Assessment of utilization of health care services and the associated factors among adult fee-waiver beneficiaries in Hawassa, southern Ethiopia: A community based cross sectional study

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Abstract
Background: Over the past decades, developing countries like Ethiopia have resorted to the implementation of user fees in public health care systems. Nonetheless, evidences suggest that user fees affect the poor negatively. Therefore, Ethiopian government introduced fee-waiver mechanism in 1998 aiming to mitigate the financial constraints faced by the poorest segment of the population in utilizing health care services. Yet, in the country, there is limited evidence on this subject.

Objective: The overall objective of the study was to assess health care utilization and the associated factors among the fee-waiver beneficiaries in Hawassa City of Southern Ethiopia.

Methodology: A quantitative, cross-sectional study design was employed using a sample of 636 fee-waiver beneficiaries. Data was collected using a structured interviewer-administered questionnaire and analyzed using binary logistic regression. An odds ratio with the corresponding CI was used to identify the associated factors, while \( P < 0.05 \) was used to declare significance.

Results: The response rate to the survey is 581 (91.4%). Of this, 377 (65%) utilized health services in the preceding 3 months of data collection. Availability of medical equipment [AOR = 1.501; 95% C.I. (1.066–2.114)], being >50 years of age [AOR = 2.271; 95% C.I. (1.304–3.953)], improved drug availability in the health care facilities [AOR = 1.682; 95% C.I. (1.118–2.530)] and beneficiaries’ perception of health worker’s handling practice [AOR = 3.759; 95% C.I. (1.425–9.912)] were among the significant factors associated with beneficiaries’ utilization of health care services at public health facilities.

Conclusion and recommendation: The overall fee waiver beneficiaries’ health care utilizations rate is 64.9%. Optimizing availability of medical equipment, enhancing drug availability and strengthening good patient handling practices are recommended.

Keywords
Fee waiver, health care utilization, health expenditure, out of pocket

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Introduction

There is a general concurrence that poverty leads to ill health and the poor are prone to health risks. On the other hand, lower income households in general, and the poor in particular are at a higher risk of excessive costs related to health care fees forcing them to fall in poverty trap.1 In this regard, a considerable number of evidences show that charging for health care services, particularly in the form of out of pocket payment can result in an intense discrimination against the poor, especially for those households who depends on subsistence economy.2,3

Therefore, user fees for medical care items such as health professionals consultations, diagnostic investigations, hospitalization and medication, are one potential barrier to health care utilization for low income households since they are unable to afford or predisposed to catastrophic health expenditure.4,5 To reduce the financial burden on households and to increase access and utilization of healthcare services, many developing countries have abolished user fees for medical care services.6

At the same time, evidences from low- and middle-income countries shows that health care fee waiver can improve the utilization of health care services by the beneficiaries, particularly that of curative services and could also reduce the incidence of financial catastrophe due to out of pocket payment though it may have a regressive effect on service quality.3,7 A number of studies have argued on this subject matter. For instance, a study from Malawi indicates that outpatient user fees for healthcare services hinders patients utilization of healthcare and also reduce detection of common infectious diseases of concern.8 Conversely, there are scholars who argue that user fee removal doesn’t improve health care utilization, even among the poorest household groups who are fee waiver beneficiaries (FWBs).9 According to Jakovljevic,10 fee for specific health care service may induce primary care providers and could also be a source for additional fund in hiring additional staff to carryout labor intensive health care activities that may contribute for increased health care utilization. However this study doesn’t look in to the poorest segment of the population who deserve FWB.

In Ethiopia, direct out-of-pocket (OOP) spending covers a significant portion of health sector spending in the country.11 This, as argued before, exposes lower income households for low accessibility and utilization of medical care and catastrophic health expenditure.12,13 For instance, OOP expenditure financing covers 33.7% in 2010/2011, indicating OOP as a significant portion of health sector spending in the country.11

The fee-waiver system (FWS), which is the provision of health services free of charge to people who cannot afford to pay because of low income, was put in place in view of protecting the poor against financial barriers created by user fees in the utilization of health services. Moreover, it has been implemented to ensure the equity of health services to those segments of the society who were not able to pay for their health care needs that hold significant implication for the current Universal Health Coverage.14

The fee-waiver screening and identification experience has been diverse across the regions of the country.15 For instance, in Southern Nations, Nationalities and Peoples Region (SNNPR), FWBs’ screen starts at Kebele (the lowest administrative division in the country) level and ends at woreda (district) for rural and city administration level for urban residents. The woreda a local term comparable with district or city administration allocates budget, signs agreement with health care service providing facilities and issues fee waiver Identification Card(ID) cards for eligible individuals, and informs Kebeles, the lowest administrative level, about the approved list.16 In general, the FWS in Ethiopia has been one of the major intervention areas that complement other Health care financing reforms in the country to boost the demand for health care services among the poorest segments of the society who have no means of paying for the service.17,18 Although there is a growing literature on the implementation of fee-waiver system,15,16 there is scarcity of literatures whether the FWS has changed health service utilization among the FWBs and the factors associated with the changes in public health facilities of Ethiopia in general and Hawassa City of Southern Ethiopia in particular.

Therefore, the overall objective of this study is to determine the utilization status of health care services among the FWBs and the associated factors in Hawassa City of southern Ethiopia.

Methods and material

Study area

The study was conducted in Hawassa City which is situated in the Ethiopian Rift Valley about 273 km south of Addis Ababa. The city lies on the Trans-African highway from Cape Town to Cairo with a latitude of 7°3′N and longitude of 38°28′E and it has an elevation of 1708 m above sea level. According to the 2007 housing and population census, the city has projected population of 371,826 in 2008 E.C, out of this 191,352 are males and 180,474 are females. Administratively, the city is divided into 8 subcities and 32 Kebeles (the lowest administrative structure). There are a total of 11 public health facilities including general hospital and comprehensive specialized hospital in the city.20
Study design and period
A community based cross-sectional quantitative study was conducted from January 2019 to February 2019.

Source population
Individuals who were enrolled in fee-waiver program in Hawassa city in the year before 2019 were the source population.

Study population. The study population comprises FWBs who resided in the sampled sub-cities and selected on the basis of the following inclusion and exclusion criteria.

Inclusion criteria. Those FWBs who have been enrolled in the fee waiver program and over the age of 18 years were included to gain a better insight on their health service utilization at public health facilities in the households with more than one eligible person; only one person is selected using a lottery method.

Exclusion criteria. Those FWBs who were not mentally well or too sick to provide pertinent information were excluded.

Sample size determination
The sample size was determined using single population proportion formula for cross-sectional study with the following assumptions.\(^2\) Proportion of beneficiaries of free health care at a public health facility was taken as 25%\(^2\). Thus,

\[
 n = \frac{Z^2pq}{d^2}
\]

- \(n\) = sample size,
- \(Z\) = \(Z\) statistic for a level of confidence, C.L. is taken as 95% = 1.96
- \(p\) = Expected proportion [in proportion of one], \(p = 0.25\)
- \(d\) = Precision (in proportion of one) \(d = 0.05\)

\[
 n_f = \frac{(1.96*1.96)*0.25*(1-0.25)}{(0.05*0.05)} \Rightarrow \frac{0.7203}{0.0025} = 289
\]

After considering design effect of two, the sample size becomes 578. After adding 10% non-response rate (i.e. 58), the final sample size was determined to be 636.

Sampling procedure
Multi-stage random sampling technique was used for selecting the FWBs to be enrolled in the survey. Four sub-cities were selected randomly among the eight sub-cities in the city.

Haik Dar, Bahil Adarash, Addis Ketema, and Mahel Kifleketema were the sub-cities selected using random sampling technique. The final samples, 636 FWBs, were allocated proportionately to the size of the FWBs in the four sub-cities. Then after, the determined sample sizes for the sub-cities were allocated proportionately to all kebeles within the sampled sub-cities based on the actual number of FWBs in the kebeles.

Lastly, study participants from each kebele within the sampled sub-cities every 10 (kth) were selected using systematic sampling technique, based on the FWBs list in Hawassa city health department and the respective kebeles.

Data collection techniques
A structured interviewer administered questionnaire containing socio-demographic characteristics, perception of health service provision at public health facilities, accessibility, and other related issues was prepared to collect data from the study participants.

Some variables like perceived health status and health service related factors were re-categorized using the original categories in the questionnaire as described next.

Perceived health status: Respondents rated their health status in five point Likert scale, in which 5 represents “very poor,” and then 4 for “poor,” 3 for “fair,” 2 for “good” and 1 for “very good.” The questions in this regard were reverse scored so that higher score indicates a positive self-assessment of health by the respondent. After reverse scoring, 1 represents “very poor,” 2 for “poor,” 3 for “fair,” 4 for “good,” and 5 for “very good.” For the purpose of the analysis, the perceived health status has been categorized into three:

- **Good health status**: A positive perceived health status assessment category comprised of the responses with one of the two positive choices (very good or good)
- **Fair/moderate health status**: This perceived health status category, fair, refers to responses in the middle choice between poor and good perception.
- **Poor health status**: A negative perceived health status assessment category refers to the responses with one of the two negative choices (poor or very poor).

Health service related factors: The questions in this scale ask about respondents’ thoughts who visited public health facilities for getting the services. Respondents’ perception of health service delivery with regard to drug availability, medical equipment availability and laboratory service availability in public health facilities as rated on a 4-point scale (1 = never, 2 = rarely, 3 = fairly often and 4 = always) and higher score indicates a positive assessment of the health service provision by the respondent in these specific areas. Service availability was represented using a binary factor “good availability” (fairly often or always) versus “poor availability” (rarely or never).
On the other hand, respondents' perception of items regarding “patient handling practice” and “competence of health professionals” in the public health facilities were measured by Likert type 4-point scale (1= excellent, 2= good, 3= poor and 4= very poor). Questions on these items were reverse scored so that higher score indicates a positive assessment of the health service provision by the respondent. After reverse scoring, 1 represents “very poor,” 2 for “poor,” 3 for “good” and 4 for “excellent.”

**Operational definitions**

Contracted public health facilities: refers to public health centers and hospitals which have entered into contract with Hawassa city administration to serve FWBs.

Fee Waiver Beneficiaries (FWBs): are individuals who have been screened as FWB and possessed valid/renewed FWB ID card/certificate issued by Hawassa city administration.

Health service utilization: refers to the use of modern health services by FWBs at public health facilities within 3 months of the data collection.

Kebele: Smallest administrative division in Ethiopia

**Variables**

**Dependent variable.** Fee waiver beneficiaries’ health service utilization:(utilized health services/not utilized health service at least once in the last 3 months)

**Independent variables.** The independent variables include socio-demographic variables; sex, age, educational status, marital, and employment status. In addition, perceived health status, disability, length of enrollment in FW program, accessibility of health facilities (distance in Kilometers) were among the independent variables. Also, health service related factors; patient handling practice, medical equipment availability, drug availability, laboratory service availability and perceived staff competence at the contracted public health facilities were included.

**Data processing and analysis**

The collected data were coded, entered into a computer and analyzed using SPSS version 20. Descriptive statistics including frequency, percent, table and graph were used to describe the results. Binary logistic regression analysis was applied to determine socio-demographic variables, health service related, and other factors associated with utilization of health service among the FWBs. When tested against the dependent variable (health service use or not use) using bivariate analysis, independent variables with p value less than 0.25 were included as a candidate variable in the final multivariable analysis model. The Hosmer-Lemeshow statistics and deviance coefficient was used to check the goodness of fit of the model, and also multicollinearity was checked for statistically significant variables on bivariate analysis.

**Data quality management**

The data collection instrument was initially prepared in English and translated into Amharic by a experts to ensure clarity for the study participants. In the present study, the Amharic version of the instrument was administered to the study participants.

Pre-test of the study questionnaire was conducted among FWBs in Hiteta Kebele (Tabor sub-city) A Kebele different from the sampled Kebeles but with similar socio-economic and demographic characteristics. The aim of pilot test was to check clarity, validity, reliability and feasibility of the instrument. In doing so, the pre-test has helped in identifying items which were ambiguous for the study participants. Accordingly, appropriate corrections were made to the data collection instrument based on the findings of the pretest.

Two health extension workers from each Kebele in the sampled sub-city and one supervisor were deployed for the final data collection after getting 1 day training on the data collection technique. The principal investigator and the supervisor have checked the data collection activity at each Kebele and checked and ensured the completeness of questionnaires filled by the data collectors.

**Ethical considerations**

The study was conducted with ethical approvals obtained from Institutional Review Board (IRB) of Hawassa University, College of Medicine and Health Sciences, Ref. IRB/173/10, Date. 13/04/18. Written letter of support was also secured from Hawassa University, Hawassa city health department and the respective sub-cities prior to the data collection. Before the commencement of the study, each of the subjects were informed about the objective of the study and respondents’ privacy and confidentiality of responses were assured in the course of data collection and analysis. Additionally, each of the study participants were asked for willingness to participate or not on the study and informed verbal consent were received using the consent form that was approved by the IRB committee of Hawassa University, College of Medicine and Health Sciences. Informed oral consent is acceptable in Ethiopian Ministry of Science and technology as shown in National Research Ethics Review guideline, article 3.1 (3.1.2). Thus the local IRB committee of Hawassa University College of Medicine and health Sciences also provided permission for the informed verbal consent based on national guideline due to the fact that the research presents no risk of harm to subjects and involves no procedures for which written consent is normally required outside of the research perspective.
In the informed verbal consent, participants stated their consent to participate and this was fully marked on the consent form by the interviewer and documented fully. The documented consent form included information on; study title, introduction of the data collector to participant, purpose of the study, approximate time the interview take in minutes, that the response given will be held confidential and anonymity is maintained (the participant is not required to provide his/her name). At the end, the documented consent form included full name and signature of data collector (interviewer) and supervisor.

### Results

This section is composed of socio-demographic characteristics, perceived health status and accessibility of health facilities as reported by the study participants have been discussed in the first three sub-sections. Utilization of health care services, major problems encountered in utilizing health care services and factors associated with health service utilization have been presented afterward.

#### Socio-demographic characteristics

Out of the sampled 636 FWBs 581 FWBs were participated on the study making the response rate 91.4%.

#### Table 1. Socio-demographic characteristics of study participant, Hawassa, Southern Ethiopia, 2019.

| S.no | Variable                     | Frequency | %   |
|------|------------------------------|-----------|-----|
| 1.   | Sex                          |           |     |
|      | Male                         | 186       | 32.0|
|      | Female                       | 395       | 68.0|
|      | Total                        | 581       | 100 |
| 2.   | Age                          |           |     |
|      | 18–30                        | 97        | 16.7|
|      | 31–40                        | 130       | 22.4|
|      | 41–50                        | 133       | 22.9|
|      | >50                          | 221       | 38.0|
|      | Total                        | 581       | 100 |
| 3.   | Education status             |           |     |
|      | No formal education          | 259       | 44.6|
|      | Elementary school            | 262       | 45.1|
|      | High school and above        | 60        | 10.3|
|      | Total                        | 581       | 100 |
| 4.   | Marital status               |           |     |
|      | Single                       | 57        | 9.8 |
|      | Married                      | 304       | 52.3|
|      | Divorced                     | 51        | 8.8 |
|      | Widowed                      | 169       | 29.1|
|      | Total                        | 581       | 100 |
| 5.   | Employment status            |           |     |
|      | Employed                     | 187       | 32.2|
|      | Unemployed                   | 394       | 67.8|
|      | Total                        | 581       | 100 |

In the informed verbal consent, participants stated their consent to participate and this was fully marked on the consent form by the interviewer and documented fully. The documented consent form included information on; study title, introduction of the data collector to participant, purpose of the study, approximate time the interview take in minutes, that the response given will be held confidential and anonymity is maintained (the participant is not required to provide his/her name). At the end, the documented consent form included full name and signature of data collector (interviewer) and supervisor.

#### Perceived health status

Figure 1 illustrates respondents’ reported health status. More than half of the study participants 312 (53.7%) had rated their health as “good” and over a quarter of the study participants 161 (27.7%) rated their health as “fair” while the remaining 18.6% rated it as “poor” (Figure 1).

#### Accessibility of health facilities

Two hundred sixty-one participants (44.9%) resided within 5–10 km from the nearest public health facility. On the other hand, 132 (22.7%) resided within 1–5 km from public health facility. About 104 (18%) of the respondents resided 10 km away from public health facilities. The most common means of transportation used to get to public health facilities was taxi/three wheeler/407 (70.1%) (Table 2).

#### Utilization of health care services among the FWBs

Out of the 581 study participants, 377 (65%) reported visiting of public health facilities at least once over the 3 months preceding the data collection (Figure 2).
When we disaggregate this to health center and hospital, 63.4% of the visits were made at public health centers while 36.6% of visits were made at public hospitals. It can be seen that majority of the FWBs (97.6%) have got outpatient health care services. Type of health facility visited and health care services received by FWBs have been portrayed in Table 3.

**Major problems encountered by FWBs in public health facilities**

A total of study participants who visited public health facilities \((n=377)\) were requested to cite the most frequent problems encountered by FWBs at public health facilities. Out of these, 336 (89.1%) Of this, shortage of prescribed drugs 223 (66%), patient handling problem 66 (20%) and Shortage of medical equipment 47 (14%) as the most frequently encountered problems in the course of utilization of health care services at public health facilities (Figure 3).

More specifically, “shortage of prescribed drugs” \((n=223)\) in the contracted public health facilities was the most prevalent problem faced by FWBs. This was followed by “patient handling problem” \((n=66)\) at public health facilities. This encompasses the perceived mistreatment of the FWBs by staff working in different units within the public health facilities. The third severe problem perceived by FWBs in the course of utilization of health care services has been ‘lack of medical equipment ‘that can lead to inadequate diagnostic services. \((n=47)\).

**Factors associated with health service utilization**

Binary logistic regression analysis was performed (Table 4) to find out which factors were most likely to lead to the use of health care services at public health facilities. Given that the study aims to determine utilization of public health facilities by FWBs, the dependent variable was used/not used of public health facilities in the specified time period.

Variables entered in the initial model as independent variables were sex, age, education, marital status, employment status, distance of residence from nearest health facility, length of enrollment in the fee-waiver program, disability, perceived health status, health facility patient handling practice, health facility medical equipment availability, health facility drug availability, health facility laboratory service availability, and health facility staff competence (Table 4).

When tested against the dependent variable using bivariate analysis, six independent variables with p value less than 0.25 were included in the final model. These variables

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**Table 2.** Distance of nearest public health facility from residence of FWBs in Hawassa, Southern Ethiopia, 2019.

| Distance (km) | Frequency | %  |
|--------------|-----------|----|
| < 1          | 84        | 14.5|
| 1–5          | 132       | 22.7|
| 5–10         | 261       | 44.9|
| > 10         | 104       | 17.9|
| Total        | 581       | 100.0|

**Table 3.** Health service utilization by FWBs by public health care, Hawassa, Southern Ethiopia 2019.

| Distribution | Type of health facility | Visit | %  |
|--------------|-------------------------|-------|----|
| Type of health facility visited | Public health center | 239 | 63.4 |
| Public hospital | 138 | 36.6 |
| Total | 377 | 100.0 |
| Type of health care services received | Outpatient services | 368 | 97.6 |
| Inpatient services | 9 | 2.4 |
| Total | 377 | 100.0 |
Table 4. Bivariate analysis of selected socio-demographic and other variables with health service utilization of FWBs in Hawassa, Southern Ethiopia, 2019.

| Variables                          | Health service utilization |          |          | COR (95% C.I.)          |
|------------------------------------|----------------------------|----------|----------|-------------------------|
|                                    | Yes (n, %) | No (n, %) |          |                          |
| **Sex**                            |            |          |          |                          |
| Male                               | 125 (67.2) | 61 (32.8) | 1.163    | (0.804–1.681)           |
| Female                             | 252 (63.8) | 143 (36.2)| 1        |                         |
| **Age**                            |            |          |          |                          |
| 18–30                              | 54 (55.7)  | 43 (44.3) | 1        |                         |
| 31–40                              | 81 (62.3)  | 49 (37.7) | 1.316    | (0.771–2.248)           |
| 41–50                              | 81 (60.9)  | 52 (39.1) | 1.240    | (0.729–2.109)           |
| >50                                | 161 (72.9) | 60 (27.1) | 2.137    | (1.298–3.517)*          |
| **Education**                      |            |          |          |                          |
| No formal education                | 168 (64.9) | 91 (35.1) | 1        |                         |
| Elementary                         | 167 (63.7) | 95 (36.3) | 0.952    | (0.665–1.364)           |
| High school and above              | 42 (70.0)  | 18 (30.0) | 1.264    | (0.688–2.322)           |
| **Marital status**                 |            |          |          |                          |
| Single                             | 29 (50.9)  | 28 (49.1) | 1        |                         |
| Married                            | 198 (65.1) | 106 (34.9)| 1.804    | (0.947–3.019)*          |
| Divorced                           | 33 (64.7)  | 18 (35.3) | 1.770    | (0.753–3.589)           |
| Widowed                            | 117 (69.2) | 52 (30.8) | 2.172    | (1.083–3.758)*          |
| **Employment status**              |            |          |          |                          |
| Employed                           | 123 (65.8) | 64 (34.2) | 1.059    | (0.655–1.631)           |
| Unemployed                         | 254 (64.5) | 140 (35.5)| 1        |                         |
| **Distance of residence from nearest health facility** | | | | |
| Less than 1 km                     | 63 (75.0)  | 21 (25.0) | 1        |                         |
| 1–5 km                             | 77 (58.3)  | 55 (41.7) | 0.467    | (0.177–5.909)           |
| 5–10 km                            | 165 (63.2) | 96 (36.8) | 0.573    | (0.768–5.205)           |
| >10 km                             | 72 (69.2)  | 32 (30.8) | 0.750    | (0.663–4.543)           |
| **Length of enrollment in the Fee-Waiver program** | | | | |
| Before 3 years                     | 204 (67.8) | 97 (32.3) | 1.245    | (0.699–2.544)           |
| Before 2 years                     | 74 (60.7)  | 48 (39.3) | 0.912    | (0.362–1.069)           |
| Before 1 years                     | 50 (62.5)  | 30 (37.5) | 0.986    | (0.470–1.243)           |
| Less than a year                   | 49 (62.8)  | 29 (37.2) | 1        |                         |
| **Disability**                     |            |          |          |                          |
| Yes                                | 59 (62.8)  | 35 (37.2) | 0.896    | (0.567–1.416)           |
| No                                 | 318 (65.3) | 169 (34.7)| 1        |                         |
| **Perceived health status**        |            |          |          |                          |
| Poor                               | 88 (81.5)  | 20 (18.5) | 4.022    | (2.358–6.860)*          |
| Fair                               | 126 (78.8) | 35 (21.7) | 3.291    | (2.129–5.086)*          |
| Good                               | 163 (52.2) | 149 (47.8)| 1        |                         |
| **Health facility patient handling practice** | | | | |
| Very Poor                          | 12 (50.0)  | 12 (50.0)| 1        |                         |
| Poor                               | 72 (60.5)  | 47 (39.5) | 1.532    | (0.635–3.695)           |
| Good                               | 170 (68.8) | 77 (31.2)| 2.208    | (0.949–5.136)           |
| Excellent                          | 123 (64.4) | 68 (35.6)| 1.809    | (0.771–4.246)*          |
| **Health facility medical equipment availability** | | | | |
| Poor                               | 167 (60.1) | 111 (39.9)| 1        |                         |
| Good                               | 210 (69.3) | 93 (30.7) | 1.501    | (1.066–2.114)*          |
| **Health facility drug availability** | | | | |
| Poor                               | 107 (56.0) | 84 (44.0)| 1        |                         |
| Good                               | 270 (69.2) | 120 (30.8)| 1.766    | (1.235–2.526)*          |
| **Health facility laboratory service availability** | | | | |
| Poor                               | 193 (62.9) | 114 (37.1)| 1        |                         |
| Good                               | 184 (67.2) | 90 (32.8)| 1.208    | (0.858–1.701)           |
| **Health facility staff competence** | | | | |
| Very poor                          | 9 (50.0)   | 9 (50.0)  | 1        |                         |
| Poor                               | 36 (66.7)  | 18 (33.3) | 2.000    | (0.677–5.909)           |
| Good                               | 188 (66.7) | 94 (33.3) | 2.000    | (0.768–5.205)           |
| Excellent                          | 144 (63.4) | 83 (36.6) | 1.735    | (0.663–4.543)           |

C.I: confidence interval I = reference; C.O.R: crude odds ratio.
*p < 0.20.
Table 5. Multivariate analysis: factors associated with health services utilization among FWBs in Hawassa, Ethiopia, 2019.

| Variables                                      | Health service utilization |            |            | AOR (95% C.I.) |
|------------------------------------------------|---------------------------|------------|------------|---------------|
|                                                 | Yes (n, %)                | No (n, %)  |            |               |
| **Age (Years)**                                 |                           |            |            |               |
| 18–30                                          | 54 (55.7)                 | 43 (44.3)  | 1          |
| 31–40                                          | 81 (62.3)                 | 49 (37.7)  | 1.791 (0.989–3.242) |
| 1–50                                           | 81 (60.9)                 | 52 (39.1)  | 1.392 (0.780–2.484) |
| >50                                            | 161 (72.9)                | 60 (27.1)  | 2.271 (1.304–3.953)* |
| **Marital status**                              |                           |            |            |               |
| Single                                         | 29 (50.9)                 | 28 (49.1)  | 1          |
| Married                                        | 198 (65.1)                | 106 (34.9) | 1.713 (0.921–3.186) |
| Divorced                                       | 33 (64.7)                 | 18 (35.3)  | 1.924 (0.827–4.476) |
| Widowed                                        | 117 (69.2)                | 52 (30.8)  | 1.517 (0.773–2.976) |
| **Perceived health status**                    |                           |            |            |               |
| Poor                                           | 88 (81.5)                 | 20 (18.5)  | 3.765 (2.117–6.696)* |
| Fair/Moderate                                  | 126 (78.8)                | 35 (21.7)  | 3.163 (2.001–5.000)* |
| Good                                           | 163 (52.2)                | 149 (47.8) | 1          |
| **Health facility patient handling practice**  |                           |            |            |               |
| Very poor                                      | 12 (50.0)                 | 12 (50.0)  | 1          |
| Poor                                           | 72 (60.5)                 | 47 (39.5)  | 2.169 (0.825–5.699) |
| Good                                           | 170 (68.8)                | 77 (31.2)  | 3.438 (1.343–8.799)* |
| Excellent                                      | 123 (64.4)                | 68 (35.6)  | 3.759 (1.425–9.912)* |
| **Health facility medical equipment availability** |                          |            |            |               |
| Poor                                           | 167 (60.1)                | 111 (39.9) | 1          |
| Good                                           | 210 (69.3)                | 93 (30.7)  | 1.287 (0.850–1.949) |
| **Health facility drug availability**           |                           |            |            |               |
| Poor                                           | 107 (56.0)                | 84 (44.0)  | 1          |
| Good                                           | 270 (69.2)                | 120 (30.8) | 1.682 (1.118–2.530)* |

A.O.R: adjusted odds ratio; C.I: confidence interval 1 = Reference.
*Statistically significant at p-value < 0.05

were age, marital status, perceived health status, health workers patient handling practice, availability of medical equipment, and drug in the health facilities (Table 4).

The omnibus tests of model coefficients revealed that the model containing the six predictors was statistically significant ($\chi^2 = 81.94, p < 0.01$) showing that the predictor variables entered into the logistic regression model have significantly increased our ability to predict the decisions made by the study subjects to use or not use health care services at public health facilities. That means the model was able to differentiate between FWBs who seek health services and those who do not seek health services at public health facilities.

Results of multivariate analysis showing factors associated with health services utilization among FWBs has been presented in Table 5.

The multivariate analysis in Table 5 indicates that age, perceived health status, health facility’s patient handling practice and drug availability were significantly associated with utilization of health care services by FWBs in Hawassa as perceived by the respondents (Table 5).

The likelihood of utilization was 2.3 times more likely for FWBs over the age of 50 years (AOR = 2.271; 95% C.I. 1.304–3.953) compared to those FWBs between the age of 18 and 30 years. The result revealed that FWBs with “poor” and “fair/moderate” health condition were 3.8 times (AOR = 3.765; 95% C.I. 2.117–6.696) and 3.2 times (AOR = 3.163; 95% C.I. 2.001–5.000) more likely to utilize health services, respectively, compared to those with “good” health condition. Study participants who rated the availability of drug at public health facilities as “good” were 1.7 times more likely to seek health services than those who rated it “poor” (AOR = 1.682; 95% C.I. 1.118–2.530) (Table 5). Participants who rated the patient handling practice in public health facilities as “excellent” were 3.8 times more likely to use health services than those who rated the patient handling practice as “very poor” (AOR = 3.759; 95% C.I. 1.425–9.912) Similarly, study participants who rated the patient handling practice in public health facilities as “good” were 3.4 times more likely to use health services than those who rated the health service provision as “very poor” (AOR = 3.438; 95% C.I. 1.343–8.799) (Table 5).
Discussion

This study assessed utilization of health care services and associated factors among the FWBs in Hawassa City of Southern Ethiopia.

The current study revealed that 65% of FWBs have utilized health services at public health facilities within 3 months preceding the data collection. Compared to previous studies, the utilization level reported in the current study is higher than the utilization rate reported in Gamo Goffa zone (59.6%) and Jimma Zone (45.6%). This variation may be due to the fact that the current study focused mainly on residents in one of the highly urbanized cities in the country which has better access to modern health services than the rural parts of the country. Moreover, the other studies included communities residing in the rural and less urbanized setting. On the other hand, the presence of high level public health facilities which can offer variety of advanced services in urban areas such as Hawassa may also be one of the factors for higher level of health service utilization in the current study setting than in its rural counterparts.

Conversely, the finding of this study was lower than the study conducted in southern Nigeria which showed 76.8%. A possible explanation for this difference could be difference in socio-demographic characteristics of study participants in the current study and those in the Nigerian study. There was also significant time gap between the current study and some of the previous study.

This study has shown that the likelihood of utilization of health services was higher for FWBs in the old age group compared to those in the young age group. This finding is consistent with a study done in China and Brazil which reported higher level of health service utilization among the elderly. Similarly, a study finding in Burkina Faso indicated that indigents in the old age group were more likely to have higher level of healthcare services utilization.

The current study indicated that availability of prescribed drugs at public health facilities was one of the significant determinants of health service utilization by FWBs. Likewise, a study in Nigeria has found community perception of inadequacy of available services, including drug, determined largely the utilization of the primary health care services. Similarly, a study conducted in southern Ethiopia has shown drug shortage as significant factor associated with not utilizing health services among fee-waiver certified households.

In this study, patient handling practice by health facility staff was found to have significant association with FWBs health service utilization as perceived by the FWBs. This finding was supported by a study conducted in Nigeria which reported approach of staff toward the patients as one of the factors that is significantly associated with health service use.

The current study has shown that respondents with poor perceived health condition were more likely to utilize health service at public health facilities. This study finding is similar with a study in Riyadh, Saudi Arabia, which found poor self-health-perception as one of the main factors determining health service utilization. Of note is, the financial burden that this could bear on public health facilities in the long run. Therefore, it is reasonable to think of alternative health care financing mechanisms like community based health insurance in the study area.

Strengths and limitations

This study provided one of the rare insights into FWB health care utilization and, hopefully, improves this particular issue. This study may also offer the foundation on which other researches can be carried out to maximize the motto of UHC.

The study was not without limitation however. One limitation is, the proportion of females in the sample is higher. This is due to the fact that females are vulnerable to poverty due to sociocultural problems in Ethiopian context, that they share higher proportion of fee waiver beneficiaries as reflected in our sample. Therefore, a more representative sample may have different correlates. The other limitation of this study is that it used self-reported information which may be subjected to reporting errors and bias. However, this doesn’t invalidate the findings.

Conclusion and recommendation

Conclusion

Relatively higher proportion of FWBs have utilized public health facilities over the 3 months preceding the data collection. Beneficiaries and health care facilities related factors associated with FWB’s health care utilization were observed.
**Recommendation**

Based the findings, it is recommended that; Hawassa city health department needs to ensure public health facilities to have required medical equipment and drugs to improve the utilization of health care services by FWBs. At the same time, health department and public health facilities in the city need to enhance patient handling practice at their respective facilities to promote effective utilization of health care services by FWBs. Finally, further studies should also be conducted periodically to properly identify and address newly emerging challenges encountered during the implementation of the FWS in the region.

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