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Patient Perceptions of Nurse Caring Behavior and its Determinant Factors: Cross-sectional Survey

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ABSTRACT

Introduction: Nurses caring behavior involves caring for individuals of all ages, families, groups, and communities, sick or not, in all settings. Even though nurses account for the majority of health professionals around the world, the workloads of nurses face trouble in the perception of patients. Patients' perceptions of nurse-caring behaviors had a substantial impact on patients' outcomes and satisfaction. Therefore, this study aimed to assess patients' perceptions of nurse-caring behavior and its determinant Factors.

Methods: A facility-based cross-sectional study was conducted among patients admitted to the inpatient ward on May 8–June 15, 2023. Systematic sampling techniques were used for 474 study participants. The interviewer-administered questionnaire was used to collect the data. The Caring Behaviors Inventory-24 was used to collect the data. Descriptive statistics were computed in the form of mean, frequency tables, and percentages. Logistic regressions were performed to identify associated factors. The odds ratio with a 95% CI at a p value <0.05 was used to determine the significance level.

Results: Overall, 37.4% of patients had poor perception nurse caring behavior. Waiting day in the ward (AOR=2.3 (1.6-6.4) and (3.4 (2.1-10.7)), residence (AOR = 2; 95% CI [1.3, 4.4]), education level (AOR= 1.2; 95% CI (1.12-3.42), and spent time with nurses (AOR=1.7; 95% CI (1.38-5.31)) were determinants of nurse caring behaviors.

Conclusion: This finding shown that 37.4% of the patients perceived poor of nurse caring behavior. Waiting day in the wards, residency, educational level, and time spent with nurses were found to be determinants factors. Therefore, the nurse should work to increase interactions between patients and nurses during care

Key words: Nurse**,** Caring Behavior, perception, Ethiopia

INTRODUCTION

Care is central element that was holistic, individualized and included a process of therapeutic interventions to meet patients' and relatives' needs(1). Nursing caring behaviors are defined as "acts, conduct, and mannerisms enacted by professional nurses that convey concern, safety and attention to the patient". Nurses caring behaviors can improve the quality of care and thus cause a sense of security, a reduction in anxiety, and a consensus between the caregiver and the care recipient, which may subsequently improve patient satisfaction(2). Patient perception in nursing care refers to patients' feelings or views about the nursing care they received during their hospital stay (3). Nurses are the foundation for patient care endeavors, and they are officially trustful of the quality of the care they provide to patients(4). Nurses have the greatest patient contact time, and nursing care is performed 24 hours a day to increase patient satisfaction. However, heavy workloads, inappropriate tasks, insufficient resources, poor management, and shortages of health professionals are the main challenges in providing quality nursing care in developing countries (5).

Caring is the essence of nursing (6) and is the fundamental factor that distinguishes nurses from other health professionals (7). Caring behaviors are a distinct feature of nursing, and patients' experience caring for nurses has a significant impact on patient outcomes and patient satisfaction (8). Because nurses are involved in practically every area of patient care in a hospital, "nursing care" is a crucial factor that influences patient satisfaction as well as patients outcomes (9).

In this regard, studies conducted in showed Jordan (27%) of participants had a poor perception with nurse caring behavior. Additionally, a study conducted in Ghana showed that 11% of patients had poor experience with nurse caring behavior(10). Similarly, a study conducted in Ethiopia in Nagele Borena (19%), Debre Markos (36%), showed that of patients had perceived

poor on nurse caring behavior (11, 12). Pre-service expectations of the service provider, which are influenced by various factors, such as socioeconomic status and cultural background, can impact patients' experience of nursing care(13). Different studies performed at different times and places have shown that patient sex, age, educational level, employment status, waiting day in the wards, and spent time with nurses were determinants of patient perception in nursing care behavior(11, 12, 14, 15).

Therefore, nurses must ensure that their caring behaviors are a distinct feature of nurses working in wards in medical-surgical and orthopedic settings, which is important for successful patient outcomes, as nurses provide supportive, physical, educational, and emotional care vital to patients' wellbeing(16).

In Ethiopia's hospitals, there are an insufficient number of employed nurses. Even if nurses constitute the largest proportion of healthcare employees and play an important role in the care of patients. Examining patients' perception of nurse caring behaviors has the potential to improve patient care in wards, which may eventually influence patient outcomes and nursing practices. However, there is a limitation to the findings on patients' perceptions of nurse caring behavior and the previous finding inclined into nurses' perception on caring behavior. Therefore, this study aimed to measure Patients' Perceptions of Nurse Caring Behavior and its determinants among admitted patients.

METHODS AND MATERIALS

Study setting, study design and study period

The study was conducted in southern Gondar, an Amhara regional state located 665 km from Addis Ababa (the capital city of Ethiopia), in Debre Tabor compressive specialized hospitals in selected medical, surgical, and orthopedic wards. The hospital, which is the largest in the South

Gondar zone, serves more than 2.5 million people. A hospital-based, cross-sectional study was conducted from May 8 to June 15, 2023.

Source population

All patients were admitted to Debre Tabor Comprehensive Specialized Hospitals, South Gondar

Study population

All the selected patients were admitted to the Debre Tabor Comprehensive Specialized Hospitals in the Medical, Surgical, and Orthopedics Wards during the data collection.

Inclusion and exclusion criteria

At the time of data collection, all adult patients aged >18 years who were present in the selected ward were included in the study. In contrast, all patients who were absent, were severely ill, were unwilling to participate, or were waiting at the selected ward for less than 24 hours were excluded from the interviews.

Operational definition and terms

Patient perception of nurse caring behaviors: Patient perceptions regarding nurse caring behavior was defined as patient experience of nurse practice as the ability to see the skill and knowledge, respectfulness, assurance, and connectedness in hospitals.

Good perception: using the mean, respondents who scored above the means had positive experiences, while those who scored below the means had **poor perception.**

Sample size determination and sampling methods

Sample size determination

The needed sample size was determined using the single population proportion formula by taking the magnitude of patient experience with care behavior as 53.3% (1)with a 95%

confidence interval, 5% margin of error and a nonresponse rate of 10%. The final sample size was 474.

Sampling methods

A systematic random sampling technique was used. Based on the previous month's average number of patients in the three wards (surgical (880), medical (1110), and orthopedic (510), in which a totals of 2500 patients were divided by the sample size of 474, the calculated interval was every 5th patient. The first patient was randomly selected after the interval was calculated, and then, every fifth patient was selected until a sufficient sample size was achieved. Patients who were not present at the time of data collection were excluded, and the next number was included.

Data collection tools and procedure

An interviewer-administered structured questionnaire was used to collect data from participants during the study period. The data collection was performed by three diploma nurses. The questioner has two parts, socio-demographic data and the Caring Behaviors Inventory (CBI), which are used to measure patients' perception on nurse caring behaviors. It has four dimensions: assurance (to be available to meet a patient's needs and safety), knowledge and skill (to demonstrate their proficiency and competence), respectfulness (engaging the person´s dignity), and connectedness (to be constantly ready to be able to assist the patient). The Caring Behaviors Inventory 24 (CBI-24). The scale consists of 24 items, and all items are scored on a 6-point likert scale (1 = never, 2 = almost never, 3=sometimes, 4 = usually, 5=often, 6 = always). Mean scale were calculated for both subscale and overall scale. The patients were assessed on this scale, and the highest possible score was 144 points, which indicated that the higher the score was, the greater the degree of nursing care behavior.

Data quality assurance and control

The Structure Questionnaire was translated into the local language (Amharic) and then back to English for consistency. To ensure the quality of the data, three diploma nurses were recruited for data collection from the institution (study area), and training was given for two days on how to collect the data and objective, exclusion, and inclusion criteria. The questionnaires were also pretested on thirty patients from the Woreta Primary Hospital before data collection to assess the questionnaire's reliability, consistency, and appropriateness, with subsequent correction and modification. The reliability of tool was checked with Cronbach's α of CBI-24 were 0.89 which is considered as good

Data analysis and presentation

The data were checked for completeness and consistency, after which the data were cleaned, coded, and entered into Epidata 4.6 and exported to SPSS version 25 for analysis. Descriptive statistical analysis, such as mean, standard deviation, frequency distribution and proportion, was performed. All explanatory variables with a p value of 0.25 from the binary logistic regression model were fitted into the multivariable logistic regression model, and finally, the variables that had been independently associated with the dependent variable were identified on the basis of 95% CI and a p value less than 0. 05.

RESULTS

Socio-demographic characteristics of the respondents

A total of 474 admitted patients were included in this study, for a response rate of 100%. The mean ±SD age of the study participants was 42.29 ±25.84 years, and 240 (50.6%) of the total study participants were female. Of the total respondents, 247 (52.2%) of the patients admitted were from rural areas. Among the admitted patients, the majority (260; 54.8%) stayed for 1-5

days. Additionally, two hundred tween two 222 (46.8%) study participants could not read or write. A total of 215 (45%) study participants were admitted to the medical ward. More than half (287 [60.5%] of the study participants provided free service at the hospitals [Table 1].

Table 1 Socio-demographic Characteristics of the Respondents in DTCSH Hospitals,

Variables	Categories	Frequency	Percent
Sex	Female	240	50.6
	Male	234	49.4
Age	18-34	207	43.6
	35-64	207	43.6
	65 & above	60	12.8
Residence	Urban	227	47.9
	Rural	247	52.1
Marital status	Single	17	3.5
	Married	282	59.4
	Divorced	34	7.17
	Widowed	22	4.6
	Separated	29	6.1
Education level	Can't read and write	222	46.8
	Primary school	78	16.4
	Secondary	122	25.7

	College & above	52	10.9
Types of ward	Medical	215	45
	Surgical	208	43
	Orthopedics	57	12
waiting days in ward	1-5	260	54.8
	6-10	146	30.8
	11-14	37	7.8
	15 & above	31	6.6
Spent time with nursing	<30 minutes	287	60.5
	>30 minutes	187	39.5

Perceived Prevalence Nurse Caring Behavior

Out of 474 respondents, 177 (37.4%) (95% CI: 29.5–40.3%) patients had poor perception with nurse caring behaviors with the overall means scales of care 4.55. On the other hand, in the subscales of caring behaviors, 40.1% had poor with the means scores of perception with "assurance," and 42.2% of patients had poor perception with the knowledge and skills of nurses. A total of 36.1% of patients had poor perceptions with respect to and full deference to others," and 30% of patients had poor perception with connectedness and caring behaviors (Table 2).

Table 2 Perceived patients' nurse caring behavior in Debre Tabor Comprehensive Specialized Hospitals, 2023

Nurse caring behaviors	Category	Frequency	Percent

Assurance	Good	284	59.9
	Poor	190	40.1
Knowledge and skill	Good	273	57.5
	Poor	201	42.5
Respectfulness	Good	300	63.3
	Poor	174	36.7
Connected ness	Good	332	70
	Poor	142	30
Overall perception	Good	297	62.6
	Poor	177	37.4

Determinates of patients' perception in nursing care behavior

Of the study participants, 167 (56.7%) male patients had poor perception with nurse caring behaviors. In addition, more than half of the 196 (65.3%) patients aged 35-64 years had poor perception with nursing care. More than half of the study participants were 234 (78%) urban residents who had poor perception reading about nursing care behavior, and 162 (54%) participants whose educational status could not be read or written were poor perceptions of nursing care behavior. More than half of the patients admitted to medical wards had poor nurse caring behavior [Table 3].

Table 3 Determinants that might affect patients' perceptions of nurse caring behavior, 2023

Variable	Categories	Patient perception of nurse caring behaviors			
		Good	%	Poor	%
Sex	Female	142	29.9	98	20.6
	Male	116	24.4	120	25.6
Age	18-34	120	25.6	87	18.3
	35-64	97	20.4	110	23.2
	65 & above	48	10.12	20	4.2
Residence	Urban	144	30.3	103	21.7
	Rural	106	22.3	121	25.5
Education	Can't read and write	144	30.3	78	16.5
	Primary school	31	6.5	47	9.9
	Secondary	43	9.1	79	16.7
	College & above	14	2.95	38	8.01
Types of ward	Medical	103	21.7	112	23.6
	Surgical	93	19.6	115	24.2
	Orthopedics	18	3.8	39	8.2
Waiting days in ward	1-5	148	31.2	112	23.6
	6-10	126	26.6	55	11.6
	11-14	22	4.6	15	3.1
	15 & above	16	3.37	15	3.1
Spent time	>30 minutes	83	17.5	204	43

with nursing	<30 minutes	92	19.4	95	20

Factors related to patients' perception with nursing care behavior

Of the four variables, that entered into multivariable waiting day in the ward (AOR = 2.3 (1.6–6.4) and 3.4 (2.1–10.7); residence (AOR = 2; 95% CI [1.3, 4.4]; education status (AOR = 1.2; 95% CI (1.12-3.42); and spent time with nurses (AOR = 1.7; 95% CI (1.38–5.31)) were found determinants of nurse caring behaviors

Patients who spent with nurse less than 30 minutes during shifting hours were 1.7 times more likely to perceive poor towards nurse caring behavior than those who spent greater than 30 minutes. Patients whose educational level was secondary were 1.2 times more likely to perceive poor nurse caring behavior than those who can't read and write (AOR = 1.2; 95% CI: 1.12–3.42). Patients whose waiting day in the ward was between 6 and 10 days were 2.3 times more likely to had perceived poor nurse caring behavior than were those who wait for less than 5 days (AOR = 2.3; 95% CI: 1.6–6.4). Finally, patients with an urban resident were 2 times more likely perceived poor nurse caring behavior as compared to rural resident (AOR=2; 95% CI (1.3-4.4)) [Table 4].

Table 4. Determinants factors of patients' perception in nursing care behavior at DTCSH, 2023

Variables	Category	Good perception	Poor perception	COR	AOR
Sex	Female	142	98	1	1
	Male	116	120	1.49	1.23 (0.79-1.8)
Age	18-34	120	87	0.57	0.64 (0.72–2.14)
	35-64	97	110	0.36	0.22 (0.34–1.2)
	65 & above	48	20	1	1
Residence	Urban	144	103	1.5	2(1.3-4.4)*
	Rural	106	121	1	1
Education	Can't read and write	144	78	5.01	1
	Primary school	31	47	1.79	1.7 (0.431-1.355)
	Secondary	43	79	1.47	1.2(1.12-3.42)*
	College & above	14	38	5.11	2.8(3.56-8.95)
Types of ward	Medical	103	112	4.7	2.34(0.87-3.77)
	Surgical	93	115	1.3	0.44 (0.399-1.05)
	Orthopedics	18	39	1	1
Length of stay in days in	1-5	148	112	1.13	0.48(0.12-3.2)
	6-10	126	55	2.14	2.3(1.6 -6.4)□□
	11-14	22	15	1.37	3.4(2.1-10.7)□

ward	15 & above	16	15	1	1
Spent time with nurses	<30 minute	204	83	2.16	2(1.71-4.876)*
	> 30 minutes	95	92	1	1

Note highly significant=□ p-value <0.05, □□p-value <0.01

AOR =adjusted odds ratio, COR=crude odds ratio, CI=confidence interval, "1"=reference category

Discussion

The aim of this study was to provide patients perceptions of nurse-caregiving behavior in Debre Tabor Comprehensive Specialized Hospitals, Ethiopia. In addition, this study aimed to identify determinants' of patient perception of nurse caring behavior. The current findings showed that 37.6% of patients perceived poor nurse caring behavior. These findings were greater than those of studies performed in Ghana(17), Pakistan(1), and India(18). And also less than study done in Ethiopia Debre Marko(12). The discrepancy in the results of the Debre Markos study might be due to the use of measuring tools; for example, a previous study used the 26-item Newcastle Patient Experience with Nursing Care Scale(19). The discrepancy in Ghana might be due to differences in socio-demographic characteristics and infrastructure. This inconsistency in Pakistan might be due to differences in socio-demographics and sample sizes, with the former being a small sample size. This finding indicates a high proportion of patients' perceived poor nurse-caring behavior, and this finding helps nurses apply and advance nurse practice by sustaining nursing standards.

We found that patients who waiting for longer days in ward were more likely to have perceived poor nurse caring behaviors than patients who were waiting for less than five days among those admitted. This study was similar to the study performed in South Wollo(20), Debre Markos(12), India (18). This finding might be due the result of extended hospital stays, which can have a negative impact on patient care, increase the risk of violence and aggression, and cause stress for service users who must take unscheduled time off.(21). Patients whose educational level was secondary school had poorer perception with nursing care behavior than patients admitted whose educational status was not read or written. This could be because people with higher educational levels are high expectation of standardizing nursing service.

On the other hand, times spent with nurses were significantly associated with patients' perceptions of nurse caring behavior. Patients who spent more than 30 minutes with nurses were two times more likely to be perceived as poor as compared to patients who spent less than 30 minutes with them. This finding supports the idea that poor nurse-patient interactions lead to dissatisfaction and perceived poor nurse caring behavior(22, 23).

In this study, the residence of the patient was significantly associated with the patient's perception with nurse caring behavior. The odds of poor experience with nursing care behavior among urban residents were greater than those among rural residents. This study was similar to the study performed in South Wollo (20). This might be related to awareness and access to health information, as there is mass media availability among urban residents.

Strength and limitations of the study

The strength of the study was that primary data were used. As nature of cross-sectional study cannot show case and effects, longitudinal study might need to explore more. This study was also limited to one institution due to limited resources.

Conclusion

This study showed that 37.4% of patients perceived poor nurse caring behavior. Waiting day in wards, educational level, resident, and time spent with nurses were determinants of patients' perceptions of nurse-caregiving behavior. Nurse caring behavior is one of the most essential parts of care and indicates nursing service. This research has the potential to raise nurses' consciousness and promote patient-centered thinking.

Recommendations

Hospitals should place greater emphasis on the nursing profession because nurses encounter all aspects of patient problems. They should provide appropriate strategies to increase patients'

positive perception toward nursing by filling gaps and providing scheduled training for nurse professionals. Future researchers should also conduct qualitative

Abbreviations

AOR: adjusted odd ratio; COR: crude odd ratio; CBI: Care Behavior Inventory; DTCSH: Debre Tabor Comprehensive Specialized Hospital.

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Availability of data and materials

The data used in this study are available from the corresponding author upon reasonable request.

Declarations

Ethics approval and consent to participate

Ethical approval for the research was obtained from Debre Tabor University's ethical review committee with *Ref.No RP/ 278/23*. The patient was informed, and written consent was obtained from each participant. The participants were not needed to write their names on the questionnaires. The respondents were informed that they had the right to refuse the interview. This study was conducted following the ethical standards of the Declaration of Helsinki.

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Contributions

Mengistu Ewunetu, Yirgalem Abere, and Astewle Andargie Yohannes Tesfahun worked on developing the research idea; designing the study; being involved in writing, training and supervising the data collectors; analyzing and interpreting the results; and preparing the manuscript. Melese Kebede, Sheganew Fetene, Bekalu Mekonen, Gebrehiwot Berie, and Mulu Kebede critically revised the proposal, participated in its design, analysis and interpretation of the results, and wrote the manuscript. All the authors were involved in reading and approving the final manuscript.

Consent for publication

Not applicable.

Competing interest

The authors declare that they have no competing interests.

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Part I. Questionnaire: Socio-demographic-related factors of the respondents in Debre Tabor comprehensive specialized hospitals

1. Sex

   Female ☐ Male ☐

2. Age

   18-34 ☐ 35-64 ☐ 65 & above ☐

3. Residence

   Urban ☐ Rural ☐

4. Marital status

   Single ☐ Married ☐ Divorced ☐ Widowed ☐

5. Education status

   Can't read and write ☐ Primary school ☐ Secondary ☐ College & above ☐

6. Occupation

   Farmer☐ governmental ☐ private☐ merchant ☐

7. Types of ward

   Medical ☐ Surgical ☐ Orthopedics ☐

8. Spent time with nurses

   <30 minutes ☐ > 30 minutes ☐

9. Length of stay in days in the ward 1-5 ☐ 6-10 ☐ 11-14 ☐ above 15 ☐

Part II questionnaire: Patients' experience of nursing care behavior in Debre Tabor Comprehensive Specialized Hospitals

subscale	Care behavior	1 = never,	2 = almost	3= sometimes	4 = usually,	5=often,	, 6 = always
1	**Knowledge and Skills**						
Q11	Knowing how to give shots, intravenous line						
Q12	Being confident with the patient						
Q13	Demonstrating professional knowledge and skill						
Q14	Managing equipment skillfully						
Q15	Treating patient information confidentially						
2	**Assurance of Human Presence**						
Q21	Returning to the patient voluntarily						
Q22	Talking with the patient						
Q23	Encouraging the patient to call if there are problems						
Q24	Responding quickly to the patient´s calls						
Q25	Helping to reduce the patient´s pain						
Q26	Showing concern for the patient						
Q27	Giving the patient´s treatments and medications on time						
Q28	Relieving the patient´s symptom						
3	**Respectful Deference of Others**						
Q31	Attentively listening to the patient						
Q32	Treating the patient as an individual						
Q33	Supporting the patient						
Q34	Being empathetic or identifying with the patien						
Q35	Allowing the patient to express feelings about his/her disease and						

	treatment						
Q36	Meeting the patient`s stated and unstated needs						
4	**Positive Connectedness**						
Q41	Giving instructions or teaching the patient						
Q42	Spending time with the patient						
Q43	Helping the patient grow						
Q44	Being patient or tireless with the patient						
Q45	Including the patient in planning his/her care						

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Patient Perceptions of Nurse Caring Behavior and its Determinant Factors: Cross-sectional Survey

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Patients' Perceptions of Nurse Caring Behaviors and Determinant Factors at Debre Tabor Comprehensive Specialized Hospital: A Cross-sectional Survey

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ABSTRACT

Introduction: Nurses' caring behavior involves providing care for individuals of all ages, families, groups, and communities, whether they are sick or healthy, in all settings. Although nurses make up majority of healthcare professionals worldwide, their heavy workloads often negatively impact Patients' perceptions' of their care. Patients' perceptions of nurse caring behaviors had a substantial impact on patients' outcomes and satisfaction. Therefore, this study aimed to assess patients' perceptions of nurse caring behavior and its determinant Factors.

Methods: A facility-based cross-sectional study was conducted among patients admitted to the inpatient ward from May 8 to June 15, 2023. Systematic sampling techniques were employed to select 474 study participants. The interviewer-administered questionnaire was used to collect the

data. The Caring Behaviors Inventory-24 was used to collect the data. Descriptive statistics were computed in the form of mean, frequency, standard deviation, and percentages. Logistic regressions were performed to identify the factors associated with patients' perceptions of nurse caring behavior. The odds ratio with a 95% CI at a p value <0.05 was used to determine the significance level.

Results: Overall, 37.4% of patients had poor perceptions of nurse caring behaviors. Waiting day in the ward (AOR=2.3; 95 CI (1.6-6.4) and (3.4; 95% CI (2.1-10.7)), residence (AOR = 2; 95% CI (1.3, 4.4), education level (AOR= 1.2; 95% CI (1.12-3.42), and spent time with nurses (AOR=1.7; 95% CI (1.38-5.31)) were identified as determinants patients' perceptions of nurse caring behaviors.

Conclusion: Patients' perceptions of nurse caring behaviors were low. Waiting time in the wards, residency, educational level, and time spent with nurses were identified as determinant factors contributing to patients' poor perceptions of nurse caring behavior. Therefore, hospital management, nursing directors, and nursing staff should collaborate to foster better interactions between patients and nurses during care

Key words: nurse**,** caring behavior, perception,

Strength and limitations of the study

- The strength of the study was that primary data were used.
- As nature of cross-sectional study cannot show case and effects, longitudinal study might need to explore more.
- This study was also limited to one institution due to limited resources.
- The study acknowledges the possibility of social desirability bias and recall bias as limitations

INTRODUCTION

Care is a central element that is holistic and individualized, encompassing a process of therapeutic interventions designed to meet the unique needs of both patients and their family's[1]. Nurse caring behaviors are defined as the acts, conduct, and mannerisms enacted by professional nurses that convey concern, safety and attention to the patient [2]. Nurses' caring behaviors can improve the quality of care, leading to a sense of security, a reduction in anxiety, and a consensus between the caregiver and the care recipient, which may subsequently enhance patient satisfaction[3]. Patient perception in nursing care refers to patients' feelings or views about the nursing care they received during their hospital stay [4]. Nurses are the foundation of patient care endeavors, and they are trustful to provide to provide high quality care to patients[5]. Nurses have the greatest patient contact time, and nursing care is performed 24 hours a day to increase patient satisfaction[6]. However, heavy workloads, inappropriate tasks, insufficient resources, poor management, and shortages of health professionals are the main challenges to provide quality nursing care in developing countries [7].

Caring is the essence of nursing and a fundamental characteristic that distinguishes nurses from other healthcare professionals [8, 9].Caring behaviors are a distinct feature of nursing, and has a significant impact on patient outcomes and patient satisfaction [10]. Because nurses are involved practically in every area of patient care in a hospital [11].

. In this regard; studies conducted in Jordan revealed that 27% of participants had a poor perception of nurses' caring behaviors[12]. Additionally, a study conducted in Ghana showed that 11% of patients had a poor experience with nurse caring behavior[13]. Similarly, studies conducted in Ethiopia, specifically in Nagele Borena (19%) and Debre Markos (36%), reported that a significant proportion of patients had a poor perception of nurses' caring behaviors [14, 15]. . Different studies

from different literatures shown that residence, sex, age, educational level, employment status, waiting day in the wards, and spent time with nurses were determinant factors that affect patients' perceptions of nurse caring behaviors [14-18].

Therefore, nurses must ensure that their caring behaviors in medical, surgical, and orthopedic wards, as these behaviors are crucial for achieving positive patient outcomes-[19].

Ethiopian hospitals face a shortage of employed nurses, despite nurses making up the largest proportion of healthcare staff and playing a critical role in patient care. Examining patients' perception of nurse caring behaviors has the potential to improve patient care in wards, which may ultimately influence patient outcomes.. However, there is a limitation to the findings on patients' perceptions of nurse caring behavior and the previous finding inclined into nurses' perception on caring behavior. Therefore, this study aimed to measure Patients' Perceptions of -nurse caring behaviors and determinant factors among admitted patients.

METHODS AND MATERIALS

Study setting, study design and study period

The study was conducted in southern Gondar zone of the Amhara regional state which is located 665 km from Addis Ababa, the capital city at Debre Tabor Comprehensive specialized hospitals in selected medical, surgical, and orthopedic wards. The hospital, which is the largest health care facility in the South Gondar zone, serves for more than 2.5 million people. A hospital-based, cross-sectional study was conducted from May 8 to June 15, 2023.

Source population

All patients were admitted to Debre Tabor Comprehensive Specialized Hospitals, South Gondar

Study population

All the selected patients were admitted to the Debre Tabor Comprehensive Specialized Hospitals at Medical, Surgical, and Orthopedics Wards during the data collection.

Inclusion and exclusion criteria

At the time of data collection, all adult patients aged >18 years who were present in the selected ward were included in the study. In contrast, all patients who were absent, severely ill, unwilling to participate, and waiting at the selected ward for less than 24 hours were excluded from the interviews.

Operational definition and terms

Patient perception of nurse caring behaviors: Patient perceptions regarding nurse caring behavior was defined as patient experience of nurse practice as the ability to see the skill and knowledge, respectfulness, assurance, and connectedness in hospitals.

Good perception: using the mean, respondents who scored above the means had positive **perception** while those who scored below the means had **poor perception.**

Sample size determination and sampling methods

Sample size determination

The needed sample size was determined using the single population proportion formula by taking the magnitude of patient experience with caring behavior as 53.3% [1]with a 95% confidence interval, 5% margin of error and a nonresponse rate of 10%. The final sample size was 474.

Sampling methods

A systematic random sampling technique was used. Based on the previous month's average number of patients in the three wards (surgical (880), medical (1110), and orthopedic (510) in which a totals of 2500 patients sample size were allocated proportionally. The interval was calculated by dividing the total number of admissions from the previous month by the sample size, resulting in an interval of every 5th patient. After calculating the interval, the first patient was randomly selected. Subsequently, every fifth patient was selected until a sufficient sample size was achieved. Patients who were not present at the time of data collection were excluded, and the next number was included.

Data collection tools and procedure

An interviewer-administered structured questionnaire was used to collect data from study participants during the study period. The data collection was performed by three diploma nurses. The questioner has two parts, socio-demographic data and Caring Behaviors Inventory (CBI), which are used to measure patients' perception on nurse caring behaviors. It has four dimensions: assurance (to be available to meet a patient's needs and safety), knowledge and skill (to demonstrate their proficiency and competence), respectfulness (engaging the person´s dignity), and connectedness (to be constantly ready to be able to assist the patientThe scale consists of 24 items, and all items are scored on a 6-point likert scale (1 = never, 2 = almost never, 3=sometimes, 4 = usually, 5=often, 6 = always). Mean scale were calculated for both subscale and overall scale. The highest possible score was 144 points, which indicated that the higher the score was, the greater the degree of nursing care behavior.

Data quality assurance and control

The Structure Questionnaire was translated into the local language (Amharic) and then back to English for consistency. To ensure the quality of the data, three diploma nurses were recruited for

data collection out of study area, and training was given for two days on how to collect the data, exclusion, and inclusion criteria, and objectives. The questionnaires were also pretested on thirty patients from the Woreta Primary Hospital before data collection to assess the questionnaire's reliability, consistency, and appropriateness, with subsequent correction and modification. The reliability of tool was checked with Cronbach's α of CBI-24 were 0.89 which is considered as good

Data analysis and presentation

The data were checked for completeness and consistency, after which the data were cleaned, coded, and entered into Epidata 4.6 and exported to SPSS version 25 for analysis. Descriptive statistical analysis, such as mean, standard deviation, frequency distribution and proportion, was performed. All explanatory variables with a p value of 0.25 from the binary logistic regression model were fitted into the multivariable logistic regression model, and finally, the variables that had been independently associated with the dependent variable were identified on the basis of 95% CI and a p value less than 0. 05.

Patient and public involvement

None

RESULTS

Socio-demographic characteristics of the respondents

A total of 474 admitted patients were included in this study, for a response rate of 100%. The mean ±SD age of the study participants was 42.29 ±25.84 years, and 240 (50.6%) of the total study participants were female. Of the total study participants, 247 (52.2%) were from rural areas. Among the admitted patients, the majority 260(54.8%) stayed in hospital for 1-5 days. Additionally, 222 (46.8%) study participants were not read or write. A total of 215 (45%) study

participants were admitted to the medical ward. More than half 287 (60.5%) of the study participants provided free service at the hospitals [Table 1].

Table 1 Socio-demographic Characteristics of the Respondents in DTCSH Hospitals

Variables	Categories	Frequency	Percent
Sex	Female	240	50.6
	Male	234	49.4
Age	18-34	207	43.6
	35-64	207	43.6
	65 & above	60	12.8
Residence	Urban	227	47.9
	Rural	247	52.1
Marital status	Single	17	3.5
	Married	282	59.4
	Divorced	34	7.17
	Widowed	22	4.6
	Separated	29	6.1
Education level	Can't read and write	222	46.8
	Primary school	78	16.4

	Secondary	122	25.7
	College & above	52	10.9
Types of ward	Medical	215	45
	Surgical	208	43
	Orthopedics	57	12
waiting days in ward	1-5	260	54.8
	6-10	146	30.8
	11-14	37	7.8
	15 & above	31	6.6
Spent time with nursing	<30 minutes	287	60.5
	>30 minutes	187	39.5

Patients' perceptions of nurse caring behaviors

Out of 474 respondents, 177 (37.4%) (95% CI: 29.5–40.3%) patients had poor perceptions of nurse caring behaviors with the overall mean scores of 4.55. The lowest mean score were for item measuring "connectedness (mean (SD)) = 4.2(0.68)". However the lowest mean score for items measuring "knowledge and skills (mean (SD) =4.8(0.68)" (Table 2). On the other hand, based on the computed mean score, the subscales were dichotomized into good and poor caring behavior. The results showed that 40.1%, 42.2%, 36.1%, and 30% of patients perceived poor caring behavior in the areas of assurance, knowledge and skills, respectfulness, and connectedness, respectively (Table 3).

Table 2 Mean score of CBI subscale

Subscale	Mean(SD)	Overall mean
Knowledge and Skills		
Knowing how to give shots, intravenous line	4.8(0.5)	
Being confident with the patient	5.2(0.72)	4.8(0.68)
Demonstrating professional knowledge and skill	4.7(1,02)	
Managing equipment skillfully	4.6(0.86)	
Treating patient information confidentially	4.7(0.29)	
Assurance of Human Presence		
Returning to the patient voluntarily	4.83(0.67)	
Talking with the patient	4.74(0.52)	
Encouraging the patient to call if there are problems	5.12(0.67)	
Responding quickly to the patient´s calls	4.94(0.8)	4.72(0.59)
Helping to reduce the patient´s pain	4.44(0.45)	
Showing concern for the patient	4.87(0.66)	
Giving the patient´s treatments and medications on time	4.36(0.43)	
Relieving the patient´s symptom	4.52(0.63)	
Respectful Deference of Others		
Attentively listening to the patient	4.01(0.72)	
Treating the patient as an individual	4.16(0.9)	
Supporting the patient	5.04(0.33)	4.5(0.66)
Being empathetic or identifying with the patient	4.3(0.58)	
Allowing the patient to express feelings about his/her disease and treatment	4.7(0.86)	
Meeting the patient`s stated and unstated needs	4.8(0.49)	
Positive Connectedness		
Giving instructions or teaching the patient	4.2(0.81)	
Spending time with the patient	4.43(0.61)	4.2(0.68)
Helping the patient grow	3.35(0.46)	

Being patient or tireless with the patient	4.48(0.57)
Including the patient in planning his/her care	4.52(0.59)

Table 3 Perceived patients' nurse caring behavior in Debre Tabor Comprehensive Specialized Hospitals, 2023

Nurse caring behaviors	Category	Frequency	Percent
Assurance	Good	284	59.9
	Poor	190	40.1
Knowledge and skill	Good	273	57.5
	Poor	201	42.5
Respectfulness	Good	300	63.3
	Poor	174	36.7
Connected ness	Good	332	70
	Poor	142	30
Overall perception	Good	297	62.6
	Poor	177	37.4

Determinant factors of patients' perceptions of nurse caring behaviors

Of the study participants, 167 (56.7%) male had poor perceptions of nurse caring behaviors. In addition, more than half of the 196 (65.3%) study participants aged 35-64 years had poor perceptions of nurse caring behaviors. In addition, more than half of the urban residents 234 (78%) had poor perceptions of nurse caring behavior, and 162 (54%) participants whose educational

status could not be read and written were poor perceptions of nursing care behavior. Of the study participants, 112 (23.6%) who were admitted to the medical ward had poor perceptions of nurse caring behaviors [Table 4].

Table 4 Determinant factors that might affect patients' perceptions of nurse caring behaviors, 2023

Variable	**Categories**	**perceptions of nurse caring behaviors**			
		Good	%	Poor	%
Sex	Female	142	29.9	98	20.6
	Male	116	24.4	120	25.6
Age	18-34	120	25.6	87	18.3
	35-64	97	20.4	110	23.2
	65 & above	48	10.12	20	4.2
Residence	Urban	144	30.3	103	21.7
	Rural	106	22.3	121	25.5
Education	Can't read and write	144	30.3	78	16.5
	Primary school	31	6.5	47	9.9
	Secondary school	43	9.1	79	16.7
	College & above	14	2.95	38	8.01
Types of ward	Medical	103	21.7	112	23.6
	Surgical	93	19.6	115	24.2

	Orthopedics	18	3.8	39	8.2
Waiting days in ward	1-5	148	31.2	112	23.6
	6-10	126	26.6	55	11.6
	11-14	22	4.6	15	3.1
	15 & above	16	3.37	15	3.1
Spent time with nursing	>30 minutes	83	17.5	204	43
	<30 minutes	92	19.4	95	20

Determinant factors of patients' perceptions of nurse-caring behaviors

In the multivariable analysis, four variables were identified as determinants of patients' perception of nursing care behaviors: waiting day in the ward (AOR = 2.3;95 CI (1.6–6.4) and 3.4 (2.1–10.7); residence (AOR = 2; 95% CI [1.3, 4.4]; education status (AOR = 1.2; 95% CI (1.12-3.42); and spent time with nurses (AOR = 1.7; 95% CI (1.38–5.31)).

Patients who spent with nurse less than 30 minutes during shifting hours were 1.7 times more likely to perceive poor towards nurse caring behaviors than those who spent greater than 30 minutes. And also, study participants whose educational level was secondary school were 1.2 times more likely to perceive poor nurse caring behavior than those who can't read and write (AOR = 1.2; 95% CI: 1.12–3.42). In addition, study participants whose waiting day in the ward was between 6 and 10 days were 2.3 times more likely to had perceived poor nurse caring behavior than those who wait for less than 5 days (AOR = 2.3; 95% CI: 1.6–6.4). Finally, study participants whose resident in urban areas-were 2 times more likely perceive poor nurse caring behavior as compared to rural resident (AOR=2; 95% CI (1.3-4.4)) [Table 5].

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Table 5 Determinant factors of patients' perceptions of nurse caring behaviors at DTCSH, 2023

Variables	Category	Good perception	Poor perception	COR	AOR
Sex	Female	142	98	1	1
	Male	116	120	1.49 (1.12-34)	1.23 (0.79–1.9)
Age	18-34	120	87	0.57 (0.34-1.23)	0.64 (0.79–2.14)
	35-64	97	110	0.36 (0.29-1.45)	0.22 (0.34–1.42)
	65 & above	48	20	1	1
Residence	Urban	144	103	1.5 (1.2-6.4)	2(1.3-4.45)*
	Rural	106	121	1	1
Educatio n	Can't read and write	144	78	1	1
	Primary school	31	47	1.79) (2.2-3.55	1.7 (0.43-3.2)
	Secondary	43	79	1.47 (1.32-4.76)	1.2(1.12-9.42)*
	College & above	14	38	5.11(3.6-7.12)	2.8(3.56-6.95)*
Types of ward	Medical	103	112	4.7(2.1-8.2)	2.34(0.87-3.57)
	Surgical	93	115	1.3 (0.89-2.77)	0.44 (0.399-1.05
	Orthopedics	18	39	1	1

Length of stay in days in ward	1-5	148	112	1.13 (1.63-2.13	0.48(0.12-3.2)
	6-10	126	55	2.14 (1.56-3.69)	2.3(1.6 -6.4)□
	11-14	22	15	1.37 (1.15-5.41)	3.4(2.1-10.7)□
	15 & above	16	15	1	1
Spent time with nurses	<30 minute	204	83	2.16 (1.38-5.36)	2(1.71-4.376)*
	> 30 minutes	95	92	1	1

□ p-value <0.05, □□p-value <0.01, 1= reference, AOR =adjusted odds ratio, COR=crude odds ratio, CI=confidence interval

Discussion

The aim of this study was to provide patients' perceptions of nurse caring behaviors at Debre Tabor Comprehensive Specialized Hospitals, Ethiopia. In addition, this study aimed to identify determinant factors of patients' perceptions of nurse caring behavior. The current findings revealed that 37.4% of patients perceived poor nurse caring behaviors, which is higher than the study done in Ghana[20], Pakistan[1], and India[21]. However, this finding was lower than the study conducted in Debre Markos [15]. The discrepancy might be due to the use of different tools, such as the 26-item Newcastle Patient Experience with Nursing Care Scale used in the previous study [22]. The discrepancy in Ghana might be due to differences in socio-demographic characteristics and infrastructure. The inconsistency in Pakistan might be due to differences in socio-demographics and sample sizes, with the former having a small sample size. This finding indicates a high proportion of patients perceived poor nurse caring behaviors, highlighting the need for nurses to improve their practice and uphold nursing standards to achieve better patient outcomes. We found that patients who stayed in the ward for more than six days were more likely to perceive poor nurse caring behaviors compared to those who stayed for less than five days. This study was similar to the study performed in South Wollo[23], Debre Markos[15], India [21]. This might be due to prolonged hospital stays, which can negatively impact patient care, increase the risk of violence and aggression, and cause stress for patients requiring unscheduled time off [24]. On the other hand, patients whose educational level was secondary school had poor perceptions of nurse caring behaviors than patients admitted whose educational status was not read and writte. This could be because people with higher educational levels are high expectation of standardizing nursing service.

In addition, times spent with nurses were significantly associated with patients' perceptions of nurse caring behaviors. Patients who spent less than 30 minutes with nurses were two times more likely to be perceived as poor as compared to patients who spent more than 30 minutes with them. This finding supports the idea that poor nurse-patient interactions contribute to dissatisfaction and negatively influence patients' perceptions of nurse caring behaviors [25, 26].

In this study, the residence of the patient was significantly associated with patients' perceptions of nurse caring behaviors. The odds of poor perceptions of nurse caring behaviors among urban residents were more likely as compared to rural residents. This study was similar to the study done in South Wollo [23]. This might be related to awareness and access to health information, as there is mass media availability among urban residents.

Conclusion

This study showed that 37.4% of patients perceived poor nurse caring behavior. Waiting day in wards, educational level, resident, and time spent with nurses were determinants of patients' perceptions of nurse-caregiving behavior. Nurse caring behavior is one of the most essential parts of care and indicates nursing service. This research has the potential to raise nurses' consciousness and promote patient-centered care.

Recommendations

Hospitals management should place greater emphasis on the nursing profession because nurses encounter all aspects of patient problems. They should provide appropriate strategies to increase patients' positive perception toward nursing care by filling gaps and providing scheduled training for nurse professionals. Future researchers should consider a qualitative method to gain deeper insights into patients' perceptions of nurse caring behavior.

Abbreviations

AOR: adjusted odd ratio; COR: crude odd ratio; CBI: Care Behavior Inventory; DTCSH: Debre Tabor Comprehensive Specialized Hospital.

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Availability of data and materials

The data used in this study are available from the corresponding author upon reasonable request.

Declarations

Ethics approval and consent to participate

Ethical approval for the research was obtained from Debre Tabor University's ethical review committee with *Ref.No RP/ 278/23*. The patient was informed, and written consent was obtained from each participant. The participants were not needed to write their names on the questionnaires. The respondents were informed that they had the right to refuse the interview. This study was conducted following the ethical standards of the Declaration of Helsinki.

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Contributions

Mengistu Ewunetu, Yirgalem Abere, Astewle Andargie Baye and Yohannes Tesfahun kassie worked on developing the research idea; designing the study; being involved in writing, training and supervising the data collectors; analyzing and interpreting the results; and preparing the

manuscript. Melese Kebede Hailu, Sheganew Fetene, Bekalu Mekonen Belay, Gebrehiwot Berie Mekonen, and Mulu Kebede critically revised the proposal, participated in its design, analysis and interpretation of the results, and wrote the manuscript. All the authors were involved in reading and approving the final manuscript. Mengistu Ewunetu serves as the guarantor of this study and takes full responsibility for its accuracy and integrity. The study was conducted in accordance with ethical guidelines, ensuring the validity of data collection, analysis, and interpretation.

Consent for publication

Not applicable.

Competing interest

The authors declare that they have no competing interests.

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APPENDIX

Supplementary 1

Supplementary 2

Part I. Questionnaire: Socio-demographic-related factors of the respondents in Debre Tabor comprehensive specialized hospitals

1. Sex

   Female ☐ Male ☐

2. Age

   18-34 ☐ 35-64 ☐ 65 & above ☐

3. Residence

   Urban ☐ Rural ☐

4. Marital status

   Single ☐ Married ☐ Divorced ☐ Widowed ☐

5. Education status

   Can't read and write ☐ Primary school ☐ Secondary ☐ College & above ☐

6. Occupation

   Farmer☐ governmental ☐ private☐ merchant ☐

7. Types of ward

   Medical ☐ Surgical ☐ Orthopedics ☐

8. Spent time with nurses

   <30 minutes ☐ > 30 minutes ☐

9. Length of stay in days in the ward 1-5 ☐ 6-10 ☐ 11-14 ☐ above 15 ☐

Part II questionnaire: Patients' experience of nursing care behavior in Debre Tabor Comprehensive Specialized Hospitals

subscale	Care behavior	1 = never,	2 = almost	3= sometimes	4 = usually,	5=often,	, 6 = always
1	**Knowledge and Skills**						
Q11	Knowing how to give shots, intravenous line						
Q12	Being confident with the patient						
Q13	Demonstrating professional knowledge and skill						
Q14	Managing equipment skillfully						
Q15	Treating patient information confidentially						
2	**Assurance of Human Presence**						
Q21	Returning to the patient voluntarily						
Q22	Talking with the patient						
Q23	Encouraging the patient to call if there are problems						
Q24	Responding quickly to the patient´s calls						
Q25	Helping to reduce the patient´s pain						
Q26	Showing concern for the patient						
Q27	Giving the patient´s treatments and medications on time						
Q28	Relieving the patient´s symptom						
3	**Respectful Deference of Others**						
Q31	Attentively listening to the patient						
Q32	Treating the patient as an individual						
Q33	Supporting the patient						
Q34	Being empathetic or identifying with the patien						
Q35	Allowing the patient to express feelings about his/her disease and						

	treatment						
Q36	Meeting the patient`s stated and unstated needs						
4	**Positive Connectedness**						
Q41	Giving instructions or teaching the patient						
Q42	Spending time with the patient						
Q43	Helping the patient grow						
Q44	Being patient or tireless with the patient						
Q45	Including the patient in planning his/her care						

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Patients' Perceptions of Nurse Caring Behaviors and Determinant Factors at Debre Tabor comprehensive specialized hospital in Debre Tabor City, Ethiopia: A Cross-sectional Survey

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Keywords:	Nurses, Nursing Care, Behavior, Ethiopia

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Patients' Perceptions of Nurse Caring Behaviors and Determinant Factors at Debre Tabor comprehensive specialized hospital in Debre Tabor City, Ethiopia: A Cross-sectional Survey

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ABSTRACT

Objective: The purposes of this study was to investigate patients' perceptions of nurse caring behaviors and its determinant factors at Debre Tabor comprehensive specialized hospital in Debre Tabor city, Ethiopia.

Design: A facility-based cross-sectional study was conducted among 474 patients admitted to the inpatient ward.

Setting: The study was conducted at Debre Tabor Comprehensive Specialized Hospital in Debre Tabor City.

Participants: Patients who were admitted to the inpatient ward at Debre Tabor Comprehensive Specialized Hospital.

Intervention: No intervention was needed in this study.

Primary and secondary outcome measures: Binary logistic regression was performed to identify factors associated with patients' perceptions of nurse caring behavior. The odds ratio with a 95% confidence interval (CI) and a p-value < 0.05 was used to determine statistical significance.

Results: Overall, 37.4% of patients had poor perceptions of nurse caring behaviors. Waiting day in the ward (AOR=2.3; 95% CI (1.6-6.4) and (3.4; 95% CI (2.1-10.7)), residence (AOR=2; 95% CI (1.3-4.4)), education level (AOR=1.2; 95% CI (1.12-3.42)), and spent time with nurses (AOR=1.7; 95% CI (1.38-5.31)) were identified as determinants of patients' perceptions of nurse caring behaviors.

Conclusion: The proportions of patients' perceptions of nurse caring behaviors were poor. Waiting time in the wards, being an urban resident, educational level, and time spent with nurses were identified as determinant factors of poor perceptions of patients on nurse caring behavior. Therefore, hospital management, nursing directors, and nursing staff should collaborate to foster better interactions between patients and nurses.

Key words: nurse**,** caring behavior, perception

Strength and limitations of the study

- The strength of the study was that primary data were used.
- Due to the nature of a cross-sectional study, it is difficult to determine cannot cause and effects dependent and independent variables. The study was also limited to one institution due to limited resources.
- The study acknowledges the possibility of social desirability bias and recall bias as limitations.

INTRODUCTION

Care is a central element that is holistic and individualized, encompassing a process of therapeutic interventions designed to meet the unique needs of both patients and their family's [1]. Nurse caring behaviors are defined as the acts, conduct, and mannerisms enacted by professional nurses that convey concern, safety and attention to the patient [2]. A good nurse's caring behaviors can improve the quality of care, leading to a sense of security, a reduction in anxiety, and a consensus between the caregiver and the care recipient, which may subsequently enhance patient satisfaction [3]. Patient perception in nursing care refers to patients' feelings or views about the nursing care they received during their hospital stay [4]. Nurses are the foundation of patient care endeavors, and they are trustworthy to provide high quality care to patients [5]. And also, nurses have the greatest patient contact time, and nursing care is performed 24 hours a day, which plays crucial role in improving patient outcome [6]. However, heavy workloads, inappropriate tasks, insufficient resources, poor management, and shortages of nursing staff are the main challenges to provide quality nursing care in developing countries [7]. Caring is the essence of nursing and a fundamental characteristic that distinguishes nurses from other healthcare professionals [8, 9]. Caring behaviors are a distinct feature of nursing, and has a significant impact on patient outcomes and patient satisfaction [10]. Because nurses are involved practically in every area of patient care in a hospital [11].

In this regard~~;~~ , studies conducted in Jordan revealed that 27% of participants had a poor perception of nurses' caring behaviors [12]. Additionally, a study conducted in Ghana showed that 11% of patients had a poor experience with nurse caring behavior [13]. Similarly, studies conducted in Ethiopia, specifically in Nagele Borena (19%) and Debre Markos (36%), reported that a significant proportion of patients had a poor perception of nurses' caring behaviors [14,

15]. Different studies from different literatures have shown that residence, sex, age, educational level, employment status, waiting days in the wards, and time spent with nurses are determinant factors that affect patients' perceptions of nurse caring behaviors [14-18].

Therefore, nurses must ensure that their caring behaviors are medical, surgical, and orthopedic wards, as these behaviors are crucial for achieving positive patient outcomes [19].

Ethiopian hospitals face a shortage of employed nurses, despite nurses making up the largest proportion of healthcare staff and playing a critical role in patient care. Examining patients' perception of nurse caring behaviors has the potential to improve patient care in wards, which may ultimately influence patient outcomes. However, there is a limitation to the findings on patients' perceptions of nurse caring behavior, and the previous finding inclined into nurses' perception of caring behavior. Therefore, this study aimed to measure patients' perceptions of nurse caring behaviors and determinant factors among admitted patients.

METHODS AND MATERIALS

Study setting, study design and study period

The study was conducted in southern Gondar zone of the Amhara regional state, which is located 665 km from Addis Ababa, the capital city of Ethiopia. It was carried out at Debre Tabor Comprehensive specialized hospitals in selected medical, surgical, and orthopedic wards. The hospital, which is the largest health care facility in the South Gondar zone, serves for more than 2.5 million people. A hospital-based cross-sectional study was conducted from May 8 to June 15, 2023.

Source population

All patients were admitted to Debre Tabor comprehensive specialized hospitals.

Study population

All the selected patients were admitted to the Debre Tabor Comprehensive Specialized Hospitals at medical, surgical, and orthopedics wards during the data collection period.

Inclusion and exclusion criteria

At the time of data collection, all adult patients aged >18 years who were present in the selected ward were included in the study. In contrast, all patients who were absent from their bed, severely ill, unwilling to participate, or had stayed in the selected ward for less than 24 hours were excluded from the interviews.

Operational definition and terms

Patient perception of nurse caring behaviors: Patients' perceptions of nurse caring behavior refer to the experience of patients regarding nursing practice in the hospital and are measured by the caring behavior inventory tool, which has four subscales: knowledge and skill, respectfulness, assurance, and connectedness. Respondents who scored above the mean were considered to have a good perception, while those who scored below the mean had a poor perception.

Sample size determination and sampling methods

Sample size determination

The needed sample size was determined using the single population proportion formula by taking the magnitude of patient experience with caring behavior as 53.3% [1] with a 95% confidence interval, a 5% margin of error, and a nonresponse rate of 10%. The final sample size was 474.

Sampling methods

A systematic random sampling technique was used. The sample size was allocated proportionally based on the previous month's average number of patients in the three wards: surgical (880), medical (1,110), and orthopedic (510). The interval was calculated by dividing the total number of admissions from the previous month by the sample size, resulting in an interval of every 5th patient. After calculating the interval, the first patient was randomly selected. Subsequently, every fifth patient was selected until a sufficient sample size was achieved. Patients who were not present at the time of data collection were excluded, and the next number was included.

Data collection tools and procedure

An interviewer-administered structured questionnaire was used to collect data from study participants during the study period. The data collection was performed by three diploma nurses. The questioner has two parts, socio-demographic data and Caring Behaviors Inventory (CBI), which are used to measure patients' perceptions of nurse caring behaviors. It has four dimensions: assurance (to be available to meet a patient's needs and safety), knowledge and skill (to demonstrate their proficiency and competence), respectfulness (engaging the person´s dignity), and connectedness (to be constantly ready to be able to assist the patient). The scale consists of 24 items, and all items are scored on a 6-point likert scale (1 = never, 2 = almost never, 3 = sometimes, 4 = usually, 5 = often, 6 = always). Mean scales were calculated for both subscales and the overall scale. The highest possible score was 144 points, which indicated that the higher the score was, the greater the degree of nursing care behavior.

Data quality assurance and control

The structured questionnaire was translated into the local language (Amharic) and then back to English for consistency. To ensure the quality of the data, three diploma nurses were recruited

for data collection out of the study area, and training was given for two days on how to collect the data, exclusion and inclusion criteria, and objectives. The questionnaires were also pretested on thirty patients from the Woreta Primary Hospital before data collection to assess the questionnaire's reliability, consistency, and appropriateness, with subsequent correction and modification. The reliability of the tool was assessed using Cronbach's α for CBI-24, which was 0.89, indicating good reliability.

Data analysis and presentation

After the data were checked for completeness and consistency, the data were cleaned, coded, and entered into Epidata 4.6 and then exported to SPSS version 25 for analysis. Descriptive statistical analysis, such as mean, standard deviation, frequency distribution, and proportion, was performed. All explanatory variables with a p-value of 0.25 from the binary logistic regression model were fitted into the multivariable logistic regression model, and finally, the variables that had been independently associated with the dependent variable were identified on the basis of a 95% CI and a p-value less than 0.05.

Patient and public involvement

None

RESULTS

Socio-demographic characteristics of the respondents

A total of 474 admitted patients were included in this study, for a response rate of 100%. The mean ± SD age of the study participants was 42.29 ± 25.84 years and 240 (50.6%) of the total study participants were female. Of the total study participants, 247 (52.2%) were from rural areas. Among the study participants 260 (54.8%) were stayed in the hospital for 1-5 days. Additionally, 222 (46.8%) study participants were not able to read or write. A total of 215 (45%)

study participants were admitted to the medical ward. More than half 287(60.5%) of the study participants provided free service at the hospitals [Table 1].

Table 1 Socio-demographic Characteristics of the Respondents in DTCSH Hospitals

Variables	Categories	Frequency	Percent
Sex	Female	240	50.6
	Male	234	49.4
Age	18-34	207	43.6
	35-64	207	43.6
	65 & above	60	12.8
Residence	Urban	227	47.9
	Rural	247	52.1
Marital status	Single	17	3.5
	Married	282	59.4
	Divorced	34	7.17
	Widowed	22	4.6
	Separated	29	6.1
Education level	Can't read and write	222	46.8
	Primary school	78	16.4
	Secondary	122	25.7

	College & above	52	10.9
Types of ward	Medical	215	45
	Surgical	208	43
	Orthopedics	57	12
waiting days in ward	1-5	260	54.8
	6-10	146	30.8
	11-14	37	7.8
	15 & above	31	6.6
Spent time with nursing	<30 minutes	287	60.5
	>30 minutes	187	39.5

Prevalence of Patients' perceptions of nurse caring behaviors

Out of 474 respondents, 177 (37.4%) (95% CI: 29.5–40.3%) patients had poor perceptions of nurse caring behaviors with the overall mean scores of 4.55. The lowest mean score was for the item measuring "connectedness (mean (SD) = 4.2(0.68))". However, the lowest mean score for items measuring "knowledge and skills (mean (SD) =4.8(0.68))" (Table 2). On the other hand, based on the computed mean score, the subscales were dichotomized into good and poor caring behavior. The results showed that 40.1%, 42.2%, 36.1%, and 30% of patients perceived poor caring behavior in the areas of assurance, knowledge and skills, respectfulness, and connectedness, respectively (Table 3).

Table 2 Mean score of CBI subscale

Subscale	**Mean(SD)**	**Overall mean**

Knowledge and Skills		
Knowing how to give shots, intravenous line	4.8(0.5)	
Being confident with the patient	5.2(0.72)	4.8(0.68)
Demonstrating professional knowledge and skill	4.7(1,02)	
Managing equipment skillfully	4.6(0.86)	
Treating patient information confidentially	4.7(0.29)	
Assurance of Human Presence		
Returning to the patient voluntarily	4.83(0.67)	
Talking with the patient	4.74(0.52)	
Encouraging the patient to call if there are problems	5.12(0.67)	
Responding quickly to the patient´s calls	4.94(0.8)	4.72(0.59)
Helping to reduce the patient´s pain	4.44(0.45)	
Showing concern for the patient	4.87(0.66)	
Giving the patient´s treatments and medications on time	4.36(0.43)	
Relieving the patient´s symptom	4.52(0.63)	
Respectful Deference of Others		
Attentively listening to the patient	4.01(0.72)	
Treating the patient as an individual	4.16(0.9)	
Supporting the patient	5.04(0.33)	4.5(0.66)
Being empathetic or identifying with the patient	4.3(0.58)	
Allowing the patient to express feelings about his/her disease and treatment	4.7(0.86)	
Meeting the patient`s stated and unstated needs	4.8(0.49)	
Positive Connectedness		
Giving instructions or teaching the patient	4.2(0.81)	
Spending time with the patient	4.43(0.61)	4.2(0.68)
Helping the patient grow	3.35(0.46)	
Being patient or tireless with the patient	4.48(0.57)	
Including the patient in planning his/her care	4.52(0.59)	

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Table 3 Perceived patients' nurse caring behavior in Debre Tabor Comprehensive Specialized Hospitals, 2023

Nurse caring behaviors	Category	**Frequency**	**Percent**
Assurance	Good	284	59.9
	Poor	190	40.1
Knowledge and skill	Good	273	57.5
	Poor	201	42.5
Respectfulness	Good	300	63.3
	Poor	174	36.7
Connected ness	Good	332	70
	Poor	142	30
Overall perception	Good	297	62.6
	Poor	177	37.4

Factors related to patients' perceptions of nurse caring behaviors

Of the study participants, 167 (56.7%) males had poor perceptions of nurse caring behaviors. In addition, more than half of the 196 (65.3%) study participants aged 35-64 years had poor perceptions of nurse caring behaviors. In addition, more than half of the urban residents 234 (78%) had poor perceptions of nurse caring behavior, and 162 (54%) participants whose educational status could not be read and written had poor perceptions of nurse caring behaviors. Of the study participants, 112 (23.6%) who were admitted to the medical ward had poor perceptions of nurse caring behaviors [Table 4].

Table 4 Determinant factors that might affect patients' perceptions of nurse caring behaviors at Debre Tabor comprehensive specialized hospital, 2023

Variable	Categories	perceptions of nurse caring behaviors			
		Good	%	Poor	%
Sex	Female	142	29.9	98	20.6
	Male	116	24.4	120	25.6
Age	18-34	120	25.6	87	18.3
	35-64	97	20.4	110	23.2
	65 & above	48	10.12	20	4.2
Residence	Urban	144	30.3	103	21.7
	Rural	106	22.3	121	25.5
Education	Can't read and write	144	30.3	78	16.5
	Primary school	31	6.5	47	9.9
	Secondary school	43	9.1	79	16.7
	College & above	14	2.95	38	8.01
Types of ward	Medical	103	21.7	112	23.6
	Surgical	93	19.6	115	24.2
	Orthopedics	18	3.8	39	8.2
Waiting days in ward	1-5	148	31.2	112	23.6
	6-10	126	26.6	55	11.6
	11-14	22	4.6	15	3.1

	15 & above	16	3.37	15	3.1
Spent time with nursing	>30 minutes	83	17.5	204	43
	<30 minutes	92	19.4	95	20

Determinant factors of patients' perceptions of nurse-caring behaviors

In the multivariable analysis, four variables were identified as determinants of patients' perception of nursing care behaviors: waiting day in the ward (AOR = 2.3; 95% CI (1.6–6.4) and 3.4 (2.1–10.7)); residence (AOR = 2; 95% CI (1.3, 4.4)); education status (AOR = 1.2; 95% CI (1.12–3.42)); and time spent with nurses (AOR = 1.7; 95% CI (1.38–5.31)).

Patients who spent less than 30 minutes with the nurse during shifting hours were 1.7 times more likely to perceive poor nurse-caring behaviors than those who spent greater than 30 minutes. And also, study participants whose educational level was secondary school were 1.2 times more likely to perceive poor nurse caring behavior than those who can't read and write (AOR = 1.2; 95% CI: 1.12–3.42). In addition, study participants whose waiting day in the ward was between 6 and 10 days were 2.3 times more likely to have perceived poor nurse caring behavior than those who waited for less than 5 days (AOR = 2.3; 95% CI: 1.6–6.4). Finally, study participants who were in urban areas were 2 times more likely to perceive poor nurse caring behavior as compared to rural residents (AOR=2; 95% CI(1.3-4.4)) [Table 5].

Table 5 Bivariable and multivariable logistic regression analysis of determinant factors of patients' perceptions of nurse caring behaviors at DTCSH, 2023

Variables	Category	Good perception	Poor perception	COR	AOR
Sex	Female	142	98	1	1
	Male	116	120	1.49 (1.12-34)	1.23 (0.79-1.8

Age	18-34	120	87	0.57 (0.34-1.23)	0.64 (0.72–2.1.4)
	35-64	97	110	0.36 (0.29-1.45)	0.22 (0.34–1.2)
	65 & above	48	20	1	1
Residence	Urban	144	103	1.5 (1.2-6.4)	2(1.3-4.4)*
	Rural	106	121	1	1
Education	Can't read and write	144	78	1	1
	Primary school	31	47	1.79) (2.2-3.55	1.7 (0.43-1.36)
	Secondary	43	79	1.47 (1.32-4.76)	1.2(1.12-3.1)
	College & above	14	38	5.11(3.6-7.12)	2.8(3.56-8.5)
Types of ward	Medical	103	112	4.7(2.1-8.2)	2.34(0.87-5.5)
	Surgical	93	115	1.3 (0.89-2.77)	0.44 (0.39-1.45)
	Orthopedics	18	39	1	1
Length of stay in days in ward	1-5	148	112	1.13 (1.63-2.13	0.48(0.12-1.2)
	6-10	126	55	2.14 (1.56-3.69)	2.3(1.6 -6.4)
	11-14	22	15	1.37 (1.15-5.41)	3.4(2.1-10.7)
	15 & above	16	15	1	1
Spent time	<30 minute	204	83	2.16 (1.38-5.36)	2(1.71-4.876)

with nurses	> 30 minutes	95	92	1	1

□ p-value <0.05, □□p-value <0.01, 1= reference, AOR =adjusted odds ratio, COR=crude odds ratio, CI=confidence interval

Discussion

The aim of this study was to provide patients' perceptions of nurse caring behaviors at Debre Tabor comprehensive specialized hospitals, Ethiopia. In addition, this study aimed to identify determinant factors of patients' perceptions of nurse caring behavior. The current findings revealed that 37.4% of patients perceived poor nurse caring behaviors, which is higher than the study done in Ghana [20], Pakistan [1], and India [21]. However, this finding was lower than the study conducted in Debre Markos [15]. The discrepancy might be due to the use of different tools, such as the 26-item Newcastle Patient Experience with Nursing Care Scale used in the previous study [22]. The discrepancy in Ghana might be due to differences in socio-demographic characteristics and infrastructure. The inconsistency in Pakistan might be due to differences in socio-demographics and sample sizes, with the former having a small sample size. This finding indicates a high proportion of patients perceived poor nurse caring behaviors, highlighting the need for nurses to improve their practice and uphold nursing standards to achieve better patient outcomes.

We found that patients who stayed in the ward for more than six days were more likely to perceive poor nurse caring behaviors compared to those who stayed for less than five days. This study was similar to the study performed in South Wollo [23], Debre Markos [15], and India [21]. This might be due to prolonged hospital stays, which can negatively impact patient care, increase the risk of violence and aggression, and cause stress for patients requiring unscheduled time off [24]. On the other hand, patients whose educational level was secondary school had poor perceptions of nurse caring behaviors as compared to those who were unable to read and write. This could be because people with higher educational levels have high expectation of standardizing nursing service.

In addition, times spent with nurses were significantly associated with patients' perceptions of nurse caring behaviors. Patients who spent less than 30 minutes with nurses were two times more likely to be perceived as poor as compared to patients who spent more than 30 minutes with them. This finding supports the idea that poor nurse-patient interactions contribute to dissatisfaction and negatively influence patients' perceptions of nurse caring behaviors [25, 26].

In this study, the residence of the patient was significantly associated with patients' perceptions of nurse caring behaviors. The odds of poor perceptions of nurse caring behaviors among urban residents were more likely as compared to rural residents. This study was similar to the study done in South Wollo [23]. This might be related to awareness and access to health information, as there is mass media availability among urban residents.

Limitations of the study

Due to the cross-sectional nature of the study, it is difficult to establish cause-and-effect relationships between the independent and dependent variables. Social desirability bias might be a limitation due to patients' rating their previous interaction with nurses, which could lead to some bias due to fear of getting service for the future. To reduce this bias, data collectors were selected out of the study area.

Conclusion

This study showed that 37.4% of patients perceived poor nurse caring behavior. Waiting day in wards, educational level, resident, and time spent with nurses were determinants of patients' perceptions of nurse-caregiving behavior. Nurses' caring behavior is a cornerstone of quality healthcare, reflecting the essence of nursing practice and significantly influencing patient outcomes and satisfaction. This research has the potential to raise nurses' consciousness and promote patient-centered care.

Recommendations

Hospital management should place greater emphasis on the nursing profession because nurses encounter all aspects of patient problems. They should provide appropriate strategies to increase patients' positive perception toward nursing care by filling gaps and providing scheduled training for nurse professionals. Future researchers should consider a qualitative method to gain deeper insights into patients' perceptions of nurse caring behavior.

Abbreviations

AOR: adjusted odd ratio; COR: crude odd ratio; CBI: Care Behavior Inventory; DTCSH: Debre Tabor Comprehensive Specialized Hospital.

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Availability of data and materials

The data used in this study are available from the corresponding author upon reasonable request.

Declarations

Ethics approval and consent to participate

Ethical approval for the research was obtained from Debre Tabor University's ethical review committee with *Ref.No RP/ 278/23*. The patient was informed, and written consent was obtained from each participant. The participants were not needed to write their names on the questionnaires. The respondents were informed that they had the right to refuse the interview. This study was conducted following the ethical standards of the Declaration of Helsinki.

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Contributions

Mengistu Ewunetu, Yirgalem Abere, Astewle Andargie Baye and Yohannes Tesfahun kassie worked on developing the research idea; designing the study; being involved in writing, training and supervising the data collectors; analyzing and interpreting the results; and preparing the manuscript. Melese Kebede Hailu, Sheganew Fetene, Bekalu Mekonen Belay, Gebrehiwot Berie Mekonen, and Mulu Kebede critically revised the proposal, participated in its design, analysis and interpretation of the results, and wrote the manuscript. All the authors were involved in reading and approving the final manuscript. Mengistu Ewunetu serves as the guarantor of this study and takes full responsibility for its accuracy and integrity. The study was conducted in accordance with ethical guidelines, ensuring the validity of data collection, analysis, and interpretation.

Consent for publication

Not applicable.

Competing interest

The authors declare that they have no competing interests.

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APPENDIX

Supplementary 1

Supplementary 2

Part I. Questionnaire: Socio-demographic-related factors of the respondents in Debre Tabor comprehensive specialized hospitals

1. Sex

   Female ☐ Male ☐

2. Age

   18-34 ☐ 35-64 ☐ 65 & above ☐

3. Residence

   Urban ☐ Rural ☐

4. Marital status

   Single ☐ Married ☐ Divorced ☐ Widowed ☐

5. Education status

   Can't read and write ☐ Primary school ☐ Secondary ☐ College & above ☐

6. Occupation

   Farmer☐ governmental ☐ private☐ merchant ☐

7. Types of ward

   Medical ☐ Surgical ☐ Orthopedics ☐

8. Spent time with nurses

   <30 minutes ☐ > 30 minutes ☐

9. Length of stay in days in the ward 1-5 ☐ 6-10 ☐ 11-14 ☐ above 15 ☐

Part II questionnaire: Patients' experience of nursing care behavior in Debre Tabor Comprehensive Specialized Hospitals

subscale	Care behavior	1 = never,	2 = almost	3= sometimes	4 = usually,	5=often,	, 6 = always
1	**Knowledge and Skills**						
Q11	Knowing how to give shots, intravenous line						
Q12	Being confident with the patient						
Q13	Demonstrating professional knowledge and skill						
Q14	Managing equipment skillfully						
Q15	Treating patient information confidentially						
2	**Assurance of Human Presence**						
Q21	Returning to the patient voluntarily						
Q22	Talking with the patient						
Q23	Encouraging the patient to call if there are problems						
Q24	Responding quickly to the patient´s calls						
Q25	Helping to reduce the patient´s pain						
Q26	Showing concern for the patient						
Q27	Giving the patient´s treatments and medications on time						
Q28	Relieving the patient´s symptom						
3	**Respectful Deference of Others**						
Q31	Attentively listening to the patient						
Q32	Treating the patient as an individual						
Q33	Supporting the patient						
Q34	Being empathetic or identifying with the patien						
Q35	Allowing the patient to express feelings about his/her disease and						

	treatment						
Q36	Meeting the patient`s stated and unstated needs						
4	**Positive Connectedness**						
Q41	Giving instructions or teaching the patient						
Q42	Spending time with the patient						
Q43	Helping the patient grow						
Q44	Being patient or tireless with the patient						
Q45	Including the patient in planning his/her care						