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The Level of Compassionate Care and Its Associated Factors Among Healthcare Workers Working in Selected Public Hospitals in Mwanza Region: A Cross – Sectional Study

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Abstract

Background

Compassionate care is an essential component of quality healthcare and involves responding to patients with empathy, respect and understanding. However, evidence on the level of compassionate care among healthcare workers in Tanzania remains limited. This study assessed the level of compassionate care among healthcare workers working in selected public hospitals in Mwanza region, Tanzania.

Methods

A quantitative cross-sectional study was conducted among 400 healthcare workers working in four selected public hospitals in Mwanza region, Tanzania. Data were collected using an adapted 12 item Schwartz Center Compassionate Care Scale tool with responses measured on a five-point Likert scale. Descriptive statistics were used to determine the level of compassionate care. Ordinal logistic regression analysis was performed to identify the factors associated with the level of compassionate care. The multivariable ordinal logistic regression included relevant participant, professional, perceived patient-related and organizational factors. Adjusted odds ratios (AORs), 95% confidence intervals (CIs) and p-values were used to assess the strength and the statistical significance associations between the independent variables and the outcome variable (level of compassionate care).

Results

The overall mean compassionate care score was 2.80 (SD 0.99) out of 5, corresponding to 56% of the maximum possible score. Overall, 21.0% of healthcare workers had very low, 29.5% low, 17.2% moderate, 22.0% high and 10.2% very high levels of compassionate care. In the multivariable ordinal logistic regression analysis, higher levels of compassionate care were significantly associated with having heard about compassionate care (AOR = 1.81, 95% CI: 1.08–3.03; p = 0.023), having received compassionate care training (AOR = 2.67, 95% CI:1.48–4.81; p = 0.001), feeling good when acting compassionately (AOR = 2.71, 95% CI: 1.49–4.93; p = 0.001), good patients behavior (AOR = 2.37, 95% CI: 1.47–3.82; p < 0.001), leadership promotion of compassionate care (AOR = 3.47, 95%CI: 2.10–5.75; p < 0.001) and adequate time for compassionate care provision (AOR = 1.95, 95% CI:1.13–3.38; p = 0.016). Perceived sufficiency of staffing was inversely associated with compassionate care (AOR = 0.39, 95%CI: 0.21–0.70; p = 0.002).

Conclusions

The level of compassionate care among healthcare workers in selected hospitals in Mwanza region was moderate, with half of the healthcare workers reporting low or very low levels of compassionate care.

Awareness and training on compassionate care, supportive leadership, positive patients' behavior and adequate time for patient care as perceived by healthcare workers were associated with higher levels of compassionate care. Strengthening these areas while addressing staffing challenges may contribute to improved compassionate care provision in the public hospitals in Tanzania.

1.0 Background/Introduction

Over the past decade, compassionate care has gained increasing recognition as a fundamental component of quality healthcare. Healthcare professionals, including nurses, doctors, midwives, clinical officers, researchers, educators, and all other health personnel are now expected not only to provide technically competent services but also to deliver care with empathy and compassion in response to the evolving expectations of patients, families, and communities. Evidence indicates that patients feel more supported and respond more positively to treatment when healthcare providers demonstrate compassion in their daily practice (1, 2). Practically, compassionate care requires the healthcare practitioner to put himself or herself in the position of the patient, see through his or her eyes, be aware of his or her misery, and take conscious steps to ease miseries. Cultural, religious, social and personal values may influence the expression and experience of compassionate care (3).

According to the World Health Organization (WHO, 2016), compassionate care in facility-based childbirth is vital in protecting the well-being and health of mothers and newborns. This care also enhances confidence in health systems and promotes further interaction with health services. In developed countries, compassionate care is highly practiced within the health systems compared to developing countries, for example in the United States, 85% patients believed that when treated with compassionate care when attended clinical settings, patients will have better healthcare outcomes, while physicians believed that compassionate care improves health outcomes by 78% (1, 2, 4, 5). In most sub-Saharan nations, however, such compassionate care practices are still not the best even though they have been emphasized in international healthcare guidelines. Indicatively, a research study in Ethiopia established that compassionate and respectful maternity care was only given to 52.5% of the women, which constituted a gap leading to the abuse of the right and underutilization of maternity services by the patients (6). In contrast to a study in Addis Ababa, Ethiopia in 2022 that found the prevalence of compassionate care among healthcare professionals to be 48.0% (5), a study in North Shewa found the prevalence of compassionate care across the healthcare workforce to be even lower at 38.8%(7). In addition to that, an assessment of model health facilities, where the Ministry of Health had implemented certain training programs on compassionate and respectful care shown a higher prevalence of compassionate care of 60.4%, which showed positive effect of structured interventions (8). Moreover, a study in Bahir Dar, Ethiopia, of maternal healthcare revealed a prevalence of 57% compassionate care in childbirth, implying that this might not be consistent across all service types and populations served (9). Nevertheless, a study in Hawassa city reported a worrying scenario, in which 63.5 percent of mothers said they had received disrespect and abuse during childbirth, underscoring considerable shortcomings in the exercise of compassionate care in certain regions. (10). Similarly, in South Africa, women reported that poor staff attitudes discouraged them from seeking and using facility-based delivery services (11). Likewise, the Tanzanian evidence suggests substantial deficits. The results of a study of facility -based childbirth indicated that over 70% of women were disrespected and abused in some form or the other, which depicts acute shortcomings of caring practices among HCWs in healthcare facilities (12). There have been numerous reports and studies that have been conducted in Mwanza region indicating that there are frequent cases of disrespect and abuse especially in maternity wards. Poor communication,

long waiting periods, and favouritism are some of the factors that patients complain about that compromise the principle of compassionate and patient - centred care. (13).

Although its importance has been acknowledged, the systematic application of compassionate care in clinical environments is still a major challenge. This is of special concern to frontline healthcare workers, including nurses, midwives and clinicians, who have the greatest contact with patients in hospitals and clinics. Cases of patient dissatisfaction are usually associated with a feeling of ineffective emotional support, lack of good communication and lack of empathy in the process of care (2)

Despite its recognized importance, evidence suggests that compassionate care provision in Tanzania, including Mwanza Region, remains suboptimal. Reports of disrespectful and abusive care among pregnant women attending reproductive and child health (RCH) services continue to raise concerns. Many studies documented patients' experiences with limited evidence on healthcare workers' perspectives on the level of compassionate care and the factors influencing its delivery. In Tanzania, there is a scarcity of evidence on the level of compassionate care among healthcare workers and little is known on the individual, patient-related and health-system factors that influence its provision in public hospitals. Hence, the lack of context-specific evidence limits the ability of policymakers, hospital managers and educators to develop targeted interventions that results in the promotion of compassionate care and improving the quality of healthcare services.

Therefore, providing evidence on the current level of compassionate care and identifying its associated factors among healthcare workers is essential as this evidence will serve as a reference for designing, implementing and evaluating the interventions that will help in strengthening compassionate care across health facilities in Tanzania. The evidence may inform policymakers, hospital managers and all other stakeholders in developing targeted strategies, training programs and supportive policies to strengthen compassionate care within health facilities. Fortunately, improving compassionate care has the potential to enhance patient experiences, quality of care and health outcomes and while promoting a more patient centred healthcare system in Tanzania. Therefore, this study aimed to assess the level of compassionate care and its associated factors among healthcare workers in selected public hospitals in Mwanza region, Tanzania.

2.0 Methods

2.1 Study Design

A facility-based quantitative cross-sectional study design was employed. Data were collected at a single point in time to assess the level of compassionate care among healthcare workers in Mwanza Region. This design was considered appropriate because it was cost-effective, enables estimation of the level of compassionate care, and allows identification of associated factors without manipulation of variables (14).

2.2 Study Setting

This study was conducted in Mwanza Region, located in the northern part of Tanzania from November 2025 to April 2026. According to the 2022 National Population and Housing Census, Mwanza Region had an estimated population of 3,699,872 people (National Bureau of Statistics, 2022). As the second most developed city in Tanzania after Dar es Salaam, Mwanza is equipped with various levels of healthcare facilities, including a zonal referral hospital, a regional referral hospital, district hospitals, health centers, dispensaries, and polyclinics. However, the distribution of healthcare services and personnel was uneven, with urban areas having more facilities and healthcare workers compared to rural areas (15)(16). The study was conducted in four selected public hospitals within Mwanza Region: Bugando Medical Center (BMC), a zonal referral hospital; Sekou-Toure Regional Referral Hospital (SRRH); Nyamagana District Hospital; and Misungwi District Hospital. The number of study participants varied according to the size and service capacity of each facility, as follows: BMC (160 participants), SRRH (100 participants), Nyamagana District Hospital (80 participants), and Misungwi District Hospital (60 participants).

2.3 Study Population

The target population for this study consisted of all healthcare workers in Mwanza Region. The study population comprised healthcare workers employed at the selected healthcare facilities, namely Bugando Medical Center, Sekou-Toure Regional Referral Hospital, Nyamagana District Hospital, and Misungwi District Hospital.

Healthcare workers who were on duty during the data collection period and who provided informed consent to participate were included in the study.

Healthcare workers who were on leave during the study period, including days off, maternity leave, holidays, and excuse days, were excluded.

2.4 Sample Determination

The sample size was determined using a single population proportion formula with a 95% confidence interval:

$$n = \frac{Z^2 \times P(1-P)}{E^2}$$

Where:

- *n* = required sample size
- *Z* = standard normal value at 95% confidence interval (1.96)
- *P* = expected population proportion based on previous studies
- *E* = margin of error (5% or 0.05)

An expected proportion of 38.8% (P = 0.388) was adopted based on a similar study conducted in Addis Ababa, Ethiopia (7). The sample size was determined using a single population proportion formula with a 95% confidence interval:

$$n = \frac{Z^2 \times P(1-P)}{E^2}$$

Where:

- *n* = required sample size
- *Z* = standard normal value at 95% confidence interval (1.96)
- *P* = expected population proportion based on previous studies
- *E* = margin of error (5% or 0.05)

An expected proportion of 38.8% (P = 0.388) was adopted based on a similar study conducted in Addis Ababa, Ethiopia (7)

$$n = \frac{\left(1.96\right)^2 \times 0.388(1-0.388)}{\left(0.05\right)^2}$$

The calculated sample size was 364 participants. To account for a potential non-response rate, 10% of the sample size was added (36 participants). Therefore, the final sample size was 400 healthcare workers.

2.5 Sampling Procedure

A multistage sampling technique was employed to ensure representativeness, feasibility, and adequate coverage of different levels of healthcare delivery within Mwanza Region.

Stage One: Selection of Hospitals

Four hospitals were purposively selected to represent different tiers and geographical settings of healthcare delivery. The selection considered healthcare system level (tertiary, regional, and district), geographical location (urban and rural), patient load, facility capacity, and organizational characteristics. The selected hospitals were Bugando Medical Center, Sekou-Toure Regional Referral Hospital, Nyamagana District Hospital, and Misungwi District Hospital.

Bugando Medical Center (BMC): A zonal referral and teaching hospital providing tertiary care services. Sekou-Toure Regional Referral Hospital (SRRH): A regional referral hospital providing secondary-level care. Nyamagana District Hospital: An urban district hospital providing primary and secondary healthcare services. Misungwi District Hospital: A rural district hospital representing healthcare delivery in resource-limited settings.

Stage Two: Proportional Allocation of Participants

The proportionate allocation of participants was according to the size and service capacity of each hospital: BMC (160), SRRH (100), Nyamagana District Hospital (80), and Misungwi District Hospital (60). This proportional representation provided a fair representation and reduced sampling bias.

Stage Three: Simple Random Sampling of Participants

In every hospital, human resource records and duty rosters were consulted to get lists of eligible healthcare workers. The lottery method of simple random sampling was adopted in choosing the study participants.

Figure 1: The sampling procedures that were applied to obtain the total number of participants

2.6 Study Variables

2.6.1 Dependent Variable

The primary outcome variable was the level of compassionate care provision among healthcare workers. Compassionate care was assessed using the adapted 12-item Schwartz Center Compassionate Care Scale (SCCCS) (17), each of the 12 items was rated on a five-point Likert scale ranging from 1-Never (the behavior is completely absent), 2-Rarely (The behavior happens infrequently but more than zero), 3-Sometimes (The behavior happens on regular mix of occasions or about half the time), 4-Often (The behavior happens frequently but not continuously) to 5-Always (The behavior happens every single time).

The overall level of compassionate care score was calculated using average of all responses across all 12 items of SCCCS. This was achieved in four steps, as follows; **Step 1** – Calculate total participants' score for each individual (here minimum score = 12 and maximum score = 60), then **Step 2** – Calculate the mean (average) score of each participant by dividing the total score in step by the number of items which is 12 (here take minimum = 12/12 = 1 and maximum = 60/12 = 5), then **Step 3** – Calculate the overall study mean/average (here take sum of all means from step 2 then divide by number of participants, in our study n = 400) and finally **Step 4** – Convert the overall mean score to percentage by taking overall mean score divide by 5 (total number of Likert Points) times 100%.

2.6.2 Independent Variables

The independent variables were adapted from selected literature and based on the study objectives and were grouped into four domains, namely:

Socio-demographic Characteristics; these included age, sex and marital status. **Professional Information** included current level of education, health profession or cadre, years of work experience and name of healthcare facility where the participant worked. **Compassion-related factors** included awareness of compassionate care, previous formal training on compassionate care and whether healthcare workers reported feeling good when providing compassionate care to patients.

Patient-related factors included healthcare workers' perceptions of patients' compliance with treatment recommendations, patients' behavior toward healthcare workers and whether patients' and their families had realistic expectations regarding the healthcare services provided.

Organizational and work environment factors included healthcare workers' perceptions of leadership support for compassionate care, adequacy of staffing, availability of time to provide compassionate care, adequacy of working environment and equipment, workload and the presence of institutional support mechanisms that facilitate compassionate care delivery.

All of these independent variables were measured using structured questionnaire items and were analyzed to determine their association with the level of compassionate care provision among healthcare workers.

2.7 Data Collection Instruments

Data were collected using a structured questionnaire developed specifically for this study based on a review of relevant literature and informed by previously published instruments (5, 9, 17–19). The questionnaire was designed to collect information on socio-demographic characteristics, patient-related factors, health-system-related factors and compassionate care practices among healthcare workers.

The questionnaire consisted of five sections:

Section A: Socio-demographic characteristics, including health facility, working department, age, gender and marital status.

Section B: Professional characteristics, including profession, highest level of education, years of professional experience, awareness of compassionate care, previous training on compassionate care and healthcare workers' perceptions of acting compassionately towards patients.

Section C: Patient-related factors, including patients' compliance with medical advice, patients' behavior towards healthcare workers and the perceived reasonableness of patients' and families' expectations.

Section D: Health-system-related factors, including leadership support for compassionate care, adequacy of resources in the working environment, availability of adequate time to provide compassionate care and adequacy of staffing for provision of healthcare services with compassionate care.

Section E: Compassionate care practices, consisting of 12 items informed by 12-item Schwartz Center Compassionate Care Scale (SCCCS). The items were adapted and reworded to assess healthcare workers self-reported compassionate care practices within the context of the present study. The items assessed behaviors including showing respect, providing understandable information, communicating results sensitively and in timely manner, treating patients as individuals, attentively listening, involving patients in decisions, gaining patients' trust, considering the impact of illness, discussing sensitive

issues, responding to sensitively patients' concerns, spending sufficient time with patients and striving to understand patients' concerns.

Each compassionate-care item was rated on a five-point Likert scale ranging from 1 = Never to 5 = Always. The questionnaire was developed in English and translated into Swahili to accommodate participants' language preferences. The questionnaire was pre-tested during pilot study to assess its clarity, comprehensibility, cultural appropriateness and applicability. Following pilot testing, minor modifications were made to the wording sequence of some items without changing the number of items or the underlying constructs assessed. The final English-language version of questionnaire is provided as Supplementary File 1.

2.8 Validity and Reliability

2.8.1 Validity

Content validity was assessed during the development of the questionnaire through a review of relevant literatures and expert assessment. Experts in nursing and public health reviewed the questionnaire for relevance, clarity, comprehensiveness and appropriateness of the items to the study objectives and context. The 12 compassionate care items were also reviewed to ensure that they adequately represented the relevant domains of compassionate care described in the literature and the SCCCS. Feedback from the expert review was used to refine the wording organization of the questionnaire before pilot testing.

2.8.2 Reliability

A pilot study was conducted among healthcare workers at Ilemela District Hospital, which was not included in the main study, to assess the clarity, consistency and applicability of the questionnaire. The pilot site had organizational structures, staffing patterns and services delivery characteristics comparable to those of the district hospitals included in the main study.

Internal consistency of the 12-item compassionate-care scale was assessed using Cronbach's alpha based on the pilot study data. The scale demonstrated good internal consistency, with a Cronbach's alpha of 0.958, supporting its use in the main study.

Feedback from pilot participants was also used to identify items that required minor clarification or recording. These modifications did not change the number of items or the fundamental constructs assessed by the questionnaire. Overall, the pilot testing indicated that the questionnaire was understandable, contextually appropriate and feasible for the administration among healthcare workers in the study setting.

2.9 Data Collection Procedures

2.9.1 Training of Research Assistants

Research assistants were trained before data collection to promote standardized and high-quality administration of questionnaire across all study sites. The training covered the study objectives, ethical considerations, informed consent procedures, participant confidentiality, administration of the questionnaire and procedures for providing neutral clarification when required.

Although the questionnaire was primarily self-administered, research assistants were trained to provide clarification or guidance when participants required assistance, without suggesting answers or influencing participants' responses. The importance of maintaining confidentiality, minimizing assistant influence and following the study protocol consistently was emphasized.

All training sessions were facilitated by the principal investigator to ensure consistency in instructions and procedures across the four study hospitals.

2.9.2 Data Collection Process

Following training of research assistants, data collection was conducted at each of the four selected hospitals. Selected healthcare workers were provided with the questionnaire self-administration. Participants completed the questionnaire independently except where the participants required clarification because of the difficulty understanding an item or other practical considerations, trained research assistant provided standardized and neutral clarification without influencing participants' responses.

The principal investigator supervised data collection process across all sites. Completed questionnaires were checked daily for completeness and consistency by the principal investigator and the collected date were securely stored to maintain confidentiality and data integrity.

2.10 Data Management

The data were cleaned, coded and analyzed using SPSS version 27. The socio-demographic, professional, organizational and patient-related characteristics were summarized with the help of descriptive statistics in terms of frequencies, percentages, means and standard deviations.

Bivariate analysis was done to determine relationships between independent variables and level of compassionate care. Categorical variables were tested with chi-square tests and independent samples t-tests were used to determine the difference in the score of compassionate care between two independent groups. The t-test was used to determine whether the differences in the mean scores were statistically significant and could not have come about due to chance.

Variables with a p-value of less than 0.20 were taken to a multivariate ordinal logistic regression model. The use of ordinal logistic regression was due to the ordinal nature of the outcome variable (level of compassionate care). The model was able to identify independent predictors of compassionate care without the interference of confounding factors. Adjusted Odds Ratios (AORs), with 95% Confidence Intervals (CIs) and p-values were used to report the results. The proportional odds assumption was evaluated to ensure that the models were suitable.

For all analyses, a two-tailed p-value < 0.05 was considered statistically significant. Findings were presented using appropriate statistical measures, including means, standard deviations, test statistics, odds ratios, confidence intervals, and p-values.

The methodology chapter was summarized as it appears in Fig. 2.

2.11 Ethical Consideration

Ethical approval

and permission to conduct this study were obtained from the National Institute for Medical Research (NIMR) through its Lake Zone Institutional Review Board (LZIRB), Mwanza (Ref. No. MR/53/100/828). LZIRB as the zonal office reviewed and approved the study in accordance with national and international accepted ethical standards. Permission to publish the study findings was subsequently obtained from NIMR headquarters (Ref. No. BD.242/437/01D/197). The administrative permission to conduct the study in Mwanza region was granted by RAS through RMO (Ref. No. FA.137/264/01) followed by institutional permissions from the four selected public hospitals: Bugando Medical Center, Sekou-Toure Regional Referral Hospital, Nyamagana DH and Misungwi DH.

Written informed consent was obtained from each participant before data collection. Participants were informed about the study objectives, procedures, potential benefits and risks and their right to decline participation or withdrawal from the study at any time without consequences. Confidentiality and anonymity were maintained throughout the study. No personal identifying information was collected and unique identification codes were used. Therefore, the study was conducted with the accordance of national and international ethical requirements.

3.0 Results

A total of 400 healthcare workers participated in this study from four selected public hospitals in Mwanza region, yielding a response rate of 100%. The findings are presented according to participants' characteristics, the level of compassionate care and factors associated with compassionate care provision.

3.1 Participants' Characteristics

3.1.1 Socio-Demographic Characteristics

The majority of the participants were female (53.3%) and aged 31–49 years (44.3%). Most of the participants were married or living with a partner (60.8%), and almost one-third were single (32.3%) (Table 1).

Table 1
Distribution of Age Group, Gender, and Marital Status among Participants

Variable	Category	Frequency (N)	Percent (%)
Age Group	Less or Equal to 20 Years	3	0.8
	21–30 Years	119	29.8
	31–40 Years	177	44.3
	Above 40 Years	101	25.3
Gender	Male	187	46.8
	Female	213	53.3
Marital Status	Single	129	32.3
	Married or Living Together	243	60.8
	Widow/Widower	14	3.5
	Separated/Divorced	14	3.5

3.1.2 Professional Related Characteristics

Nurses formed the largest group among the study participants (41.8%) followed by medical doctors (15.3%). Nearly half (46.3%) had diploma level of education, while 36.0% had worked for 5–10 years (Table 2).

Table 2
Distribution of Participants based on Professional Characteristics

Variable	Category	Frequency (N)	Percent (%)
Your Professional	Nurse	167	41.8
	Midwife	32	8.0
	Clinical Officer	32	8.0
	Medical Doctor	61	15.3
	Pharmaceutical/Pharmacy Personnel	35	8.8
	Laboratory/Radiology Personnel	28	7.0
	Medical Attendant/Health Assistant	45	11.3
Education Level	Certificate	80	20.1
	Diploma	185	46.3
	Bachelor Degree	122	30.5
	Postgraduate Diploma	5	1.3
	Postgraduate Degree	8	2.0
Years of Experience	Less Than 5 Years	119	29.8
	5–10 Years	144	36.0
	11–20 Years	97	24.3
	21–30 Years	27	6.8
	Above 30 Years	13	3.3

3.1.3 Awareness, training and attitudes towards compassionate care

Less than half of the healthcare workers (48.3%) reported having heard about compassionate care whereas only 23.8% of all healthcare workers had participated in this study had received training on compassionate care. Nevertheless, the majority of all participants (81.8%) agreed that they felt good when providing care with compassion to patients (Table 3)

Table 3
Awareness, training and attitudes towards compassionate care among healthcare workers (N = 400)

Variable	Category	Frequency (n)	Percent (%)
Heard about Compassionate Care	Yes	193	48.3
	No	207	51.7
Received Training on Compassionate Care	Yes	95	23.8
	No	305	76.3
Feeling Good When Acting Compassionately to Patients	Agree	327	81.8
	Disagree	73	18.3

3.2 Patient – Related Factors reported by healthcare workers

Table 4 summarizes healthcare workers' perceptions of patient related factors. Nearly two-thirds (62.7%) agreed that patients complied with medical advice, whereas more than half of the participants (55.5%) reported that patients generally demonstrated good behavior. However, only 29.3% of HCWs perceived patients' and families' expectations are realistic, while the majority (70.8%) disagreed

Table 4
Patient – related characteristics influencing compassionate care among healthcare workers (N = 400)

Variable	Category	Frequency (n)	Percent (%)
Patients Comply with Medical Advice	Agree	251	62.7
	Disagree	149	37.3
Patients Generally Demonstrate Good Behavior	Agree	222	55.5
	Disagree	178	44.5
Patients' and Families Expectations are Realistic	Agree	117	29.3
	Disagree	283	70.8

3.3 Organizational factors related to compassionate care reported by healthcare workers

Regarding organizational factors as reported by healthcare workers, 203 (50.7%) agreed that hospital leadership promoted compassionate care. Most of participants reported inadequate time for providing care with compassion (71.5%) and most of healthcare workers reported insufficient staffing (77.3%). (Table 5)

Table 5
Distribution of Participants based on Hospital-Related Characteristics

Variable	Category	Frequency (N)	Percent (%)
Hospital Leadership Promote Compassionate Care	Agree	203	50.7
	Disagree	197	49.3
Always Have Adequate Time for Compassionate Care Provision	Agree	114	28.5
	Disagree	286	71.5
Staff Number Adequate for Compassionate Care Provision	Agree	91	22.8
	Disagree	309	77.3

3.4 Level of Compassionate Care

3.4.1 Overall Level of Compassionate Care

The overall level of compassionate care was assessed using 12-item Schwartz Center Compassionate Care Scale (SCCCS). Each item was rated a five-point Likert scale ranging from 1 (Never) to 5 (Always). All 400 healthcare worker participants completed the questionnaire, resulting in a complete dataset with no missing responses.

The overall mean compassionate care score was found to be 2.80 (SD = 0.99), with observed score ranging from 1.17 to 4.92. This mean score corresponded to 56.0% of the maximum possible score, indicating a moderate level of compassionate care according to predefined classification criteria (2.5–3.5). The observed relatively large standard deviation suggests considerable variability in compassionate care practices among healthcare workers. The descriptive statistics of the score was as presented in the Table 6.

Table 6
Descriptive Statistics and Classification of Compassionate Care Scores (N = 400)

Indicator	Value
Mean compassionate care score	2.80
Standard deviation	0.99
Observed minimum	1.17
Observed maximum	4.92
Mean score (%)	56.0%
Level of compassionate care	Moderate

3.4.2 Level of Compassionate Care by Health Facility

The average of level of compassionate care differed among health facilities. Bugando Medical Centre had the best mean score (Mean = 2.92, SD = 0.96) followed by Sekou Toure Regional Referral Hospital with the mean score of (Mean = 2.89, SD = 0.95). The hospital in Misungwi District had a moderate average score (mean = 2.76, SD = 1.09) but it had the highest variation in answers. The lowest mean score was at Nyamagana District Hospital (Mean = 2.49, SD = 0.97). (Fig. 3)

3.4.3 Level of Compassionate Care by Working Departments

The mean score of compassionate care differed across hospital departments involved in the study. The Supervision and management department scored the highest compassionate care score (3.58 +/- 0.71), while laboratory and radiology department reported the lowest mean compassionate care score (2.05 +/- 0.82) as shown in the Fig. 4.

3.5 Item-Level Implementation of Compassionate Care (N = 400)

As summarized in Tables 7 and 8, the item-level analysis of each of the 12 compassionate care components as measured by the SCCCS was conducted. Mean scores were calculated for each item to determine the extent to which the specific compassionate care behaviours were practiced by healthcare workers. This analysis highlighted areas of strength and aspects which requires improvement in compassionate care practices. The findings were presented as follows;

1. Respect for Patients

The respect for patients demonstrated the highest level of implementation among the 12 SCCCS items, with a mean score of 3.26 out of a 5.00 possible score (SD = 1.12). Overall, 39.9% of healthcare workers reported that they often (22.0%) or always (17.8%) treated patients with respect, while only 3.2% reported never doing so.

2. Providing Information in an Understandable Way

This item, providing information in a manner that patients could easily understand showed a moderate level of implementation (Mean = 2.88, SD = 1.12). The largest proportion of respondents reported rarely practicing this behaviour, while 28.0% reported sometimes doing so and only 11.2% reported always.

3. Communicating Results Timely and Sensitively

Timely and sensitive communication of clinical results to patients by healthcare workers had a relatively low level of implementation with mean score of 2.62 (SD = 1.22). whereby more than half of the respondents (50.2%) reported never (21.5%) or rarely (28.7%) communicating results in a timely and sensitive manner, whereas only 7.2% reported always doing so.

4. Treating Each Patient as an Individual

The mean score of the responses on treating patients as individuals was moderate (Mean = 2.90, SD = 1.24). Despite the fact that 29.2% of the respondents said they often or always practiced individualized care, 42.2% said that they never or rarely did so.

5. Listening Attentively

Listening is a mean score of 2.85 (SD = 1.17). Although 29.2% of the respondents said that they had often or always listened carefully to their patients/clients as they attended to or cared for them, 33.5% said that they had rarely done so.

6. Involving Patients in Care Decisions

The degree of involvement of patients in care decisions was moderate and suboptimal with mean = 2.76 (SD = 1.21). Even though 30.8% said that they sometimes or always involved patients, 43.8% said they never or rarely did so.

7. Gaining Patient Trust

Gaining of patient trust was moderately implemented (Mean = 2.83, SD = 1.19). In response to this question, only 29.5% said they always or often achieved patient trust and 43.2% said they had never or rarely demonstrated this behaviour.

8. Considering the Impact of Illness on Patients' Lives

By looking at the more expansive effects of illness on the lives of patients had a mean score of 2.79 (SD = 1.27). Although 28.3% of them said they often or always had this kind of behaviour, 46.5% of them said they never or rarely thought of the effect of illness on the life of patients.

9. Discussing Sensitive Issues

One of the episodes of talking about sensitive issues had the smallest average score among all items (Mean = 2.43, SD = 1.24). Most of the respondents (56.5%) indicated that they never or seldom used this

behaviour and only 6.2% indicated that they always discussed sensitive issues with patients.

10. Expressing Sensitivity to Patient Concerns

Sensitivity expressed to the concerns of the patients also demonstrated low implementation (Mean = 2.44, SD = 1.22). Over 55.3% of the respondents said that they had never or rarely participated in this behaviour and 6.2% said always.

11. Spending Time with Patients

Spending time with patients had a mean score of 2.76, SD = 1.22, almost a third (31.8%) of the respondents said that they rarely took sufficient time with their patients with only 11.2% of HCWs reporting that they always spent time with their patients.

12. Striving to Understand Patients' Concerns

Attempts to learn patient concerns revealed that there was a fairly high level of implementation amongst the respondents (Mean = 3.10, SD = 1.17). In total, 36.5% of the healthcare workers said that they frequently or always tried to know what the patient was concerned about, and 30.2% said they never did so.

Table 7
Distribution of Responses on 12 - Compassionate Care Items

COMPASSIONATE CARE IMPLEMENTATION LEVEL (N = 400)					
Compassionate Care Item	**Never** **n= (%)**	**Rarely** **n= (%)**	**Sometimes** **n= (%)**	**Often** **n= (%)**	**Always** **n= (%)**
Respect to patients	13 (3.2%)	100 (25.0%)	128 (32.0%)	88 (22.0%)	71 (17.8%)
Information in understandable way	27 (6.8%)	149 (37.2%)	112 (28.0%)	67 (16.8%)	45 (11.2%)
Communicate results timely & sensitively	86 (21.5%)	115 (28.7%)	95 (23.8%)	75 (18.8%)	29 (7.2%)
Treat each patient as individual	48 (12.0%)	121 (30.2%)	114 (28.5%)	56 (14.0%)	61 (15.2%)
Listen attentively	43 (10.8%)	134 (33.5%)	106 (26.5%)	73 (18.2%)	44 (11.0%)
Involve in care decisions	66 (16.5%)	109 (27.3%)	123 (30.8%)	58 (14.5%)	44 (11.0%)
Gain patient trust	53 (13.2%)	120 (30.0%)	109 (27.3%)	76 (19.0%)	42 (10.5%)
Consider illness impact	64 (16.0%)	122 (30.5%)	101 (25.2%)	58 (14.5%)	55 (13.8%)
Discuss sensitive issues	115 (28.7%)	111 (27.8%)	91 (22.8%)	53 (13.2%)	30 (7.5%)
Express sensitivity to concerns	114 (28.5%)	107 (26.8%)	93 (23.2%)	61 (15.2%)	25 (6.2%)
Spend time with patients	61 (15.2%)	127 (31.8%)	103 (25.8%)	64 (16.0%)	45 (11.2%)
Understand patient concerns	24 (6.0%)	121 (30.2%)	109 (27.3%)	84 (21.0%)	62 (15.5%)

Table 8
Mean Score of 12 - Compassionate Care Items

ITEM-LEVEL MEAN SCORES (ranked lowest to highest)		
Discuss sensitive issues	2.43	SD = 1.24
Express sensitivity to concerns	2.44	SD = 1.22
Communicate results timely & sensitively	2.62	SD = 1.22
Involve in care decisions	2.76	SD = 1.21
Spend time with patients	2.76	SD = 1.22
Consider illness impact	2.79	SD = 1.27
Gain patient trust	2.83	SD = 1.19
Listen attentively	2.85	SD = 1.17
Information in understandable way	2.88	SD = 1.12
Treat each patient as individual	2.90	SD = 1.24
Striving to understand patient concerns	3.10	SD = 1.17
Respect to patients	3.26	SD = 1.12

3.6 Factors Associated with Compassionate Care

Bivariate and multivariate analyses were done to assess factors associated with the level of compassionate care among assessed healthcare workers in Mwanza region. Bivariate analysis was done to assess the association between each independent variable and the outcome/dependent variable separately, while multivariate analysis was conducted to assess the independent effect of multiple variables simultaneously. The crude odds ratio (COR) was used to describe the unadjusted strength and direction of association between the independent and outcome variables while the adjusted odds ratio (AOR) was used to determine whether the association remained significant after controlling for potential confounding factors. Therefore, using both COR and AOR is important because it allowed comparison of the initial observed associations with those that remained associated after adjustment of other relevant variables. Hence, these analyses provided a more reliable understanding of factors independently associated with compassionate care.

3.6.1 Bivariate analysis of factors associated with compassionate care

On bivariate analysis, ordinal logistic regression was carried out separately for each independent variable to assess its association with the ordinal level of compassionate care. Crude odds ratios (CORs), 95% Confidence intervals (CIs) and P-Values were estimated. After analysis, variables with p-

value < 0.20 at bivariate analysis were considered for inclusion in multivariable ordinal logistic regression model. The analysis results showed that health facility, marital status, profession, education level, years of professional experience, awareness of compassionate care, received compassionate care training, feeling good when acting compassionately, patients' compliance with medical advice, patients' good behaviour, realistic expectations of patients and families, leadership promotion of compassionate care, adequacy of the working environment and resources, availability of adequate time, staffing sufficiency and working department met the criterion for consideration in the multivariable analysis. In contrast, age group and gender did not meet the predefined screening criterion based on the individual bivariate analysis.

Several factors at bivariate level analysis demonstrated strong positive associations with higher levels of compassionate care. Participants who had heard about compassionate care had higher odds of being in a higher compassionate care category (COR = 6.32, $p < 0.001$), similarly, those who had received training on compassionate care had higher odds of being in a higher level of compassionate care category (COR = 5.40, $p < 0.001$). participants who reported feeling good when acting compassionately to their patients had higher odds of being in a higher level of compassionate care category (COR = 5.80, $p < 0.001$). Similarly, healthcare workers' perceptions that patients complied with medical advice (COR = 5.80, $p < 0.001$), patients generally demonstrated good behaviour (COR = 5.66, $p < 0.001$), patients and their families had realistic expectations (COR = 3.42, $p < 0.001$), leadership promoted compassionate care (COR = 7.40, $p < 0.001$), the working environment and resources were adequate (COR = 5.29, $p < 0.001$) and adequate time was available for compassionate care provision (COR = 5.04, $p < 0.001$) were all associated with higher levels of compassionate care. Working department was also associated on bivariate analysis, particularly among participants working in paediatrics, laboratory/radiology and pharmacy compared with supervision/management. (Table 9).

Table 9
Bivariable Ordinal Logistic Regression Analysis of Factors Associated with Level of Compassionate Care

Variable	Category	COR	p-value
Health facility	BMC vs Misungwi DH (Ref.)	1.45	0.167
	SRRH vs Misungwi DH	1.20	0.531
	Nyamagana DH vs Misungwi DH	0.68	0.201
Age group	< 20 years vs > 40 years (Ref.)	0.66	0.691
	21–30 years vs > 40 years	0.84	0.456
	31–40 years vs > 40 years	0.80	0.313
Gender	Male vs Female (Ref.)	0.83	0.297
Marital status	Single vs Separated/Divorced (Ref.)	1.06	0.913
	Married/Living together vs Separated/Divorced	2.04	0.149
	Widow/Widower vs Separated/Divorced	0.68	0.578
Profession	Nurse vs Health assistant/medical attendant (Ref.)	1.69	0.081
	Midwife vs Health assistant/medical attendant	0.87	0.733
	Clinical officer vs Health assistant/medical attendant	0.67	0.347
	Medical doctor vs Health assistant/medical attendant	1.96	0.055
	Pharmaceutical/pharmacy personnel vs Health assistant/medical attendant	0.95	0.898
	Laboratory/radiology personnel vs Health assistant/medical attendant	0.46	0.078
Education level	Certificate vs Postgraduate degree (Ref.)	0.10	0.001
	Diploma vs Postgraduate degree	0.12	0.002
	Bachelor's degree vs Postgraduate degree	0.22	0.025
	Postgraduate diploma vs Postgraduate degree	0.48	0.477
Years of experience	< 5 years vs > 30 years (Ref.)	0.70	0.501
	5–10 years vs > 30 years	0.97	0.960

Variable	Category	COR	p-value
	11–20 years vs > 30 years	1.05	0.920
	21–30 years vs > 30 years	2.50	0.129
Heard about compassionate care	Yes vs No (Ref.)	6.32	< 0.001
Received training on compassionate care	Yes vs No (Ref.)	5.40	< 0.001
Feeling good when acting compassionately	Agree vs Disagree (Ref.)	5.80	< 0.001
Patients comply with medical advice	Agree vs Disagree (Ref.)	4.37	< 0.001
Patients generally demonstrate good behaviour	Agree vs Disagree (Ref.)	5.66	< 0.001
Patients/families' expectations are realistic	Agree vs Disagree (Ref.)	3.42	< 0.001
Leadership promotes compassionate care	Agree vs Disagree (Ref.)	7.40	< 0.001
Working environment/resources adequate	Agree vs Disagree (Ref.)	5.29	< 0.001
Adequate time for compassionate care provision	Agree vs Disagree (Ref.)	5.04	< 0.001
Staff number sufficient	Agree vs Disagree (Ref.)	2.10	0.001
Working department	Internal medicine vs Supervision/management (Ref.)	0.33	0.136
	Surgery vs Supervision/management	0.42	0.259
	Obstetrics and gynaecology vs Supervision/management	0.25	0.072
	Pediatrics vs Supervision/management	0.18	0.034
	Laboratory/radiology vs Supervision/management	0.07	0.002
	Pharmacy vs Supervision/management	0.17	0.029
	Psychiatry/mental health vs Supervision/management	0.30	0.206

3.6.2 Multivariable ordinal logistic regression analysis of factors associated with compassionate care

After bivariate analysis, a multivariable logistic regression was fitted using variables that met the criteria from the bivariate analysis to identify factors independently associated with the level of compassionate care while controlling for potential confounding between the explanatory variables. Adjusted odds ratios (AORs), 95% confidence intervals (CIs) and p-values were reported. In interpreting the model, statistical significance was considered at a p-value of < 0.05. Therefore, variables with $p < 0.05$ were considered statistically significantly associated with the level of compassionate care after adjustment for other variables in the model. For statistically significant associations, an AOR greater than one indicates higher odds of being in a higher compassionate care category compared with reference category, while an AOR less than one indicates lower odds. Accordingly, awareness of compassionate care, receipt of compassionate care training, feeling good when acting compassionately to patients, patients' good behavior, leadership promotion of compassionate care, adequate time for compassionate care provision and perceived sufficient staffing were interpreted based on their respective p-values and AORs.

Participants who had heard about compassionate care had higher odds of being in higher compassionate care category (AOR = 1.81, 95% CI: 1.08–3.03; p = 0.023), while those who had received compassionate care training had approximately 2.6 times higher odds (AOR = 2.67, 95% CI:1.48–4.81; p = 0.001). similarly, participants who reported feeling good when acting compassionately to their patients also had higher odds of being at a higher level of compassionate care category (AOR = 2.71, 95% CI: 1.49–4.93; p = 0.001).

Perceptions concerning patients and the organizational environment were also important. Participants who agreed that patients generally demonstrated good behavior had higher odds of being in higher compassionate care category (AOR = 2.37, 95% CI: 1.47–3.82; p < 0.001). Similarly, participants who perceived that leadership promoted compassionate care had more than three times the odds of being in a higher compassionate care category (AOR = 3.47, 95%CI: 2.10–5.75; p < 0.001). Having adequate time for compassionate care provision was positively associated with higher compassionate care level (AOR = 1.95, 95% CI:1.13–3.38; p = 0.016). In contrast, perceived sufficient staffing among participants was inversely associated with the level of compassionate care (AOR = 0.39, 95%CI: 0.21–0.70; p = 0.002). This indicates approximately 63% lower odds of being in higher compassionate care category among participants who perceived staffing as sufficient. Health facility, gender, marital status, profession, level of education, patient compliance, realistic expectations of patients and families and adequacy of working environment and resources were not statistically significantly associated with the level of compassionate care after adjustment. (Table 10).

Table 10
Multivariable Ordinal Logistic Regression of Factors Associated with Level of Compassionate Care

Variable	Category	AOR	95% CI	*p*-value	Significance
Health facility	BMC vs Misungwi DH (Ref.)	0.63	0.32–1.23	0.175	No
	SRRH vs Misungwi DH	0.66	0.33–1.32	0.237	No
	Nyamagana DH vs Misungwi DH	1.11	0.55–2.24	0.774	No
Gender	Male vs Female (Ref.)	0.72	0.47–1.08	0.115	No
Marital status	Single vs Separated/Divorced (Ref.)	0.74	0.23–2.44	0.621	No
	Married/Living together vs Separated/Divorced	0.84	0.28–2.51	0.756	No
	Widow/Widower vs Separated/Divorced	0.27	0.06–1.29	0.102	No
Profession	Nurse vs Health assistant/medical attendant (Ref.)	1.71	0.69–4.27	0.247	No
	Midwife vs Health assistant/medical attendant	0.66	0.24–1.85	0.430	No
	Clinical officer vs Health assistant/medical attendant	2.09	0.62–6.98	0.233	No
	Medical doctor vs Health assistant/medical attendant	0.92	0.30–2.88	0.891	No
	Pharmaceutical/pharmacy personnel vs Health assistant/medical attendant	2.29	0.46–11.35	0.310	No
	Laboratory/radiology personnel vs Health assistant/medical attendant	1.10	0.26–4.58	0.894	No
Education level	Certificate vs Postgraduate degree (Ref.)	0.59	0.10–3.45	0.554	No
	Diploma vs Postgraduate degree	0.35	0.07–1.77	0.205	No
	Bachelor's degree vs Postgraduate degree	0.67	0.15–3.01	0.601	No

Variable	Category	AOR	95% CI	*p*-value	Significance
	Postgraduate diploma vs Postgraduate degree	1.03	0.12–9.04	0.977	No
Years of experience	< 5 years vs > 30 years (Ref.)	0.55	0.14–2.18	0.391	No
	5–10 years vs > 30 years	0.57	0.15–2.12	0.401	No
	11–20 years vs > 30 years	0.42	0.11–1.55	0.194	No
	21–30 years vs > 30 years	0.48	0.11–2.03	0.320	No
Heard about compassionate care	**Yes vs No (Ref.)**	**1.81**	**1.08–3.03**	**0.023**	**Yes**
Received CC training	**Yes vs No (Ref.)**	**2.67**	**1.48–4.81**	**0.001**	**Yes**
Feeling good when acting compassionately	**Agree vs Disagree (Ref.)**	**2.71**	**1.49–4.93**	**0.001**	**Yes**
Patients comply with medical advice	Agree vs Disagree (Ref.)	1.44	0.88–2.35	0.149	No
Patients demonstrate good behaviour	**Agree vs Disagree (Ref.)**	**2.37**	**1.47–3.82**	**< 0.001**	**Yes**
Patients/families' expectations realistic	Agree vs Disagree (Ref.)	1.44	0.88–2.35	0.149	No
Leadership promotes CC	**Agree vs Disagree (Ref.)**	**3.47**	**2.10–5.75**	**< 0.001**	**Yes**
Working environment/resources adequate	Agree vs Disagree (Ref.)	1.47	0.85–2.54	0.164	No
Adequate time for CC provision	**Agree vs Disagree (Ref.)**	**1.95**	**1.13–3.38**	**0.016**	**Yes**
Staff number sufficient	**Agree vs Disagree (Ref.)**	**0.39**	**0.21–0.70**	**0.002**	**Yes**

4.0 Discussion

The study assessed the level of compassionate care and its associated factors among healthcare workers working in selected public hospitals in Mwanza region, Tanzania. The overall average score of compassionate care was found to be 2.80 out of 5, equivalent to 56.0% of the maximum possible score, indicating a moderate level of compassionate care based on very low (1.00–1.80), low level (1.81–2.60),

moderate level (2.61–3.40), high level (3.41–4.20) and very high level (4.21–5.00) all scores out of 5. However, 50.5% of healthcare workers were classified as having very low or low level of compassionate care while only 32.2% of participants reported high or very high level of compassionate care. This suggests that despite the fact that compassionate care is practiced among HCWs, it is not yet consistently integrated within routine healthcare delivery daily practices. This finding is comparable to other studies, according to studies done in Ethiopia reported low to moderate levels of compassionate care, including 48.0% level of compassionate care reported in Addis Ababa (5) while in North Shewa reported the level of compassionate care of 38.8% and 57% level of compassionate care reported in Bahir Dar (9). Higher level of compassionate care (60.4%) was reported in Ethiopian facilities where compassionate and respectful care training programme were implemented, this suggests that deliberate institutional interventions may strengthen compassionate care practices.

Awareness and training on compassionate care were significantly associated with higher levels of compassionate care, whereby healthcare workers who had heard about compassionate care had higher odds of reporting a higher compassionate care level (AOR = 1.81, 95% CI: 1.08–3.03, p = 0.023), while those who had received training were also more likely to report higher compassionate care (AOR = 2.67, 95% CI: 1.48–4.81, p = 0.001). This is consistent with evidence from Ethiopia where facilities which were implementing compassionate care training reported higher level of compassionate care practice. Similarly, studies in Iran and Malawi reported that inadequate and limited training were identified as barriers of compassionate care practice among healthcare workers (19–21). Similarly, study done in Qassam University, Saudi Arabia reported that compassionate care simulation education in the workplace for nurses increased their level of compassionate care(22) Therefore, these findings support the evidence that integrating compassionate care into continuing professional development and routine clinical supervision will lead to an increasing in the level of compassionate care practices.

Healthcare workers who reported feeling good when acting compassionately towards patients were more likely to be in a higher level of compassionate care category (AOR = 2.71, 95% CI: 1.49–4.93, p = 0.001), whereby this finding suggests that positive emotional experiences by HCWs while caring for patients may influence compassionate care behaviors. Therefore, when healthcare workers experience meaning and satisfaction from helping patients, they may be motivated to maintain compassionate care interactions. Hence, the finding is supported by the socio-ecological model individual and interpersonal domains, in which personal attitudes and experiences influence behavior (23) Similarly, Ali Asghar meta-analysis study revealed that emotional responsiveness, interpersonal interactions and effective communication skills between nurses and patients were highly associated with higher compassionate care provision (24). Likewise, the study conducted in Isfahan revealed that patient centered emotional discourse was the main issue of concern in shaping and improving compassionate care implementation among nurses (3).

Patient related factors as perceived by healthcare workers were also associated with compassionate care. Healthcare workers who perceived patients as generally demonstrating good behavior had more than twice odds of being in a higher level of compassionate care category (AOR = 2.37, 95% CI: 1.47–

3.82, p < 0.001). However, patients' compliance to medical advice and patients' and families' expectations on care as perceived by healthcare workers were not significantly associated with compassionate care in the adjusted model with (AOR = 1.44, 95% CI: 0.88–2.35, p = 0.149) p = 0.149 for both. Therefore, this study revealed that patients' cooperation with healthcare workers was associated with an increase the level of compassionate care behaviors. Similarly, positive association between patient cooperation and compassionate care is supported by European study among midwives which found that collaborative interactions between midwife and patients improved compassionate care provision (25). Likewise, the finding is consistent with compassionate care model from Iran which emphasized that effective relationships and communication between patients and healthcare workers as important elements of compassionate care (26).

Leadership emerged as the strongest positive organizational predictor of compassionate care provision whereby healthcare workers who reported that hospital leadership promoted compassionate care had more than three times the odds of being in higher level compassionate care category compared with those who disagreed (AOR = 3.47, 95% CI: 2.10–5.75, p < 0.001). The finding is consistent with studies from Iran and Malawi which reported that inadequate managerial and organizational supports as major barriers to compassionate care provision in many health facilities (19, 21). Supportive leadership may influence compassionate care practice via establishment of organizational culture that values patient centered care, supportive supervision, staff recognition and accountability.

Adequate time for provision of compassionate care was also positively associated with higher level of compassionate care. The finding found that healthcare workers who reported having adequate time for compassionate care provision had nearly twice the odds of being in higher compassionate care category compared to those who disagreed (AOR = 1.95, 95% CI: 1.13–3.38, p = 0.016). This is consistent with the study in Iran which reported that workload and limited time can restrict healthcare workers' ability to communicate meaningfully with patients they were caring for (20). Also, according to compassionate care hybrid model on compassionate domains among nurses in Korea revealed that having adequate time enables nurses to practice care with empathy, establish therapeutic relationships and recognize individual needs (27). Compassionate care requires time to listen to patients, understand their concerns, explain care and providing emotional support. Therefore, workload management and service organization may be important components of interventions to strengthen compassionate care.

An unexpected finding showed that there was an inverse association between perceived staffing sufficiency and compassionate care. Healthcare workers who reported that staff numbers were sufficient had lower odds of being in higher level of compassionate care category than those who perceived staffing as insufficient (AOR = 0.39, 95% CI: 0.21–0.70, p = 0.002). This finding contrasts with evidence from Malawi which reported that staff shortages and high workload were reported as major barriers to compassionate care provision (19). The observed association should therefore be interpreted cautiously and should not interpreted to mean that inadequate staffing promotes compassionate care but it may reflect differences in workload distribution, staff responsibilities and management practices

or perceptions of staffing adequacy. Further research using objective staffing and workload measures is needed to clarify this relationship in clinical practice.

These findings have many important implications for healthcare practice in Tanzania. Hospitals should integrate compassionate care training into their continuing professional development and clinical supervision, strengthen leadership support and accountability and communication skills should be strengthened to promote constructive patient provider relationships. These interventions may help move compassionate care from individual expectation to an organizational established component of quality care.

Strengths and Limitations

The study has several strengths. First, it was conducted in four public hospitals which covered various layers of healthcare services from tertiary to primary (district) level, which provided perspectives from healthcare workers working at different levels. Second, it included different healthcare workers cadres including nurses, physicians, clinicians, pharmaceutical personnel, laboratory personnel to health assistants, this provided a broader assessment of compassionate care within a multidisciplinary healthcare team. Third, the study adopted Schwartz Center Compassionate Care Scale, which demonstrated strong internal consistency in this study (Cronbach alpha = 0.9). Finally, the use of ordinal logistic regression enabled analysis to count for the ordinal five-level outcome of compassionate care and to identify associated factors independently associated with higher levels of compassionate care.

Similarly, this study has some limitations that should be considered when interpreting the findings. First, being cross-sectional study design prevents causal interpretation of the observed associations between the identified factors and compassionate care. Second, data collection was self-reported from healthcare workers and may have introduced social desirability bias. Third, the study was carried out in public hospitals excluding private institutions doing similar services. Additionally, the study has some limitations in generalizability to other settings/regions in Tanzania, because it was conducted in selected public hospitals in Mwanza region only. Therefore, future longitudinal studies incorporating patients' perspectives, direct observation and objective measures of staffing and workload would provide further evidence on the determinants of compassionate care provision.

Conclusions

This study found a moderate level of compassionate care provision among healthcare workers in selected public hospitals in Mwanza region, Tanzania. However, the results showed substantial variation across healthcare worker and workplace characteristics. Awareness of compassionate care, previous training on compassionate care, positive attitudes towards compassionate care, supportive patients' interactions and favorable organizational conditions were positively associated with higher levels of compassionate care. In contrast, staffing adequacy as perceived by healthcare workers was inversely associated with compassionate care provision.

Therefore, these findings highlight the importance of strengthening knowledge and skills of healthcare workers on compassionate care through regular training and continuing professional development. Managements in healthcare facilities should also promotes supportive leadership, ensure an enabling working environment, provide adequate time for patient care and address staffing challenges. Also, integrating compassionate care into routine quality improvement and healthcare management strategies may help create conditions that enable healthcare workers to provide patient centered and compassionate care consistently.

Abbreviations

AOR	-	Adjusted Odds Ratio
BMC	-	Bugando Medical Centre
CC	-	Compassionate Care
CI	-	Confidence Interval
COR	-	Crude Odds Ratio
CRC	-	Compassionate and Respective Care
DH	-	District Hospital
DMO	-	District Medical Office
HCWs	-	Healthcare Workers
LZIRB	-	Lake Zone Institution Review Board
MHI	-	Mizpah Health Institute
NIMR	-	National Institute of Medical Research
RAS	-	Regional Administrative Secretary
RCH	-	Reproductive and Child Health
RMO	-	Regional Medical Officer
SCCCS	-	Schwartz Concept of Compassionate Care Scale
SD	-	Standard Deviation
SPSS	-	Statistical Package for the Social Sciences
SRRH	-	Sekou-Toure Regional Referral Hospital (Mwanza Regional Hospital)
WHO	-	World Health Organization

Declarations

Ethical approval and consent to participate

The ethical approval for this study was obtained from the relevant research ethics revie authority in Tanzania. It was granted by the Lake Zone Institution Review Board (LZIRB), with reference number MR/53/100/810. Permission to conduct research in public hospitals were obtained from regional and hospital authorities in Mwanza. Additionally, all participants were informed about the purpose and procedures of the study, their voluntary participation and their right to withdraw at any time without penalty. Hence, written informed consent was obtained from all participants before participation in this study.

Consent for publication

This is not applicable because this manuscript doesn't contain identifiable data or images which requires consent for publication.

Competing interests

The authors of this study declare that they have no competing interests.

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Author Contribution

M.J.N conceived and coordinated the study, led the study implementation, contributed to all stages of the research process from proposal writing to manuscript writing and was responsible for overall coordination and development of the manuscript. H.M provided a senior-level supervision and critical review of the study and manuscript. She contributed to improvements in the study methodology, interpretation of the findings and overall scientific quality of the manuscript. W.D contributed to the data collection and provided comments and input during the development and review of the manuscript. J.I.M contributed to the review of study methodology review, data analysis, statistical interpretation and reporting and presentation of the results.All authors reviewed and approved the final manuscript and agreed to be accountable for this work.

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Availability of Data

Materials

The datasets generated and/or analyzed during the current study or in any form will not be publicly available because they contain information which could potentially compromise privacy of the participants and in maintenance of confidentiality. However, the data may be available from the corresponding author on reasonable request and subject to appropriate ethical and institutional approvals.

References

1. Care P, Malenfant S, Jaggi P, Hayden KA, Sinclair S. Compassion in healthcare: an updated scoping review of the literature. BMC Palliat Care. 2022;1–28. 10.1186/s12904-022-00942-3.
2. Malenfant S, Jaggi P, Hayden KA, Sinclair S. Compassion in healthcare: an updated scoping review of the literature. BMC Palliat Care. 2022;21(1):1–28. 10.1186/s12904-022-00942-3 . PubMed PMID: 35585622.
3. Babaei S, Taleghani F, Farzi S. Components of Compassionate Care in Nurses Working in the Cardiac Wards: A Descriptive Qualitative Study. 11. 2022;11(4):239–45. 10.15171/jcvtr.2015.24
4. Sinclair S, Norris JM, Mcconnell SJ, Chochinov HM, Hack TF, Hagen NA, et al. Compassion: scoping Rev Healthc literature. 2016;1–16. 10.1186/s12904-016-0080-0.
5. Abate M, Tadesse N, Mitiku K. Heliyon Level of compassionate health care service provision and its associated factors among health professionals working in public hospitals of Addis Ababa: health professionals ' perspective. Heliyon. 2022;8(July 2021):e09160. 10.1016/j.heliyon.2022.e09160.
6. Zeleke AM, Bayeh GM, Zeleke AM. Compassionate and respectful maternity care for mothers who gave birth in public health facilities in North Gondar, Ethiopia : a cross-sectional study. 2022;1–14. org/10.12968/ajmw.2021.0026
7. Jemal K. The importance of compassion and respectful care for the health workforce: a mixed-methods study. 2023;167–78. org/10.1007/s10389-021-01495-0
8. Jemal K, Samuel A, Geta A, Desalegn F, Gebru L, Tadele T. Evaluation of compassionate and respectful care implementation status in model healthcare facilities: a cross - sectional study. Archives Public Health. 2022;1–13. 10.1186/s13690-022-00845-y.
9. Wassihun B, Zeleke S. Compassionate and respectful maternity care during facility based child birth and women's intent to use maternity service in Bahir Dar, Ethiopia. BMC Pregnancy Childbirth. 2018;18(1):1–9. 10.1186/s12884-018-1909-8 . PubMed PMID: 29986659.

10. Care RM. Nursing and Health Care Compassionate and Respectful Maternity Care and Associated Factors among Women Attending Delivery Services at Public Health Facilities of Hawassa City. South Ethiopia. 2021;1–8. 10.23937/2469-5823/1510165.
11. Mlotshwa PR, Sibiya MN. Pregnant Women ' s Views Regarding Maternity Facility-Based Delivery at Primary Health Care Facilities in the Province of KwaZulu-Natal in South Africa. 2023. org/10.3390/ijerph20156535
12. Sando D, Ratcliffe H, Mcdonald K, Spiegelman D, Lyatuu G, Mwanyika-sando M, et al. The prevalence of disrespect and abuse during facility-based childbirth in urban Tanzania. BMC Pregnancy Childbirth. 2016;1–10. 10.1186/s12884-016-1019-4.
13. Laisser RM, Sciences A, Boniphace M, Sciences A, Nyanza EC, Sciences A. Use of Mycare Tool to Assess Clients ' Experiences of Services in Healthcare Facilities of Mwanza Districts, Tanzania : A Qualitative Appraisal. 2017;(November).
14. Levin KA. Study design III: Cross-sectional studies. 2006;24–5. 10.1038/sj.ebd.6400375
15. Region M. Mwanza Region. Vol. 2. 2.
16. Commission THEP, Salaam DARES, Office RCS. THE UNITED REPUBLIC OF TANZANIA MWANZA REGION SOCIO-ECONOMIC PROFILE.
17. Click M. Title Page Title: Compassionate Healthcare Can Be Reliably Measured: The Schwartz Center Compassionate Care Scale Author names and affiliations. Beth Lown. 1998;6171–21. 10.1016/j.pec.2015.03.019.
18. Rodriguez AM, Id BAL. Measuring compassionate healthcare with the 12-item Schwartz. Cent Compassionate Care Scale. 2019;1–16.
19. Msiska G, Simwaka A, Munkhondya B, Kabuluzi E. Factors Militating against the Delivery of Compassionate Care: A Malawian Perspective. 2018;889–904. 10.4236/ojn.2018.812067
20. Davoudi M, Ramezani M, Heydari A. Psychometric Properties of Schwartz Center Compassionate Care Scale with Iranian Patients. 6. 2023;6(3). 10.18502/jimc.v6i3.12860
21. Zamanzadeh V, Valizadeh L, Tabrizi FJ, Behshid M, Lotfi M. Challenges associated with the implementation of the nursing process: A systematic review. Iran J Nurs Midwifery Res. 2015;20(4):411–9. 10.4103/1735-9066.161002.
22. Mohammed R, Khalil T, Nashwan AJ, Al-najjar H, Abdelwahab M. Nurse Education in Practice Compassionate care in nursing: The role of simulation-based compassionate care on nurse ' s caring behavior, self-efficacy and compassion competency [Internet]. Vol. 87. 2025;87(July). https://doi.org/10.1016/j.nepr.2025.104470
23. Community S. The Social-Ecological Model: A Framework for Violence Prevention. 1–2.
24. Khaleghi AA. The concept of compassionate care in nursing: A meta-synthesis [Internet]. Vol. 13. 2024;13(3):174–81. 10.48307/nms.2024.412649.1250
25. Krausé SS, Minnie CS, Coetzee SK. The characteristics of compassionate care during childbirth according to midwives: a qualitative descriptive inquiry. 2020;1–10. org/10.1186/s12884-020-

03001-y

26. Ghafourifard M, Zamanzadeh V, Valizadeh L. Compassionate Nursing Care Model: Results from a grounded theory study. Vol. 29. 2022;29(3):621–35. 10.1177/09697330211051005
27. Chang AK, Kim JA, Jin YK, Hong WJ, Cho YK, Kim AY. Concept Analysis of Compassionate Care among Nurses: A Hybrid Model. J Korean Acad Fundamentals Nurs. 2025;32(2):275–86. 10.7739/jkafn.2025.32.2.275.

Figures

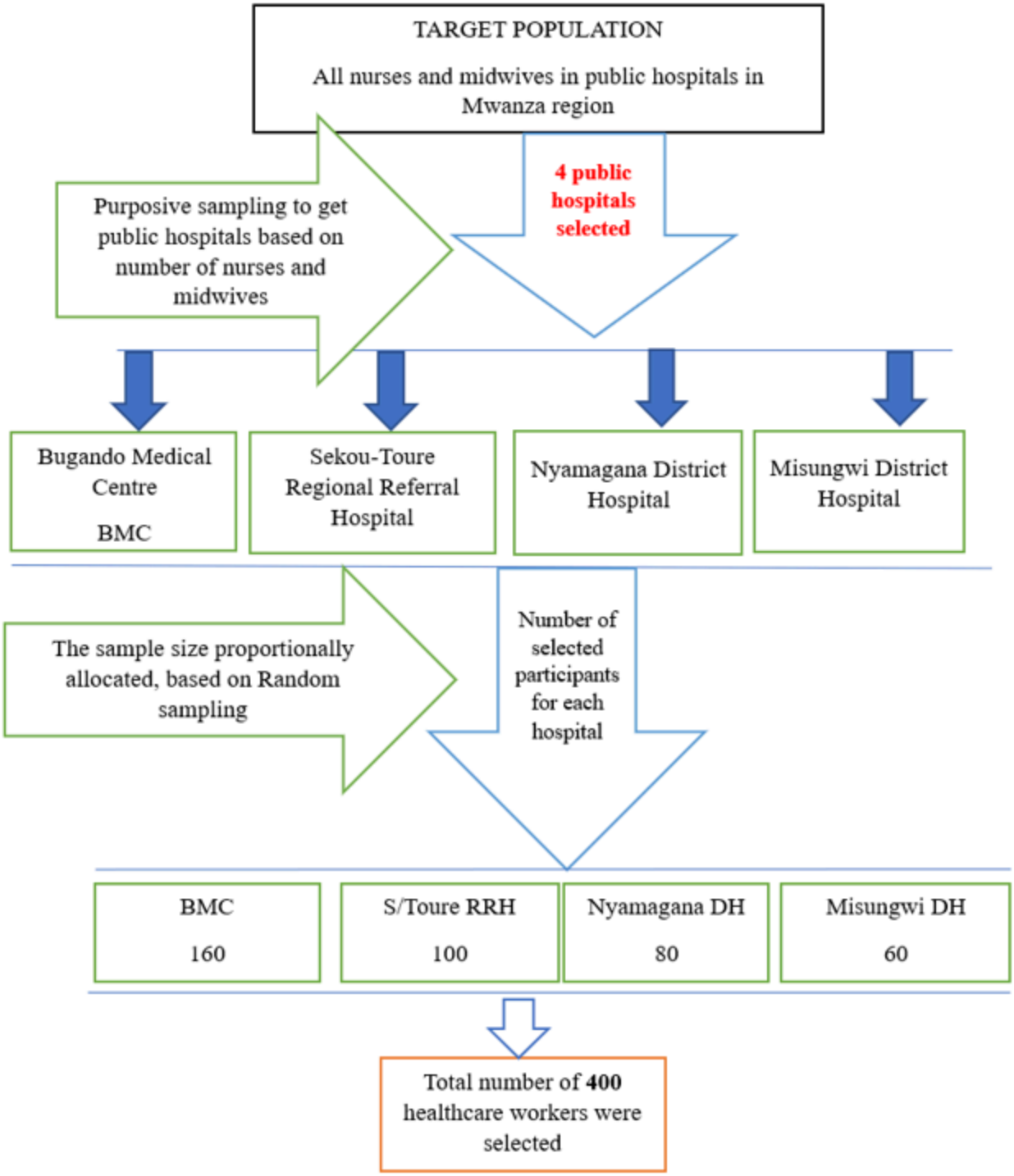


Figure 1

The sampling procedures that were applied to obtain the total number of participants

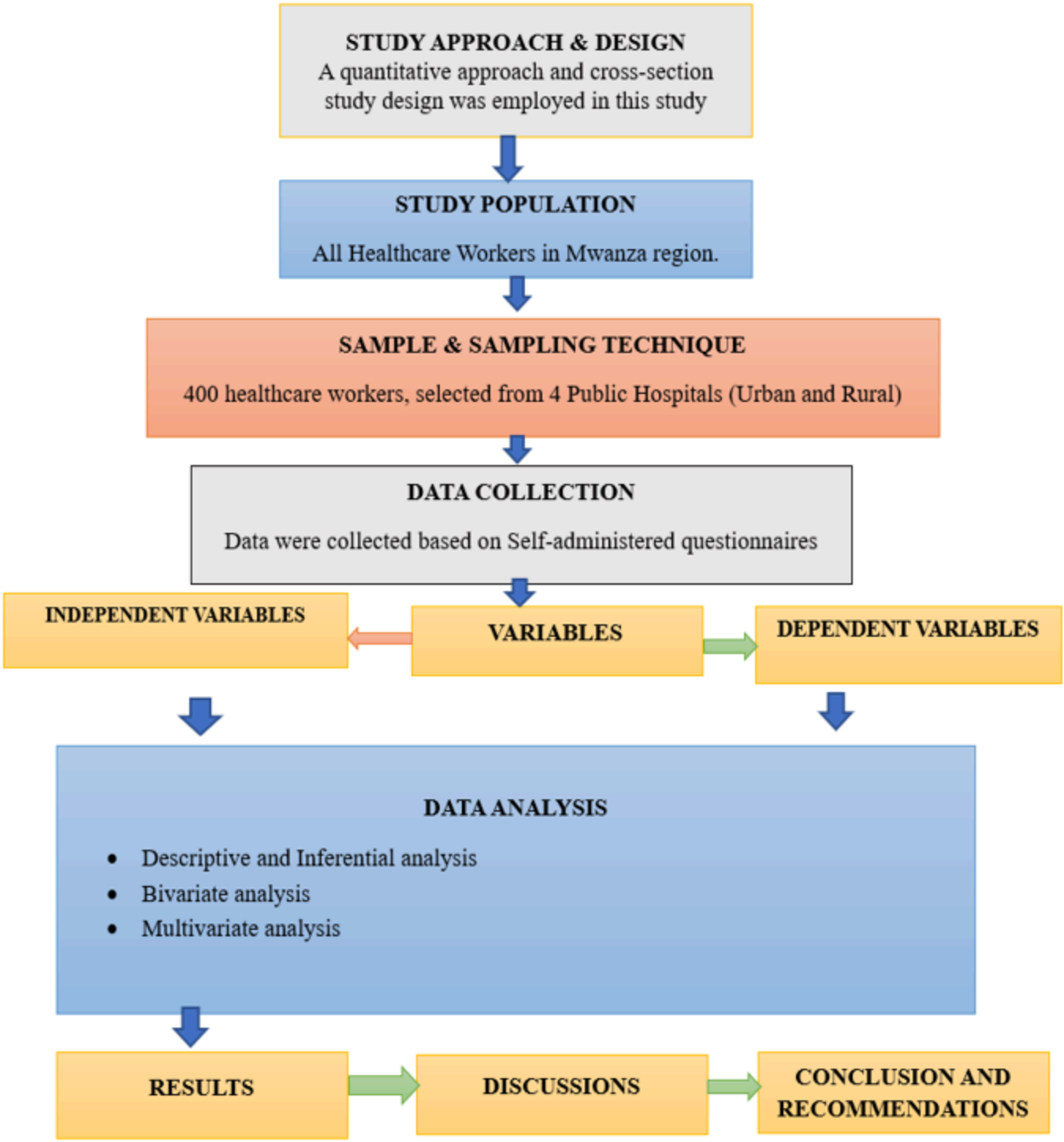


Figure 2

Summary of Research Methodology

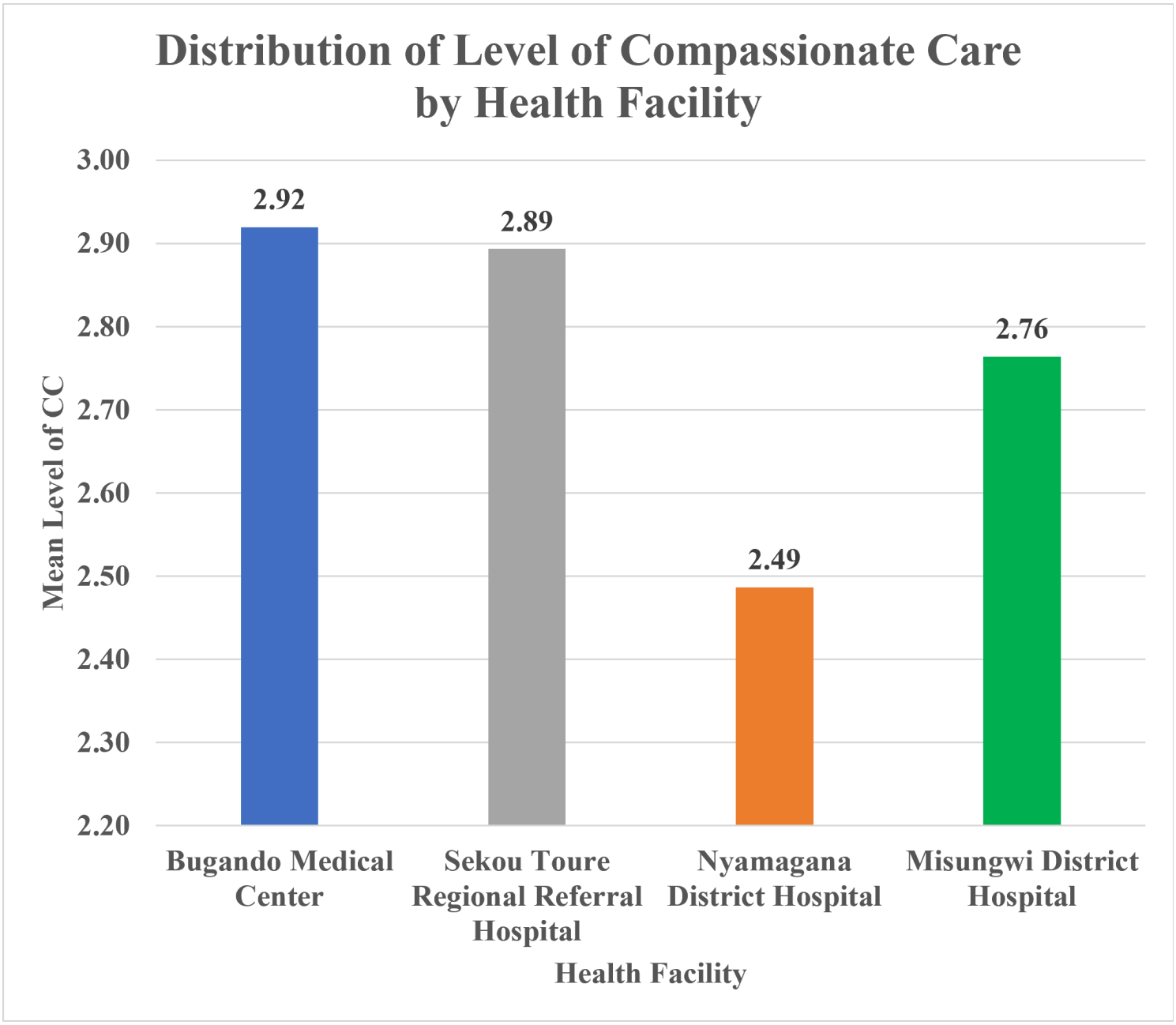


Figure 3

Distribution of Level of Compassionate Care by Health Facility

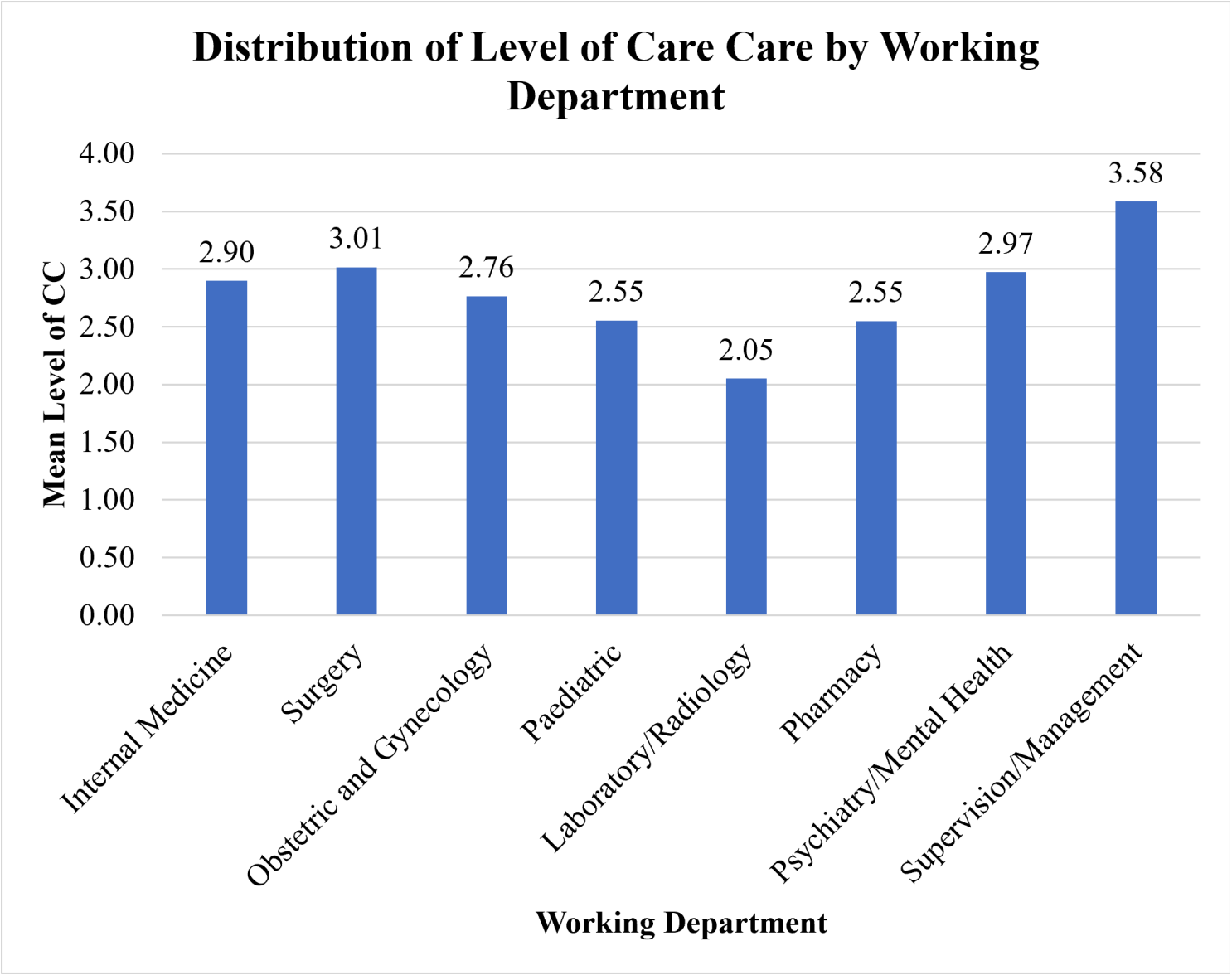


Figure 4

Distribution of the Level of Compassionate among Working Departments

Supplementary Files

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- SupplementaryFile1ResearchQuestionnaireEnglishVersion.docx