

Assessment of the quality score of youth-friendly service and associated factors among youths in Hosanna town public health facilities, southern Ethiopia: Using a Donabedian model

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Abstract

Background: The issues of friendly youth services are highly sensitive to the sociodemographic, sociocultural, and socioeconomic factors of the community. Assessing the quality of friendly youth services is fundamental to determining how care is being delivered to youths.

Objective: To assess youth-friendly service quality and associated factors in public health facilities in Hosanna town, southern Ethiopia, 2021.

Method: A facility-based quantitative cross-sectional study design supplemented by qualitative data was conducted from May 3 to May 31/2021. The total sample size for quantitative was 422. A systematic random sampling technique was used to select youths. Quantitative data were entered by using Epi data version 3.1 and analyzed using SPSS version 24 software. Qualitative findings were coded and analyzed after observation of the client-provider interaction and the health facilities. Finally, the results are presented using narrations, tables, and figures. Descriptive statistics such as frequency, percent, tables, and figures were used. Bivariable analysis was performed, and variables with a p-value less than 0.025 were entered into multivariable logistic regression analysis. Statistical significance was declared at a p-value less than 0.05 with a 95% confidence interval.

Result: The overall structural, process, and output quality scores were 50.0%, 35.3%, and 64.9%, respectively. Males were 37% times less likely to be satisfied compared to females, youths whose mothers' educational level was secondary school were 54% times less likely to be satisfied compared to youths whose mothers were not formally educated, youths whose mothers' educational level was college, and above were 61% times less likely to be satisfied compared to youths whose mothers' were not formally educated, and youths who stayed in health facility for 31- 60 minute were 4 times more likely to be satisfied compared to youths who stayed more.

Conclusion: The quality score of friendly youth service was below the World Health Organization standard in all three components. Therefore, health facilities should be improved in all dimensions.

Keywords: *quality care, youth-friendly service, public health facilities*

Introduction

Youths are young individuals who are at the age of 15-24 years (1). Youth-friendly service is a service for enhancing health services quality for youths that aims to avail services that are accessible, acceptable, and appropriate for youths (2, 3). They are in the right place, at the right time, by the right price, or free where necessary and delivered acceptably to young people (2, 4).

Currently, there are more young people in the world than ever before. Half of the world's population is under the age of 25 years old, and 1.8 billion are between the age groups of 15-24 years. Petering, young people to reach a good quality of life, and sexual, and reproductive health is the outermost priority. It is important in terms of attaining broader development goals related to education, poverty alleviation, and gender equity (5).

In developing countries, the level of knowledge of youths about the use of youth-friendly services is limited (6). As a result, young people are at high risk for a broad range of health problems, such as early sexual debut, unwanted pregnancy, unsafe abortion, pregnancy-related complications, sexually transmitted infections (STIs), and human immune deficiency virus or human immune deficiency syndrome (HIV/AIDS). Youths are vulnerable to these problems because they are more likely to engage in unplanned and unprotected sex, lack the necessary skills to negotiate for safer sex and engage in sexual activity with multiple partners (7).

Since the 1994 International Conference on Population Development (ICPD), countries have been encouraged to adopt programs that safeguard youths' privacy, confidentiality, respect, and informed consent. These services can meet such expectations of youth-friendly services (YFS) and are designed to improve health care for youths (8, 9). The services include counseling, family planning, voluntary counseling, testing (VCT), and treatment of STIs (10). However, in Ethiopia, the service of family planning is being given under maternal and child health packages,

and college and university students, adolescent age groups, and long truck drivers are encouraged to be tested with or without voluntarily.

Although various national policies and strategies, including the national youth issued in 2000 and the Youth Sector Development Plan from 2006-2010, were encouraging in Ethiopia and widely distributed, their implementation was poor and lacked quality care (11). Youths did not properly use the available health services in Southern Nations, nationalities, and people regions (12).

In Ethiopia, studies have been conducted to investigate the quality of youth-friendly service focused on assessing factors that affect youth-friendly service utilization and quality (13-15). These studies did not consider health system factors, knowledge of youths that influence the use of reproductive health services, or quality care. In this study, health system factors and knowledge of youth-friendly services were incorporated.

The issues of youth-friendly services are highly sensitive to the sociodemographic, sociocultural, and socioeconomic status of the community. This sensitive nature makes it vulnerable to the knowledge and health system of health facilities. These factors influence the quality of friendly youth services and were assessed in this study. Assessing the quality of friendly youth services is fundamental to determining how care is being delivered to youths. To address this, the researchers assessed structural/input, process, and output (youth satisfaction) by using a Donabedian model of quality care. The Donabedian model of quality care has three components: input (assesses the structure of health facilities), process (assesses how care is being delivered), and output (assesses the satisfaction level of youths with the service delivered for them). Therefore, this study assessed the quality of friendly youth services and its associated factors among youths at Hosanna town public health facilities by using the Donabedian model.

Methods and materials

Study area, and period

The study was conducted in public health facilities in Hosanna town. The town is found in the South Nation Nationalities and Peoples` Region, 196 km south of Hawassa, the capital of the region, and 232 km south of Addis Ababa, the capital of Ethiopia. The town has a total area of 23 kilometer square. Based on the 2007 census report, the total population of the town is estimated

to be 69,995. In Hosanna town, there are four public health facilities: one referral hospital and three health centers named Wachemo University Nigist Eleni Mohammed Memorial Comprehensive Specialized Hospital (WCUNEMMCSH), Hosanna Health Center, Lichamba Health Center, and Bobicho Health Center. In addition, there are eight urban health extension worker offices in which health extension workers are working. All health facilities that are included in this study are giving youth-friendly services. From them, WCUNEMMCSH and Hosanna Health Centers have separate youth-friendly service rooms. However, Lichamba and Bobicho health centers give youth-friendly services in a single room simultaneously with other medical cases. The study was conducted from May 3 to 31, 2021.

Study design

A facility-based, quantitative cross-sectional study design supplemented by qualitative data was conducted.

Source population

All youths aged 15-24 years who visited selected public health facilities in Hosanna town were the source population for the youth satisfaction part.

Study population

All selected youths aged 15-24 years who visited public health facilities in Hosanna town for youth-friendly service during the study period for output. For the input and process parts, the managers of the health facilities and random observation of youth-friendly service provider-client interaction were included.

Eligibility criteria

Youths who were 15-24 years old at health facilities in Hosanna town and the managers of the health facilities were included. Youths who were severely ill at the time of data collection and unable to hear were excluded.

Sample size determination

For the input part, the managers of the health facilities were taken, and for the process part, three observations in each health facility, for a total of twelve youth-friendly service provider-client (youth) interactions, were determined. For output (youth satisfaction), a single population proportion formula was used to estimate the minimum possible sample size required for the study. It was computed by taking an assumption of output (youth satisfaction) 49.1% taken from

the previous study conducted on the quality of youth-friendly service in Arba Minch town (13) with a 5% margin of error, 95% confidence level.

$$n = \frac{\left(\frac{z\alpha}{2}\right)^2 p(1-p)}{d^2} n = \frac{(1.96)^2 * 0.491 * 0.509}{(0.05)^2} \quad n=384$$

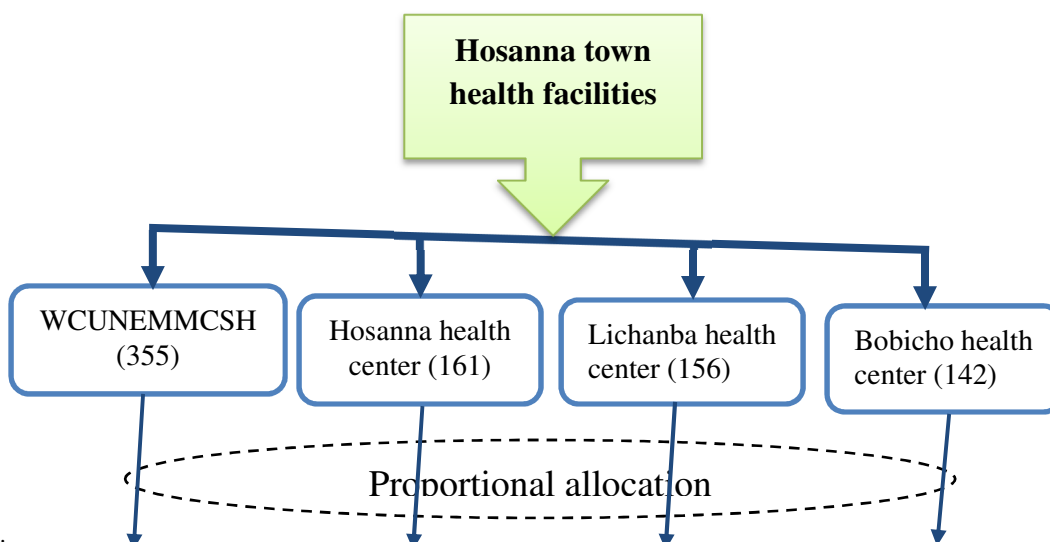
Then, adding a 10% nonresponse rate, the final sample size was 422.

Sampling procedures

For the input part, all health facilities managers were selected because they could give full information about the respective health facilities, and for the process part, twelve randomly selected youth-friendly service provider-client (youth) interaction sessions (three in each health facility) were carried out.

For output (youth satisfaction), the past six months of the youth flow report of the four selected public health facilities were taken from registration (November 2020 to April 2021). Accordingly, the number of youth-friendly service users was revealed as WCUNEMMCSH (2130), Hosanna Health Center (966), Lichamba Health Center (936), and Bobicho Health Center (852) then, the average was taken for one month in each health facility, and it was; (355, 161, 156, and 142), respectively. The total monthly flow of youth of all health facilities was 814.

Then, proportional allocation was used to determine the required number of youths from each health facility. Finally, a systematic random sampling technique was used to interview youths based on the constant value 2, which was obtained by dividing the source population of 814 by the total sample size of 422. The first youth were selected randomly, and every 2nd youth was interviewed during exit from the youth-friendly service. (Figure 1)



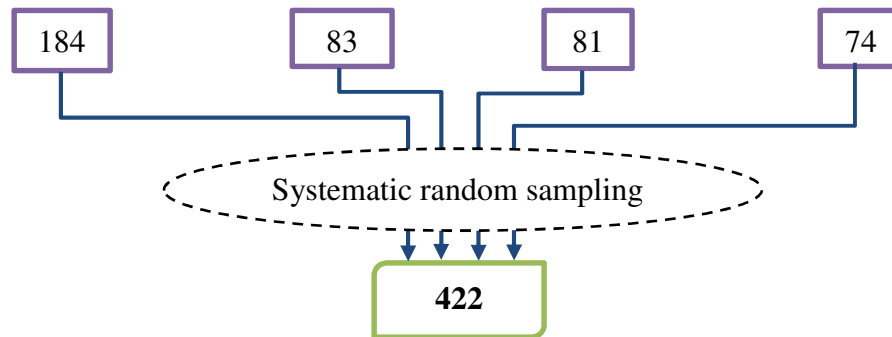


Figure 1: Schematic presentation of the sampling technique of the quality of friendly youth service and associated factors in public health facilities in Hosanna town, southern Ethiopia, 2021.

Study variables

Dependent variable

The quality score of youth-friendly service

Independent variables

Sociodemographic factors: age, sex, religion, residence, ethnicity, occupation, educational level, marital status, educational level of parents, and monthly income of parents

Knowledge-related factors: Information about YFS, information about STIs, and source of information

Health system-related factors: time taken to reach health facilities, payment for the service, and convenient working time

Utilization of youth-friendly service-related factors: YFS use in the past 12 months and waiting time in health facilities

Operational, and definition of terms

Youth-friendly services: the available, accessible, and affordable services within YFS clinics in Hosanna town (family planning, VCT, STI diagnosis, and treatment, abortion care, post-abortion care, PNC, and condom use) in this study.

Youth satisfaction: the youth`s perspective of gained care level. It was measured by using a five-point Likert scale as (1) very dissatisfied, (2) dissatisfied, (3) neutral, (4) satisfied, and (5) very satisfied for 15 questions. It was computed by considering the given Likert scale point of a minimum value of 15, if the response was very dissatisfied for all fifteen questions, and a

maximum value of 75 if the response was very satisfied. Then, categorized as **satisfied** (if scored mean (i.e., 42.82) and above) and **dissatisfied** (if scored below the mean) (13).

Quality of service delivery: Quality of care is care that is effective, efficient, accessible, acceptable, equitable, and safe to service users.

Input: Indicate the general perspectives of all health facilities and what they seem like.

Process: observation during client-provider interactions.

Output: Youths' perception and satisfaction with the quality of friendly youth services.

Data collection procedures

For the input (structural) part, face-to-face interviews with health facility managers were performed using a checklist, and for the process part, youth-friendly service provider-client (youth) interaction observations were conducted by researchers. Data collection tools were developed from the WHO and national guidelines (16, 17). For output (youth satisfaction), face-to-face interviews with youths were employed. The questionnaire was translated from English to Amharic (the local language of Ethiopia) and then back to English by language experts to maintain consistency. Four diploma nurses and two bachelor of sciences degree health professionals were recruited as data collectors and supervisors, respectively.

Data quality assurance

A pretest was made on (5%) of the sample before collecting the data at Worabe town public health facilities, and necessary modification was made. One day of training was given to data collectors and supervisors concerning the aim of the study, issues of confidentiality, and privacy. Close supervision was performed daily to ensure completeness and consistency of each questionnaire and checklist. Collected data were checked for incompleteness and inconsistency by supervisors and investigators. Data entry and cleaning were performed carefully to avoid potential errors.

Data processing, and analysis

The data obtained for output from each respondent were entered using Epi-data version 3.1 and exported to SPSS version 24 for analysis. Descriptive statics (frequency, mean, and standard deviation) were used to describe the study population concerning relevant variables. To check the interaction among independent variables, multicollinearity was checked. The fitness of the model was checked using the Hosmer-Lemshow goodness of fit test. Bivariable analysis was performed, and variables with a p-value less than 0.025 were entered into multivariable logistic

regression analysis. Statistical significance was declared at a p-value less than 0.05 with a 95% confidence interval. The input and process data were analyzed and presented in tables, percentages, and narratives based on the quality score of the Donabedian model.

Result

Structural (input) quality of youth-friendly service

The health facilities have a total of 1,033 health workers. Youth-friendly services were given by health workers who received training in each health facility. The age of the health care providers ranged from 24 to 52 years old. All health facilities have piped water, functional toilets, waste disposal facilities, and satisfactory medical instruments that enable them to provide the required YFS packages. Information, education, and communication materials to educate youth clients are not available. In all public health facilities, service information delivering materials such as signposts were not posted. WCUNEMMCSH provides all of the required packages of YFS recommended by the World Health Organization. However, the remaining two health centers do not provide post-abortion care due to the turnover of health professionals. The total number of healthcare workers who received training on youth-friendly service packages was 9.6%. (Table 1).

Table 1: Percentage of health professionals trained on YFS packages in public health facilities in Hosanna town, Southern Ethiopia, 2021.

Health facility	Total no of health workers	Trained on YFS		Trained on PAC		Trained on VCT		Trained on STI	
		No	%	No	%	No	%	No	%
WCUNEMMCSH	1,033	17	1.3	5	0.4	11	0.8	11	0.8
Hosanna health center	159	7	4.4	3	1.9	8	5.0	8	5.0
Lichamba health center	94	2	2.1	1	1.2	4	4.3	4	4.3
Bobicho health center	116	4	3.4	2	1.7	6	5.2	6	5.2
Overall % of health care providers trained on YFS packages		9.6							

YFS: youth-friendly services, PAC: post-abortion care, VCT: voluntary counseling, and testing
STI: sexually transmitted infection

The overall quality score of YFS structural quality was 50.0%, and all health facilities rating points showed variation: WCUNEMMCSH 59.4%, Hosanna Health Center 56.3%, Lichamba Health Center 43.8%, and Bobicho Health Center 37.5%. (Figure 2).

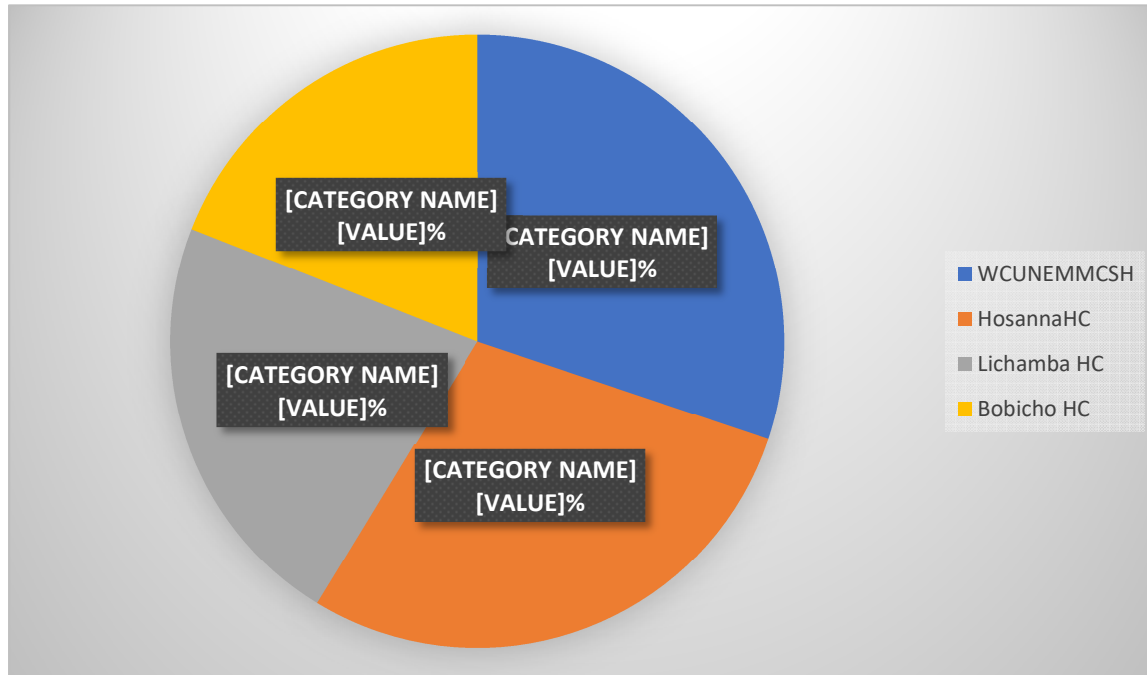


Figure 2: Quality good score of youth-friendly service structural (input) quality in public health facilities in Hosanna town, Southern Ethiopia, 2021.

Hint: The percentage was obtained by computing 19 for WCUNEMMCSH, 18 for Hosanna Health Center, 14 for Lichamba Health Center, and 12 for Bobicho Health Center out of 32 multiplied by 100, and divided by the total number 32 for each health facility. The overall percentage was obtained by computing the number of four health facilities multiplied by 100 and divided by the computed total number of four health facilities.

Process quality of youth-friendly service

In this study, none of the healthcare workers introduced themselves to clients, and none of them used audiovisual materials. The Hosanna Health Center had better process quality than the remaining health facilities. It varied for each health facility. The process quality score for the Hosanna Health Center was 58.8%, which was the highest; for WUNEMMCSH, 37.3%; for Lichamba Health Center, 23.5%; and Bobicho Health Center, 21.6% was the lowest, and the overall percentage of the process score was 35.3%. (Table 2).

Table 2: Process quality indicators of friendly youth service in public health facilities in Hosanna town, southern Ethiopia, 2021.

Process quality indicators	Percentage of goodness score			
	WCUNEMMCSH	Hosanna HC	Lichamba HC	Bobicho HC
Introduces his/her name or responsibility	0.0	0.0	0.0	0.0
Measures the vital signs of the youth	100.0	33.3	0.0	0.0
Gives his/her full attention to the youth	66.7	100.0	33.3	0.0
Written policies, and procedures exist	0.0	100.0	0.0	33.3
Protocols, and guidelines for following services	0.0	100.0	0.0	33.3
Gives sufficient time for consultation	100	66.7	100.0	33.3
Asks permission before doing a physical examination	33.3	100.0	33.3	0.0
Provides information on medical condition	66.7	100.0	33.3	33.3
Provides information on treatment options	66.7	66.7	33.3	0.0
Asks youth preference for treatment options	33.3	66.7	0.0	33.3
Informs on risk reduction, and prevention methods	100.0	66.7	100.0	66.7
Uses audiovisual materials	0.0	0.0	0.0	0.0
Provides information on follow-up actions	0.0	33.3	33.3	0.0
Informs the service available to youths	0.0	0.0	0.0	33.3
Hears complaints from youths	66.7	33.3	33.3	66.7
Waiting time to see a health care provider	0.0	100.0	0.0	33.3
Provides auditory individuals to keep the youth's privacy	0.0	33.3	0.0	0.0
Total quality of process score for each facility	37.3	58.8	23.5	21.6
The overall quality of the process score	35.3			

Output (youth satisfaction) quality of friendly youth service**Sociodemographic factors of youths**

A total of 410 youths participated in the output (youth satisfaction) of this study, which made the overall response rate 97.2%. Nearly 214(52.2%) of the youths were males, and more than half 290(70.7%) of the youths were 20-24 years old. Approximately 178(43.4%) were followers of the Protestant religion, and nearly half 214(52.2%) were in the ethnic group of Hadiya. Of the residents of most youths, 352(85.9%) were urban, and the marital status of more than half, 318(77.6%) were single. Educational level 174(42.4%) of the youths was in secondary school, and nearly half, 213(52.0%) were leading their life activities by a merchant. (Table 3).

Table 3: Sociodemographic characteristics of youths in public health facilities in Hosanna town, southern Ethiopia, 2021.

Variable (n=410)	Category	Frequency	Percent
Sex of respondents	Male	214	52.2
	Female	196	47.8
Age	15-19	120	29.3
	20-24	290	70.7
Religion	Protestant	178	43.4
	Orthodox	114	27.8
	Catholic	60	14.6
	Muslim	54	13.2
	Others (Adventist, Apostle)	4	1.0
Ethnicity	Hadiya	214	52.2
	Kembata	75	15.3
	Gurage	65	15.9
	Silte	48	11.7
	Others (Wolaita, Amhara, Oromo)	8	2.0
Residence	Urban	352	85.9
	Rural	58	14.1
Marital status	Married	83	20.2
	Single	318	77.6
	Divorced	6	1.5
	Widowed	3	0.7
Educational level	Can read, and write	30	7.3
	Primary school	78	19.0
	Secondary school	174	42.4
	College, and above	128	31.2
The educational level of the father	Read, and write	87	21.2
	Primary school	71	17.3

	Secondary school	135	32.9
	College, and above	117	28.5
The educational level of the mother	Read, and write	132	32.2
	Primary school	121	29.5
	Secondary school	102	24.9
	College, and above	55	13.4
Occupation	Daily laborer	63	15.4
	Merchant	213	52.0
	Student	71	17.3
	Government employee	63	15.4
Monthly income in ETB	500-2000	74	18.0
	2100-5000	175	42.7
	>5000	161	39.3

Knowledge of youths about youth-friendly service

More than half, 239(58.3%) of youths ever heard about youth-friendly services, and 237(99.2%) knew the services provided under friendly youth services. Only 125(30.5%) heard about sexually transmitted infections, and the type of sexually transmitted infection known by most youths was HIV/AIDS, which accounted for 92(73.6%). (Table 4).

Table 4: Knowledge of youths about reproductive health services in public health facilities in Hosanna town, southern Ethiopia, 2021.

Variable (n=410)	Category	Frequency	Percent
Ever heard about youth-friendly service	Yes	239	58.3
	No	171	41.7
Source of information about youth-friendly service (n=239)	Parents	10	4.2
	School	56	23.4
	Health providers	10	4.2
	Peers	106	44.4
	Posters	13	5.4
	Radio	44	18.4
Know services provided under YFS (n=239)	Yes	237	99.2
	No	2	0.8
Type of services provided under YFS youths know (n=237)	Family planning	57	24.1
	Treatment of STIs	43	18.1
	VCT for HIV/AIDS	48	20.3
	Abortion service	44	18.6
	Information education, and communication	19	8.0
	Contraception	19	11.0

Ever heard about sexually transmitted infections	Yes	125	30.5
	No	285	69.5
Type of sexually transmitted infections youths know (n=125)	Syphilis	13	10.4
	Gonorrhea	16	12.8
	Chancroids	4	3.2
	HIV	92	73.6

Health facility-based factors of youth-friendly service

For approximately 195(47.6%) youths, the time taken to reach the health facility from home on foot was less than or equal to 30 minutes, and the majority, 384(93.7%) were ever asked to pay for the service used in the health facility. The working hours of the health facility were convenient for approximately 388(94.6) youths. (Table 5).

Table 5: Health facility-based factors of the quality of youth-friendly service public health facilities in Hosanna town, southern Ethiopia, 2021.

Variable (n=410)	Category	Frequency	Percent
Time taken to reach health facility from home on foot	≤ 30 minutes	195	47.6
	31-60 minutes	171	41.7
	> 60 minutes	44	10.7
Ever asked to pay for the service used	Yes	384	93.7
	No	26	6.3
The working hour of the health facility is convenient	Yes	388	94.6
	No	22	5.4
The most convenient time for youths (n=22)	Earlier in the morning	2	9.1
	Late the afternoon	3	13.6
	Weekends	4	18.2
	Holidays	1	4.5
	Others (evening, lunchtime)	12	54.5

Utilization of youth-friendly service

Less than half, 144(35.1%) of youths ever used any youth-friendly service in the past twelve months, and the main reason for not using the service was not recognized signs or symptoms. For the majority, 324(79.0%) of youths, the time spent in the health facility until receiving the service was greater than 60 minutes. (Table 6).

Table 6: Utilization of youth-friendly service public health facilities in Hosanna town, southern Ethiopia, 2021.

Variable (n=410)	Category	Frequency	Percent
Ever used any youth-friendly service in the past twelve months	Yes	144	35.1
	No	266	64.9
The reason for not ever using any youth-friendly service in the past twelve months	Distance to the health facility	8	3.0
	Not recognizing the signs and symptoms	213	80.1
	Fear of being seen by parents or people whom they knew	45	16.9
Time stayed in the health facility until I got the service	≤ 30 minutes	6	1.5
	31-60 minutes	80	19.5
	> 60 minutes	324	79.0

Specific youths' satisfaction with the quality of friendly youth service

The specific satisfaction of youths with the quality of friendly youth service in public health services in public health facilities in Hosanna town is shown below. (Table 7).

Table 7: Specific output (youth satisfaction) on the quality of youth-friendly service in public health services in public health facilities in Hosanna town, southern Ethiopia, 2021.

Variable (n=410)	Category	Frequency	Percent
Understandable explanation	Satisfied	260	63.4
	Dissatisfied	150	36.6
Explanation of laboratory results	Satisfied	227	55.4
	Dissatisfied	183	44.6
Way of Answering the question	Satisfied	189	46.1
	Dissatisfied	221	53.9
Time for asking questions	Satisfied	203	49.6
	Dissatisfied	207	50.5
Information kept confidential	Satisfied	189	46.1
	Dissatisfied	221	53.9
Fear of being seen by others	Satisfied	187	45.6
	Dissatisfied	223	54.4
Health workers give attention	Satisfied	206	50.2
	Dissatisfied	204	49.8
Medicines and supplies in the	Satisfied	193	47.1

facility	Dissatisfied	217	52.9
Particular services not given	Satisfied	168	41.0
	Dissatisfied	242	59.0
Interrupts of discussion	Satisfied	122	29.8
	Dissatisfied	288	70.2
Services delivered to youths	Satisfied	189	46.1
	Dissatisfied	221	53.9
Health workers provide comfort	Satisfied	66	16.9
	Dissatisfied	344	83.9
Comfortability sex of the worker	Satisfied	176	42.9
	Dissatisfied	234	57.1
Convenience of working days and hours	Satisfied	158	38.5
	Dissatisfied	252	61.5
Receptionist	Satisfied	82	20.0
	Dissatisfied	328	80.0

The overall output (overall youth satisfaction) on the quality of youth-friendly service

In this study, 266(64.9%) youths were satisfied, but 144(35.1%) youths were dissatisfied with the quality of youth-friendly services in public health facilities in Hosanna town. (Figure 3).

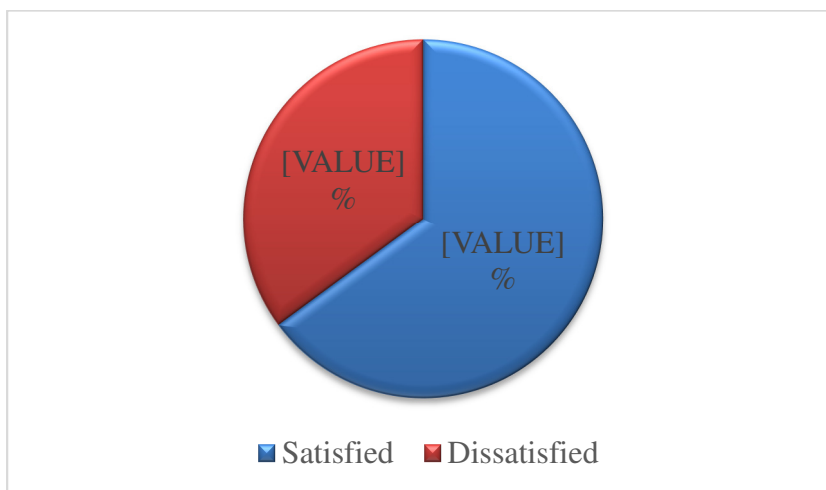


Figure 3: The overall output (youth satisfaction) on the quality of youth-friendly service in public health facilities in Hosanna town, southern Ethiopia, 2021.

Factors associated with the quality of friendly youth services

In bivariable logistic regression, the sex of youths, educational level of mothers, and staying time in the health facility until receiving the service were significantly associated with the quality of youth-friendly services. Additionally, these variables were significantly associated in multivariable analysis with the quality of friendly youth services. Sex of youths [AOR: 0.63, 95%CI: 0.41, 0.97], secondary school educational level of mothers [AOR: 0.46, 95%CI: 0.22, 0.99], college, and above educational level of mothers [AOR: 0.39, 95%CI: 0.18, 0.84], and staying time in the health facility until get the service for 31- 60 minutes [AOR: 4.89, 95%CI: 2.41, 9.89]. (Table 8).

Table 8: Factors associated with the quality of youth-friendly services in public health facilities in Hosanna town, Southern Ethiopia, 2021

Variables (n=410)	Category	Level of satisfaction		COR (95% CI)	AOR (95% CI)	P- value
		Dissatisfied	Satisfied			
Sex of youths	Male	65(15.9%)	149(36.3%)	0.65(0.43, 0.97)	0.63(0.41, 0.97)	0.036*
	Female	79(19.3%)	117(28.5%)	1	1	
The education level of mothers	Not formally educated	43(10.5%)	89(21.7%)	1	1	
	Primary school	47(11.5%)	74(18.0%)	0.58(0.28, 1.21)	0.62(0.29, 1.33)	0.221
	Secondary school	42(10.2%)	60(14.6%)	0.44(0.21, 0.92)	0.46(0.22, 0.99)	0.048*
	College, and above	12(2.9%)	43(10.6%)	0.39(0.19, 0.89)	0.39(0.18, 0.84)	0.016*
Staying time in the health facility until the service	≤ 30 minutes	2(0.5%)	4(1.0%)	1.38(0.25, 7.62)	1.24(0.18, 7.07)	0.808
	31-60 minutes	10(2.4%)	70(17.1%)	4.81(2.39, 9.68)	4.89(2.41, 9.89)	0.000*
	> 60 minutes	132(32.2%)	192(46.8)	1	1	

Abbreviations: COR: crude odds ratio; AOR: adjusted odds ratio; CI: confidence interval

“*” statistically associated at $p < 0.05$, “1” reference group

Discussion

The overall quality scores of the youth-friendly service for the structural (input), process, and output (youth satisfaction) dimensions were 50.0%, 35.3%, and 64.9%, respectively. The score of all YFS components was lower than the WHO cutoff point of 75% in all three quality dimensions. As a result, the overall quality score of youth-friendly service was below the standard. Its structural and process quality was lower; however, its output quality was higher than that of a study conducted in two health centers of Arba Minch (13). The level of structural

quality was lower than that of YFS assessments made in Uganda (18). This difference may be due to the inclusion of comprehensive specialized hospitals in this study not being included in others, and the perspective of youths may vary from community to community.

It was lower in quality than a study finding in South Africa (19). It was not in line with the WHO youth-friendly service standard set for service accessibility and acceptability criteria (20). It was lower in quality than a study conducted in Egypt (21). These differences might be due to the inadequacy of resources and competing health priorities in the study area and the result of differences in the healthcare system related to provider training, competency, and specialization. Additionally, the inclusion of comprehensive specialized hospitals may have the potential for variation.

In this study, sex was significantly associated with youth satisfaction with youth-friendly services, in which male youths were 37% times less likely to be satisfied with youth-friendly services than female youths. In contrast, the sex of the youths in a study done among preparatory school students in Sodo town, South Nation Nationalities, and Peoples` Regional State, Ethiopia, indicated that female students were 2.1 times more likely to be satisfied with youth-friendly service (22). This might be due to differences in service expectations and the type of service given to youths.

The educational level of mothers was significantly associated with youth-friendly satisfaction in that, youths whose mothers' educational level was secondary school were 54% times less likely to be satisfied with youth-friendly service, and youths whose mothers' educational level was college, and above were 61% times less likely to be satisfied with youth-friendly service compared to youths` whose mothers were not formally educated. This might be because educated mothers give prior information to their youths regarding youth-friendly service and develop perceptions, and the friendly youth service given in health facilities may not be as much enough as the youths expected, which may decrease the level of satisfaction.

In this study, the staying time in the health facility until receiving the service was significantly associated with YFS; youths who are staying time in the health facility until receiving the service for 31-60 minutes were 4 times more likely to be satisfied with youth-friendly service than

youths whose waiting time was greater than 60 minutes. In contrast, another study indicated that clients who waited for services for more than one hour were 98% times less likely to be satisfied with youth-friendly services than those who waited for less than thirty minutes (13). This was supported by a study conducted in the Amara Regional State, Ethiopia, which indicated that clients who waited longer were more dissatisfied than their counterparts (23). This slight variation might be due to the nature of the friendly youth friendly service given, and the perception perspective of youths toward the services at the required time.

Strengths, and limitations of the study

The inclusion of health centers and comprehensive specialized hospitals in the study were strengths of this study. However, focusing only on public health facilities and the cross-sectional design of the study may be raised as possible limitations.

Conclusion

This study showed that the overall quality of youth-friendly service was below WHO standards in all three components, that is, structural (input), process, and output (youth satisfaction) qualities. The sex, educational level of mothers, and waiting time in the health facility were significant factors that affected the output or youth satisfaction of youth-friendly service.

Recommendation

Based on the study findings, the following recommendations were made for concerning bodies:

To healthcare workers who provide youth-friendly services

Should introduce themselves to youths to make smooth, and close interactions with youths.

Should give full attention, practice consultation, and minimize interruption during the process.

Privacy and confidentiality should be well-secured.

To health care managers

There should be separate youth-friendly service rooms (for Lichamba and Bobicho health centers), and the number of healthcare workers trained on youth-friendly service packages should be increased to minimize complaints raised by youths regarding waiting time.

The convenience time that youths prefer should be considered.

Author`s contribution

Both authors made significant contributions to the study design, execution, and acquisition of data, analysis, and interpretation. Both authors critically revised approved the final version to be published, and agreed to take responsibility for all aspects of the work.

List of abbreviations, and acronyms used

AIDS: Acquired Immune Deficiency Syndrome; EDHS: Ethiopian Demography Health Survey; FP: Family Planning; HC: Health Center; HIV: Human Immune Virus; ICPD: International Conference on Population Development; STIs: Sexually Transmitted Infections; VCT: Voluntary Counseling and Testing; WCUNEMMCSH: Wachemo University Nigist Eleni Mohammed Memorial Comprehensive Specialized Hospital; WHO: World Health Organization; YFS: Youth Friendly Service

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Competing of interest

We declare that we have no conflicts of interest

Ethical clearance

Ethical approval letters were obtained from the Wachemo University College of Health Sciences School of Public Health. Official permission was obtained from the Hosanna town health office and taken to WCUNEMMCSH, Hosanna, Lichamba, and Bobicho health centers. During data collection, oral informed consent was obtained from each participant. Confidentiality and privacy measures were maintained and kept.

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Availability of data

The data were available in well secured, and reasonable request

REFERENCES

1. Health.FDRoEMo.Nationaladolescentandyouthreproductive health strategy ADDIS ABABA, ETHIOPIA, 2007-2015.
2. Adolescent Friendly Health Services: An Agenda for Change, World Health Organization, Geneva, Switzerland, 2003.
3. WHO, Adolescents: Health Risks and Solutions, 2017, <http://www.who.int/mediacentre/factsheets/fs345/en/>.
4. Family Planning, for the providers of youth-friendly services. 2014.

5. M. Wegelin-churinga, E. Miedema, A. Van Der Kwaak, K. Hooft, and H. Ormel, "Youth friendly health services in multiple perspectives," *KIT Heal.* 2014;31:45-66.
6. A. Motuma, T. Syre, G. Egata, and A. Kenay, "Utilization of youth-friendly service and associated factors among youths in Harer town, East Ethiopia: A mixed study. *BMC Health Serv Res.* 2016;16(1):49-59.
7. Pathfinder International, "Youth-friendly services: Tanzania end of program evaluation report. African Youth Alliance (AYA)," no. December, 2005, [Online]. Available: http://www.pathfind.org:80/site/DocServer/TZ_YFS_report_FINAL_FINAL.pdf?docID15102.
8. United Nations, "Report of the International Conference on Population and Development, Cairo, 5-13 September,". *Ageing International.* 1994:193.
9. F. Alauddin et al., "Programming for adolescent health and development," *World Health Organization - Technical Report Series*, no. 886. pp. 1–260, 1999.
10. Cedith Kachingwe, *Global Accelerated Action for the Health of Adolescents (AA-HA!) Guidance to Support Country Implementation Annexes 1–6 and Appendices I–IV Global Accelerated Action for the Health of Adolescents (AA-HA!) Guidance to Support Country Implementation.* 2017.
11. M. Service, D. Package, and Y. Services, "Standards on Youth Friendly Reproductive health Services service delivery guideline Minimum service delivery package on YFRH services."
12. D. B. Furry, Y. Mashalla, and G. T. Tshweneagae, "Sexual and Reproductive Health among High School Adolescents in West Shoa zone, Oromia Region in Ethiopia," *Afr. J. Reprod. Health*, vol. 23, no. 1, pp. 65–72, 2019, doi 10.29063/ajrh2019/v23i1.7.
13. B. Mulugeta, M. Girma, G. Kejela, F. G. Meskel, E. Andarge, and E. Zerihun, "Assessment of Youth-Friendly Service Quality and Associated Factors at Public Health Facilities in Southern Ethiopia : A Facility-Based Cross-Sectional Study," vol. 2019, 2019.
14. A. Simegn, T. Azale, A. Addis, M. Dile, Y. Ayalew, and B. Minuye, "Youth-friendly sexual and reproductive health service utilization among high and preparatory school students in Debre Tabor town, Northwest Ethiopia: A cross-sectional study," *PLoS One*, vol. 15, no. 9 October, pp. 1–13, 2020, doi: 10.1371/journal.pone.0240033.
15. T. Dagneu, F. Tessema, and D. Hiko, "Original Article Health and Reported Satisfaction Among Adolescents In Dejen District, Ethiopia : A Cross-Sectional Study," 2009.
16. WHO, *Global Standard for Quality Health-Care Services for Adolescents*, vol. 1 2015.
17. WHO, *Quality Assessment Guide Book: A Guide to Assessing Health Services for Adolescent Clients*, 2009.
18. BNJa et al. Health facilities readiness to provide friendly reproductive health services to young people aged 10-14 years in Wakiso district, Uganda," *Global Journal of Reproductive Medicine*, 2017.
19. F. Mayeye, H. Lewis, and O. Oguntibeju, An assessment of adolescent satisfaction with reproductive health services at primary health care service in eastern Cape province, South Africa, *West Indian medical journal*, vol.59, pp.274–279, 2010.
20. A. Mazur, C. D. Brindis, and M. J. Decker, "Assessing youth-friendly sexual and reproductive health services: A systematic review," *BMC Health Serv. Res.*, vol. 18, no. 1, pp. 1–12, 2018, doi: 10.1186/s12913-018-2982-4.
21. D. Oraby, C. Soliman, S. Elkamhawi, and R. Hassan, "Assessment of youth-friendly clinics in teaching hospitals in Egypt," *Fam. Heal. Int. Assess. Rep.*, no. May, 2008.

22. Natinael Atinafu, assessment of youth-friendly service utilization and factor among preparatory schools students in Sodo Town, Southern Nations, Nationalities, and Peoples Region, Ethiopia, thesis report, Addis Ababa University, 2017.
23. M. M. Derebe, M. B. Shiferaw, and M. A. Ayalew, "Low satisfaction of clients for the health service provision in West Amhara region, Ethiopia," PLoS One, vol. 12, no. 6, pp. 1–10, 2017, doi: 10.1371/journal.pone.0179909.