the proportion of families/caregivers who were seeking health care from health extension workers is lower than what was observed in other studies in Ethiopia [10] and other African countries [23, 26–28].

Although health extension workers are expected to visit all residents in their catchment, only 56.8% of respondents reported that they had been visited once in their lifetime. This finding showed that home visit made by health extension workers is slightly higher than the finding in Northern parts of the country [24]. However, it would have been better scaled up since it provides opportunities to create awareness and promote the utilization of ICCM services.

As observed from multiple logistic regressions, those study participants who were informed about ICCM service before the study were more likely to use ICCM services than

noninformed participants. Although there is no concrete evidence in Ethiopia, awareness-raising is associated with access to all health services, including ICCM. An intervention study in Niger and Mozambique suggests that prior information is associated with an increase in the use of ICCM services [27].

Interestingly, participants who were not members of the women development army (WDA) were more than two times more likely not to utilize ICCM services when compared to their member counterparts. The finding implies that women development army may raise the practice of using the services. This is usually an extension of the national community mobilizing strategy known as the health development army (HDA) [29] to improve the implementation of health extension packages including ICCM services. Therefore, the finding of this study suggests that the strategy should further be consolidated and continuously cultivated.

Other sociodemographics like maternal education except for primary education, income except for the second quartile, marital status, sex, age, occupation, and so forth were not associated significantly with the utilization of ICCM services in our study. Similarly, participants and provider-related factors such as illness type, walking distance from home to health posts, health care seeking, visits made

by health extension workers, and acceptance of services provided by health extension workers were not associated with utilization of ICCM service in our study. On the other hand, maternal education, illness type, and distance were associated with the utilization of ICCM in other studies elsewhere [2]. This could be due to the fact that contextual factors operating at the grass root level in the study settings could have brought the observed differences.

5. Conclusions

Our finding shows low coverage of ICCM utilization among the study participants implying that the current pace in ICCM implementation needs further promotional efforts. Extensive involvement of currently existing approaches at the community level like health centre-health post linkage, home visits made by health extension workers, and participation in the health development army might be needed to improve the utilization of ICCM services.

In our study, factors like awareness about ICCM service and membership of the study participant to the existing health development team were the two statistically significant factors associated for utilizing ICCM service. This may suggest the need for advocacy to increase participation in the health development army and information education to increase the level of awareness and formal education efforts.

The provider side, barriers like health extension workers competence, health professionals' skills to support the health extension workers, engagement of development partners, and other client-side factors might need further research works to improve ICCM service utilization.

Abbreviations

ACTs:	Artemisinin-based combination therapy
CHWs:	Community health workers
FP:	Family planning
HDA:	Health development army
HEWs:	Health extension workers
ICCM:	Integrated community case management
MDG)-IV:	Millennium development goal IV
SNNPR:	Southern Nations Nationalities and Peoples Region
WDA:	Women development army
FMOHE:	Federal Ministry of Health Ethiopia.

Data Availability

All the data are available within the manuscript. The datasets used and/or analysed during the current study are available from the corresponding author based on reasonable request.

Ethical Approval

Prior to data collection, ethical clearance was obtained from the institutional review board of Hossana College of Health Sciences. Subsequently, a formal letter of permission was produced from administrative bodies of the zone to the district and the health centre level. Confidentiality was

assured for any information provided by the respondents and a coding system was employed.

Consent

Informed written consent was obtained from the caregivers or the guardians before the data collection time after explaining the objectives of the study.

Disclosure

The funder has no role in preparing methodological and analytical procedures followed in the research procedure other than check-ups and reviews periodically as per the schedule

Conflicts of Interest

The authors declare that they have no conflicts of interests.

Authors' Contributions

SY, YH, and BA conceived the idea, wrote the proposal, participated in data management, analysed the data, and drafted the paper. MA approved the proposal, participated in data analysis, and revised the subsequent draft of the paper. All authors read and approved the final manuscript. Samuel Yohannes, Yitagesu Habtu, and Bereket Abreham equally contributed to the study.

Acknowledgments

The authors would like to thank the Hossana College of Health Sciences Research and publication for approving the ethical methodological procedures through the research and ethical technical review committee and funding this research activity. The authors would also like to acknowledge the study participants for their consent to genuinely participate in the study and provide required information; health professionals working in selected health facilities; and data collectors for collecting the required information. This work was supported by the Hossana College of Health Sciences with Grant no. HCS-6223, 2018.

Supplementary Materials

S1: English version of the questionnaire that was used to measure the utilization of Integrated Community Case Management and its factors in Southern Ethiopia, 2018. (*Supplementary Materials*)

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