



Research article

Level of compassionate health care service provision and its associated factors among health professionals working in public hospitals of Addis Ababa: health professionals' perspective

Mulugeta Abate ^a, Nigussie Tadesse ^b, Kindie Mitiku ^{c,*}^a Office of Institutional Review Board, Ethiopian Public Health Association, Ethiopia^b Department of Public Health, College of Health Science, Institute of Medicine and Health Science, Debre Berhan University, Ethiopia^c Department of Public Health, College of Health Sciences, Mizan-Tepi University, Ethiopia

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ABSTRACT

Background: Compassionate health care service is important for good clinical outcomes and patient satisfaction. However, complaints of non-compassionate care became very familiar and popular grievance of the community in the health care system. The aim of this study was to assess the level of compassionate health care service provision and its associated factors among health professionals working in public hospitals of Addis Ababa, Ethiopia.

Methods: A facility based cross sectional study was conducted among six public hospitals of Addis Ababa, Ethiopia. Simple random sampling and systematic sampling methods were applied to select hospitals and each study participants respectively. Data were collected from 400 participants using a self-administered structured questionnaire. The mean of compassionate health care was taken as the cut point to label respondent as good and poor compassionate health care service provider. Bivariate and multivariable logistic regressions were done to determine the associated factors for compassionate care provision. Variables with p values < 0.05 at the multi-variable analysis were considered as significantly associated with compassionate care provision.

Results: Only 48.0% of health care professionals provided good compassionate care. Learned to be compassionate (AOR = 5.083; CI 95% 2.69, 9.58); patient and their family realistic expectation (AOR = 2.24; CI 95% 1.07, 4.66) were found to be significantly associated with good compassionate health care provision.

Conclusions: and recommendations: Good compassionate health care service provision in Addis Ababa hospitals was very low. Teaching health science and medical students to be compassionate and ensuring health care clients to have realistic expectation may be important to farther enhance compassionate health care service provision.

1. Introduction

Compassion is defined as the recognition, understanding, and alleviation of suffering and it is demonstrated in practice through actual and foundational indicators [1]. Compassionate care has several benefits which included: aid faster recovery from acute illness; enhance chronic diseases management and alleviate anxiety and tension [2]. It promotes warmth, sympathy, empathy, love and belongingness between individuals, service providers and customers [3]. Compassionate care has also irreplaceable contribution for quality of care, patient satisfaction and good clinical outcomes [4]. Health care professionals who provide health care services with compassion increase their job satisfaction and strengthen their relationship with clients [5].

In well developed countries, the contributions of companionate care is well understood by physicians and patients. For instance, in America, 85% of patients and 78% physicians believed that compassionate health care contributes to good clinical outcomes [6]. The available evidence also showed that patients anticipated companionate care from clinicians [7, 8]. In America, 87% of patients preferred kind treatment from health care professionals and 90% of American patients switched to kinder health care professionals [2]. Despite this high expectation, only 53% patients and 58% physicians in America believed that the health care system provided compassionate health care service [9].

Globally, evidence on companionate care provision and contributing factors is limited. Most recent scoping review of the health care literature confirmed that there is limited empirical understanding of compassion in the health care system [7]. The available few studies showed wide

* Corresponding author.

E-mail address: mitikukindie@gmail.com (K. Mitiku).

variation of the level of companionate care provision across different country and regions within a country [2, 10, 11]. In Canada, companionate care is considered as a corner stone of quality care improvements [10]. In United Kingdom (UK), the role of companionate care was found to be more advanced in both clinical and community settings [11, 12]. In United States of America (USA), 64%, and 36% of health care workers showed unkind and rude behaviors, respectively [2]. On the contrary, companionate care is poorly practiced in Low Income Countries (LICs) [13, 14, 15].

In Ethiopia, health care service delivery is suffering from poor compassionate care provision due to shortage of human resource accompanied with limited resource and poor governance [16]. More recently, the massive expansion of medical education in the country is affecting the quality of care in general and compassionate health care service provision in particular [17]. To address this critical gap, the ministry of health has incorporated compassionate, respectful and caring (CRC) in its Health Sector Transformation Plan (HSTP) [18].

Like other LICs, there are only few studies that directly or indirectly assessed companionate care provision in Ethiopia [13, 14, 19]. A study conducted in Northern Showa among health care providers showed that only 38.8% of them provided companionate care [14]. Another study inform Bahir Dar, Ethiopia showed that 67.1% of women who came for pregnancy care and labour service experienced disrespectful care [20]. A 3 years ethics committee report in Addis Ababa confirmed the existence of unethical, non-dignified and poor compassionate care in all levels of health care including private and public health facilities [19].

Provision of compassionate health care service is affected by different factors including professional, cultural, leadership, personal, relational, systemic, stress and learning about companionate care during education (pre-service training) [5, 7, 21, 22, 23, 24, 25]. Sub-optimal training environment and fewer mentoring were identified as educational related barriers [7]. Lack of time, incentives, supportive staffing and resources were also identified as practice setting related barriers [7, 14]. Knowledge gaps and poor attitudes of health workers were individual level factors affecting companionate care in LICs [14, 15]. Some socio-demographic variables such as sex, age and income were also found to be significant predictors of good companionate care provision. For instance, female health workers provided more companionate care than male. Health workers with high income provided good companionate care as compared to low income health workers [14].

Despite CRC has given priority attention in the HSTP, the level of companionate care provision and associated factors is not well explored in Ethiopia [15]. The available studies in Ethiopia assessed companionate care from patients' perspective [13, 15]. Studies on companionate care from provider perspective is rare in Ethiopia. Therefore, this study was conducted to assess the level of compassionate health care service provision and its associated factors among health professionals working in public hospitals of Addis Ababa from the provider perspective. The findings of the study may fill the knowledge gap on companionate care provision and associated factors from provider perspective in Ethiopia and other LICs that have similar socio-economic and health service characteristics. Exploring the level of compassionate health care service provision and associated factors among health care professionals also may offer a better understanding on the essence, practice and the hindering factors of compassionate health care service delivery. Moreover, the finding of this study may help policy makers, health service managers and other stakeholders to design effective and timely intervention that take into account the health care professional perspective on compassionate care provision.

2. Methods

We used The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guideline to report this study [26]. The page numbers where each checklist of items found in the paper is presented as additional file [Additional file 1].

2.1. Study design and setting

This study was conducted in Addis Ababa. The projected population size of Addis Ababa in 2020 was 3.38 million. There were 12 public hospitals and 9400 health workers in Addis Ababa in 2019. These hospitals serve a significant proportion of the population of Addis Ababa and the country at large [27]. A facility based cross-sectional study was conducted in the public hospitals of Addis Ababa from March 20 to May 20/2020.

2.2. Study sample

All health care professionals who were working in public hospitals of Addis Ababa were considered as the source population. Health care professionals working in the selected public hospitals in Addis Ababa during the study period were the study population.

Health care workers who had direct contact with patients such as physicians, nurses, medical laboratory professionals, health officers, radiographers, midwives, anesthetists, pharmacists and physiotherapists were included in the current study. Health workers who had at least six months experience in the selected hospitals irrespective of their qualification were included. However, health care workers who didn't have direct contact with patients such as students, managers and supporting staffs were not included.

The sample size for this study was determined based on a single population proportion formula by considering 95% C.I, $P = 0.58$ (proportion of compassionate care provision taken from another study) [9], and 5% margin of error. Finally, by adding 10% non-response rate, the final sample size was 400 health professionals.

2.3. Sampling procedure

Simple random sampling method (Lottery method) was applied to select six hospitals for the study. After six hospitals were identified using lottery method, the numbers of currently available health professionals in each hospital was determined. Then, the minimum required sample size was allocated to each hospital proportionally. Finally, a systematic sampling method was applied to select the study participants in each hospital. The sampling fraction was calculated by dividing the currently available health workers to the proportionally allocated sample size for each hospital [Figure 1].

2.4. Data collection tool and procedures

The data collection tool was a structured self-administered questionnaire developed from the available literatures [6, 10, 13, 15]. It contains information on the socio-demographic characteristics, compassionate health care service practice and factors that affect provision of compassionate care. The tool used to assess companionate care provision comprises of 12 statements ranked as a 5 point Likert scale which were designed based on Schwartz Center Compassionate Care Scale (SCCCS) tool. The SCCCS tool was validated by expert reviews, who were national CRC trainers [28, 29]. The tool has excellent internal consistency (Cronbach's alpha coefficient of 0.98) and test-retest reliability (0.90). The item-to-total correlations were excellent, ranging from 0.83 to 0.93. The convergent validity (construct) was confirmed by a moderate and positive correlation of 0.77 ($p < 0.0001$) between the SCCCS and the Consultation and Relational Empathy Scale (CARE). Two trained data collectors who have bachelor degree in public health collected the whole data. The three authors supervised all the data collection processes. All study participants were approached at the health facilities where they were working. The two data collectors approached all study participants and provided the self-administered questionnaire. All participants were requested to fill the questionnaires at the health facilities. No participants were allowed to take the questionnaire to his/her home to minimize nonresponses rate. Participants were allowed to ask any concerns or

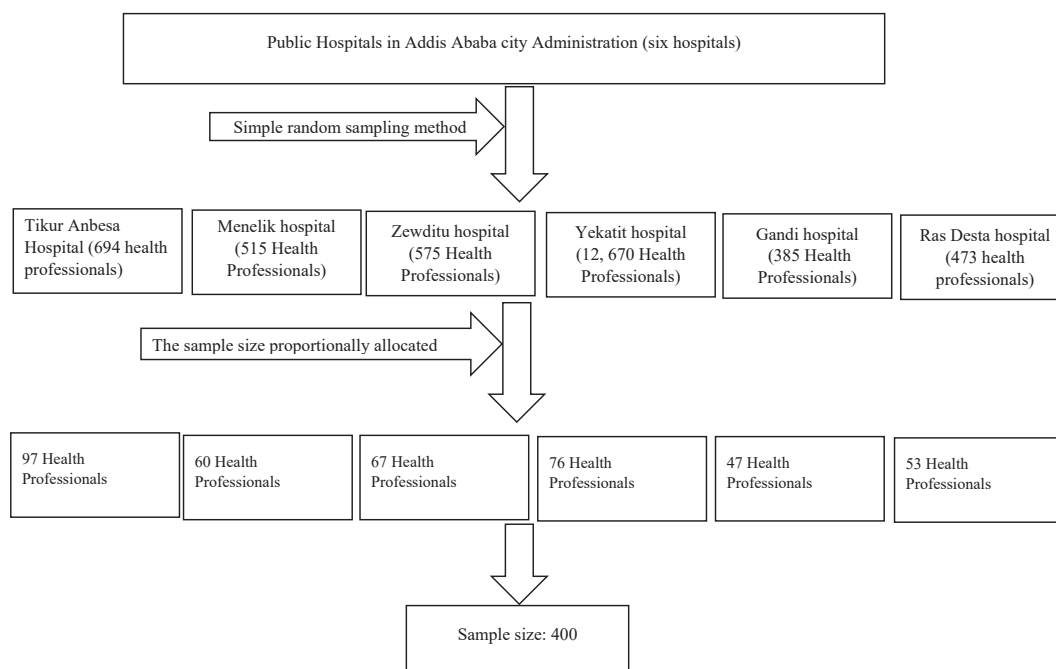


Figure 1. Sampling procedures applied to select sample unit of the study for public hospitals in Addis Ababa.

questions while filing the questioners. Another schedule/time was arranged for participants who were absent or busy at the time of data collection. Information sheet and consent forms were used before collecting the data.

2.5. Measurement of variables

The dependent variable is compassionate health care provision which was measured using SCCCS tool [29]. Participants were asked 12 questions to report on their experience regarding to companionate health care practice on a likert scale ranging from strongly disagree to strongly agree. Each participants score was computed using Statistical Package for Social Sciences (SPSS). Then the mean was computed and it was 49.0. By taking this number as a cut point, the status of companionate health care provision was determined. A score greater than or equal to the mean was considered good companionate care provider, and less than the mean was considered poor companionate care provider.

The independent variables included sex, age, income, profession, years of experience, experience during education, self-compassion, leadership, time resources, staff number workload, patient compliance, patient behavior, patient and family expectation from the health care service. All the independent variables were categorized based on previously published literatures to ease comparison [6, 13, 20].

2.6. Data quality control

Training was given to data collectors about the research objective, data collection tool and its procedure. To assess the validity and reliability of the tool/questionnaire, pretest was done in St. Peter Hospital among 5% of the questionnaire. Two data collectors gathered the pretest. Then, the inter-rater reliability of the two data collectors was calculated. The agreement between the two raters was 0.92. Furthermore, to ensure the validity of the tool, an expert from health service management, particularly, quality of care was invited to check the questionnaire for double, confusing and leading questions. Based on the pretest results and expert comments, further adjustments were made. The investigators also checked the completeness of each questionnaire and supervised the whole data collection process in a daily bases.

2.7. Data processing and analysis

Data was entered into EPI INFO version and exported into SPSS version 22 for analysis. The analyses included both descriptive and inferential statistics. Descriptive statistics such as frequencies, means and percentages were calculated as univariate analysis. Bivariate analysis was done to assess the association between each independent variable and compassionate care provision. Multivariable logistic regression model was fitted to control potential confounders. Variables with p-value of ≤ 0.25 in the bivariate analysis were included in the multivariable analysis. Variables with p values < 0.05 at the multivariable analysis were considered as significantly associated with compassionate care provision.

2.8. Ethical considerations

Ethical clearance was obtained from Collage of Health Science Debreberhan University research ethics committee in a letter Ref DBUMF05-009. Permission letter was obtained from the selected hospitals. Informed and written consent was obtained from each study participant. The research ethics approval letter is included as additional file [Additional file 2].

3. Results

3.1. Socio-demographic characteristics of study participants

A total of 400 health professionals from 6 hospitals were participated yielding a response rate of 100%. From the total respondents, 223 (55.8%) were female. The mean age and monthly income of the participants were 31.69 (SD \pm 6.444) and 8708 ETB (SD \pm 2,500) respectively [Table 1].

3.2. Professionals related characteristics

Majority of the study participants had less than five year experience. Almost half of (51.8%) the study participants reported that they had learned to be compassionate [Table 2].

Table 1. Socio-demographic characteristics of study participants in the selected Hospitals of Addis Ababa, 2020.

Variable	Frequency	Percent (%)
Sex		
Male	177	44.3
Female	223	55.8
Age (Years)		
<30	208	52
30-40	154	38.5
40-50	31	7.75
>50	7	1.75
Monthly Income (ETB)		
<5000	22	5.5
5000-10000	287	71.8
10000-15000	89	22.3
>15000	2	0.5
Marital status		
Married	218	54.5
Divorced	12	3.0
Widowed	6	1.5
Never Married	164	41.0

ETB; Ethiopian Birr.

Table 2. Professional related characteristics of study participants in the selected Hospitals of Addis Ababa, 2020.

Variable	Frequency	Percent (%)
Profession		
Physician/Medical Doctor	80	20.0
Nurse	160	40.0
Medical Laboratory	17	4.3
Health Officer	27	6.7
Radiographer	18	4.5
Midwives	36	9.0
Anesthetist	22	5.5
Pharmacist	34	8.5
Physiotherapist	6	1.5
Experience (Years)		
<5	173	43.2
5-10	141	35.3
10-15	51	12.8
>15	35	8.8
Learned to be compassionate		
Agree	207	51.8
Disagree	193	48.3
Feel proud for one's good act		
Agree	112	28
Disagree	288	72

3.3. Health system related characteristics

Nearly two third of the participants agreed that leadership promotes companionate care. Almost one fourth of the participants disagreed that resources are adequate. Similarly, nearly a quarter of participants disagreed that work load is tolerable [Table 3].

3.4. Patient related characteristics of study participants

Health workers were asked to describe their patients. In this regard, almost two third of them agreed that patients are compliance for medical advice. However, a third of interviewed health workers disagreed that

Table 3. Health system related characteristics of study participants in selected Hospitals of Addis Ababa, 2020.

Variable	Frequency	Percent (%)
The leadership promotes compassionate care		
Agree	243	60.7
Disagree	157	39.3
Resources is adequate		
Agree	294	73.5
Disagree	106	26.5
Time is adequate to meet patients		
Agree	252	63
Disagree	148	37
Staff is adequate		
Agree	278	69.5
Disagree	122	30.5
The workload is tolerable		
Agree	304	76
Disagree	96	24

patients' behavior is good. Seventy percent of the health workers agreed that patients' and families' expectation is realistic [Table 4].

3.5. Compassionate health care service practice

We used the SCCS measures to assess the level of compassionate health care service provision. The mean score of the participants was 49.0 (SD ± 9.25). Participants' score on each SCCS item is presented in Table 5 [Table 5]. Overall, 48% of health care professionals in the public hospital of Addis Ababa were good compassionate health care service providers [Figure 2].

3.6. Factors affecting compassionate health care service provision

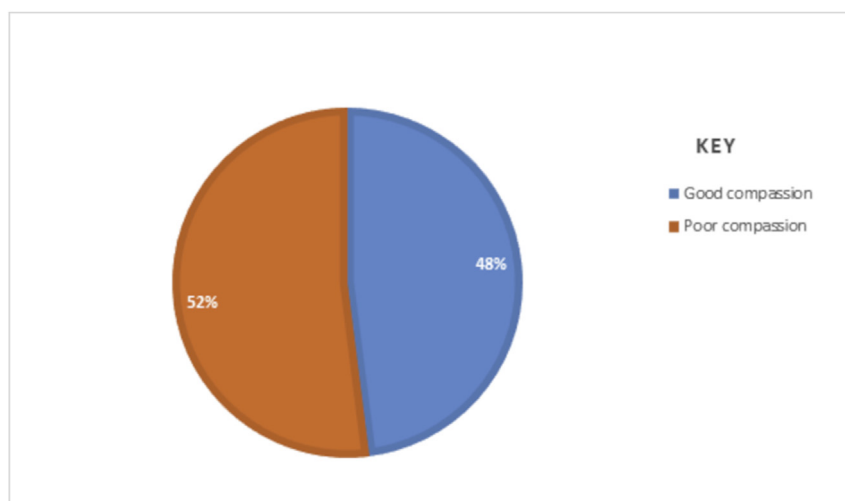
The results of this study revealed that learning to be compassionate, feel proud of one's good act, facility leadership approach, medical supplies, adequate time to interact with clients, staff shortage, workload, patient compliance to medical advice, patient behavior and patient and family expectation were significantly associated with compassionate health care provision at the bivariate level of analysis. The factors with p-value of less than 0.25 at the bivariate analysis were added to the multivariable logistic regression model. The multivariable analysis showed that, learned to be compassionate and realistic expectation of the patient and their families were significantly associated with good compassionate care provision [Table 6]. The odds of good compassionate care provision among health professionals who learned how to be compassionate in the pre-service training were 4.60 higher than those who didn't learn [AOR = 4.60; (CI 95% 2.68, 7.89)]. The odds of compassionate health care provision among respondents who agreed that

Table 4. Patient related characteristics of study participants in the selected Hospitals of Addis Ababa, 2020.

Variable	Frequency	Percent (%)
Patients are compliance for medical advice		
Agree	267	66.7
Disagree	133	33.3
Patients behavior is good		
Agree	286	71.5
Disagree	114	28.5
Expectation of patients and their family is realistic		
Agree	280	70
Disagree	120	30

Table 5. Participant's score on each SCCS item in the selected Hospitals of Addis Ababa, 2020.

Item	Never	Rarely	Sometimes	Often	Always
Show respect	10 (2.5)	10 (2.5)	14 (3.5)	161 (40.3)	205 (51.3)
Convey information	8 (2.0)	12 (3.0)	39 (9.8)	201 (50.3)	140 (35.0)
Communicate test	16 (4.0)	11 (2.8)	77 (19.3)	174 (43.5)	122 (30.5)
Treat patient as a human	15 (3.8)	22 (5.5)	72 (18.0)	151 (37.8)	140 (35.0)
listen attentively	12 (3.0)	15 (3.8)	78 (19.5)	146 (36.5)	149 (37.3)
Involve patients in decisions	13 (3.3)	30 (7.5)	120 (30.0)	135 (33.8)	102 (25.5)
Gain my patients trust.	7 (1.8)	26 (6.5)	87 (21.8)	135 (33.8)	145 (36.3)
Consider the effect of the illness	12 (3.0)	17 (4.3)	97 (24.3)	161 (40.3)	113 (28.3)
Comfortably discuss sensitive issues.	9 (2.3)	39 (9.8)	132 (33.0)	141 (35.3)	79 (19.8)
Express sensitivity	10 (2.5)	25 (6.3)	127 (31.8)	137 (34.3)	101 (25.3)
Spend time with patients	20 (5.0)	77 (19.3)	115 (28.8)	112 (28.0)	76 (19.0)
Strive to understand	7 (1.8)	35 (8.8)	145 (36.3)	145 (36.3)	68 (17.0)

**Figure 2.** Level of compassionate care provision in the public hospitals of Addis Ababa, 2020.

expectation of patients and their families was realistic was 2.19 times higher than who didn't agree [AOR = 2.19; (CI 95% 1.06,4.55)].

4. Discussions

This study aimed to assess the level of compassionate health care service provision and associated factors that hinder health professionals to practice compassionate care in public hospitals of Addis Ababa. The findings would be very useful for policy makers and programmers who targeted on improvements of the quality of health care in Ethiopia and other countries that have similar socio-economic and health facility setups.

The current study revealed that the level of good compassionate care provision was low in Addis Ababa. This result is higher than a study finding in North Showa zone, Ethiopia, where compassionate care provision accounted 38.8 % [14]. The variation may be explained by the settings and tools differences used in the studies. For instance, the study in North Showa zone used 24 question items. Moreover, the study setting in this zone were both hospitals and health centers. Whereas, in the current study, only health workers from hospitals were included. As compared to our study finding, a slightly higher proportion of physician (58%) in USA believed that the USA health care system provides compassionate health care service [9]. A slightly higher proportion of compassionate care provision in USA might be due to differences in the study population, development, and physician's attitude towards their clients.

In this study, age, sex, profession and income were not significantly associated with compassionate health care provision. On the other hand, a research conducted in USA and Northern Showa found that females were more compassionate than male [14, 30]. A study finding in UK found that general practitioners and internists were prone to compassionate fatigue [31] and therefore they were less likely to provide compassionate care. Lack of significant association between age, sex, profession and income with compassionate care may indicate that other contextual factors influenced compassionate care in Addis Ababa.

After controlling potential confounders, learned to be compassionate and patient and families realistic expectation were significantly associated with compassionate care provision in Addis Ababa. In line with our finding, sub-optimal training environment and fewer mentorship were found to be educational barriers for compassionate care provision [7]. Knowledge gap of health professionals was identified as barriers to CRC provision in Northwest Ethiopia [15]. A qualitative study in Ethiopia also revealed that midwives education didn't include CRC and most of midwives didn't receive CRC as part of in-service trainings [32]. A significant association between learned to be compassionate and compassionate care provision may indicate for policy makers and programs to include compassionate care in the pre-service trainings in addition to the in-service training program. Integration of compensation with curricula is recommended in some studies [1, 14]. A commitment to teach compassion and learning compassion through a system that encourage compassionate health care professionals is an important factor to ensure compassionate health care service provision [7, 21, 22, 25].

Table 6. Bi-variable and Multivariable logistic regression analysis of factors affecting compassionate health care service provision.

Variable	Compassionate care practice		COR (95%CI)	AOR (95%CI)
	Good (%)	Poor (%)		
Age (years)				
<30	109 (56.8)	99 (47.6)	1.12 (0.56–2.25)	1.09 (0.22–5.56)
30–40	62 (32.3)	92 (44.2)	1.83 (0.89–3.75)	1.37 (0.30–6.27)
>40	21 (10.9)	17 (8.2)	1	1
Income (ETB)				
<5000	16 (8.3)	6 (2.9)	0.21 (0.07–0.59)	0.87 (0.23–3.36)
5000–10000	143 (74.5)	144 (69.2)	0.57 (0.35–0.93)	0.82 (0.41–1.66)
>10000	33 (17.2)	58 (27.9)	1	1
Experience (Years)				
<5	95 (49.5)	78 (37.5)	1.23 (0.59–2.58)	1.06 (0.21–5.26)
5–10	60 (31.3)	81 (38.9)	2.03 (0.95–4.31)	1.91 (0.41–8.81)
10–15	16 (8.3)	35 (16.8)	3.28 (1.34–8.06)	1.84 (0.38–9.01)
>15	21 (10.9)	14 (6.7)	1	1
Learned how to be compassionate				
Agree	148 (71.5)	59 (28.5)	8.49 (5.41–13.35)	4.60 (2.68–7.89)*
Disagree	44 (22.8)	149 (77.2)	1	1
Feel proud for one's good act				
Agree	76 (67.9)	36 (32.1)	2.49 (1.58–3.95)	1.19 (0.66–2.13)
Disagree	132 (45.8)	156 (54.2)	1	1
The leadership promotes compassion				
Agree	156 (64.2)	87 (35.8)	3.88 (2.45–6.13)	1.85 (0.99–3.46)
Disagree	52 (33.1)	105 (66.9)	1	1
Resources is adequate				
Agree	180 (61.2)	114 (38.8)	3.86 (2.35–6.32)	1.01 (0.47–2.12)
Disagree	28 (26.4)	78 (73.6)	1	1
Enough time to get close to patients				
Agree	167 (66.3)	85 (33.7)	5.24 (3.24–8.46)	1.25 (0.61–2.55)
Disagree	41 (27.7)	107 (72.3)	1	1
The number of staffs are quite enough to provide compassionate care				
Agree	173 (62.2)	105 (37.8)	4.07 (2.56–6.46)	1.41 (0.72–2.80)
Disagree	35 (28.7)	87 (71.3)	1	1
The workload is fair enough				
Agree	183 (60.2)	121 (39.8)	4.29 (2.58–7.16)	1.13 (0.51–2.52)
Disagree	25 (26)	71 (74)	1	1
The patient have good compliance				
Agree	173 (64.8)	94 (35.2)	5.15 (3.25–8.17)	1.50 (0.77–2.95)
Disagree	35 (26.3)	98 (73.7)	1	1
The patients and their family behavior is acceptable				
Agree	172 (60.1)	114 (39.9)	3.27 (2.06–5.18)	1.39 (0.67–2.83)
Disagree	36 (31.6)	78 (68.4)	1	1
Patient and families expectation is realistic				
Agree	179 (63.9)	101 (36.1)	5.56 (3.43–9.02)	2.19 (1.06–4.55)*
Disagree	29 (24.2)	91 (75.8)	1	1

1 reference category * significance at p-value <0.05.

Another factor significantly associated with compassionate health care provision was patients' and families realistic expectation for compassionate health care provision. In this study, the odds of compassionate health care provision among respondents who agreed that expectation of patients and their families was realistic for compassionate health care provision was 2.24 higher than those who didn't agree. Other studies also supported our finding. These studies showed that patient who are not compliant and behave in a manner that is acceptable to the health professionals received less compassionate care [7, 21, 22, 25].

4.1. Policy and practice implication

Due to growing in awareness on health care services, patients are expecting and demanding companionate care from the health care providers [7]. However, a significant proportion of health care providers themselves believed that they don't provide companionate care for their patients. As a result, patients are not receiving companionate care. Different barriers may hinder health care providers to provide companionate care [7, 21]. But, the existence of these barriers should not be a guarantee for health workers to deny companionate care provision. Health workers should aware that provision of companionate care is a moral and professional obligation and patients shall deserve companionate care. In the current study, a high tendency of health care workers to provide companionate care for patients who had realistic expectation may indirectly indicate a violation of the moral and professional obligation to provide companionate care. Identification of patients' expectation and respond positively is the fundamental principle of companionate care. Health workers should strive to achieve this fundamental principle rather than inclining to provide companionate care for those patients who have realistic expectation. A significant association between learned to be companionate and companionate care provision may also indicate the contribution of in-service and pre-service companionate care trainings on companionate care provision. Significant efforts has been made to provide in-service CRC training for health care workers [33]. However, in-service trainings are costly and may not address large segments of health workforces. In-service trainings shall be supplemented with pre-service trainings. Policy makers and course developers should take the initiatives to integrate companionate care into the existing curricula to further enhance companionate care provision.

4.2. Limitations of the study and areas for future research

Given the limited studies on companionate care and associated factors in LICs including Ethiopia, the findings of the current study may have paramount contribution into the body of literatures. Moreover, the findings may be helpful for policy makers and programmers who are working on quality health care improvements. However, this study has some limitations. The study didn't not assess patient perception on companionate care provision. Moreover, the study didn't explore psychosocial and cultural determinants of companionate health care provision. Therefore, future studies on companionate care provision should address the above limitations using qualitative study methods.

5. Conclusion

Compassionate health care service provision in public hospitals of Addis Ababa was very low. The level of compassionate health care provision was significantly associated with learned how to be compassion during education and realistic expectation of patients and families. Teaching health science and medical students to be compassionate health care provider and ensuring health care clients to have realistic expectation is important to further enhance compassionate health care service provision.

Declarations

Author contribution statement

Mulugeta Abate: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Nigussie Tadesse: Conceived and designed the experiments; Performed the experiments; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Kindie Mitiku: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Wrote the paper.

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Data availability statement

Data will be made available on request.

Declaration of interests statement

The authors declare no conflict of interest.

Additional information

Supplementary content related to this article has been published online at <https://doi.org/10.1016/j.heliyon.2022.e09160>.

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