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Clinical Decision Making approach and Associated Factors among Nurses Working in South West Shoa Zone Hospitals Oromia Regional State, Ethiopia, 2023: A cross-sectional study

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Abstract

Introduction

Clinical decision making is a complicated cognitive process that nurses use as a method for solving problems. It involves the synthesis of information from several sources, including analysis, interpretation, explanation, inquiry, evaluation, communication, experience, and observation.

Objective

To assess nurse's clinical decision making approach and associated factors among nurses working in south west shoa zone hospitals Oromia Region, Ethiopia 2023.

Methods

An institutional-based cross-sectional study was conducted from July to August. Data was gathered using a pretested, structured, self-administered questionnaire and by trained data collectors. Data was entered into Epidata version 3.1 and exported to the statistical package for social science version 25.0 for analysis. Binary logistic regression model were used to identify associated factors. Factors with p-value of less than 0.25 in bivariable analysis were transferred to multivariable logistic regression to identify factors associated with the outcome variables. Statistical significance was considered at p-value ≤ 0.05 and using 95% of confidence interval. The model fitness was tested by using the Hosmer-Lemeshow goodness of fit test.

Results

Among the total participants, 47.2% had intuitive and 52.8% had analytical decision-making approaches. Studying nursing by regular program at colleges (AOR = 2.052, 95% CI (1.077, 3.910)), having Low workload (AOR = 1.784, 95%CI (0.999, 3.187)) and having training (AOR = 2.546 95%CI (1.331, 4.870)) were significantly associated with intuitive clinical decision making.

Conclusion

Compared to the majority of earlier studies, the intuitive decision-making approach was less prevalent. The intuitive decision-making method was associated with variables including low workload in the working unit, training on clinical decision-making and studying nursing through regular programs at colleges.

Introduction

Clinical decision-making (CDM) is the process of making assessments about the treatment and care of patients. To deliver safe and efficient nursing care and respond to clients' health care needs in a dynamic setting, nurses must be skilled decision-makers [1]. CDM is a vital component in the professional nursing care and sound decisions made by the nurses have direct influence on patient's speedy recovery[2]. CDM is a crucial part of nursing practice and helps detect patients' needs and determine the optimal nursing effort[3]. CDM is significant component of health care that has an impact on the caliber of service offered and it influences medical care quality more than any other component[4]. Evidence from healthcare systems around the globe revealed that clinical decisions improve approximately 50% of all negative events include mistakes in health care services[5].

The intuitive clinical decision-making approach is based on intuitive concepts, style of thinking is driven more by "gut-feel" and confidence derived from experience and it is utilized by expert nurses (more experienced). It does not follow a prescribed set of analytical steps, but draws on observed indicators and trends from the internal and external organization environment to reach strategic decision. Intuition is more than just a "gut feeling"; it is a process built on knowledge and clinical experience that has a place alongside evidence based on study[6].

Studies show that Patient deaths are more likely to occur in 5% of cases where nurses are unable to use proper clinical decision and not providing adequate care. Although being preventable in 37–52% of adverse events resulted from inappropriate clinical decision making and poor patient care, they continue to be a problem in a number of situations[7].

In United States of America from hospitalized patients 7.5% encounter unfavorable occurrences, of which 36.9% are deemed preventable and 20.8% result in premature death[8]. Similarly in United Kingdome 11% of patients encounter some sort of adverse event that causes harm from the drugs they are taking. About 6% resulted in long-term damage, and 8% of patients pass away[9] .

A study conducted in South Africa indicates that the patient's health status is directly affected by the improper CDM made by health professionals. As a result, more patients are having negative results[10]. Some of these negative results include ; poor patient data collection, poor information updating skills, and poor patient data processing lastly it results in poor patient outcome[11].

World Health Organization (WHO) has published the Global standards of nursing education and according to these standards, the development of clinical decision making skills should be provided in nursing school programs[12].

The Ethiopian Health sector transformation plan (HSTP) annual report revealed that there is a deteriorating quality of nursing care in local hospitals across the country and noted that nurses' clinical decision-making and motivation has been deteriorated in the past several years[13]. A study conducted in university of Gonder comprehensive and specialized Hospital show that, the utilization of intuitive and analytical decision making approach is 44.3% and 55.7% respectively and the researcher arrived to the conclusion that, in contrast to the majority of other studies in the treatment of patients in a clinical practice area, the ability of utilizing the two approaches of decision making is low [14].

In Africa related studies are quite limited particularly in Ethiopia. Therefore conducting this research will help future investigators as base line. In addition one previous study conducted in Ethiopia did not addressed the problem in wider range since it was conducted at single study center. Therefore by considering single study center and inadequacy of similar literature as a gap, the purpose of this study will be to address the problem in wider contexts making the study center multi -study center by including all Hospitals both public and governmental hospitals in south west Shoa Oromia regional state, Ethiopia, 2023.

Study Area

The study was carried out in all hospitals found in South West Shoa Zone Oromia regional state, Ethiopia. South West Shoa Zone is located to the South of Addis Ababa. South West Shoa Zone is bordered on the South by Southern Nation, Nationality and people regional State, on the North by West Shoa Zone and Shager City, in the West direction by West Shoa Zone, and on the East by East Shoa Zone. Based on the 2007 census conducted by the central statistical agency of Ethiopia, this zone has a total of 1101129 populations, of whom 556194 were men and 544935 were women[15]. Southwest Shoa Zone contains five governmental hospitals and one non-governmental hospital. The five governmental Hospitals include, Tulu Bolo General Hospital, Waliso General Hospital, Ameya primary Hospital, Bantu Primary Hospital, and Leman Primary Hospital. One non-government hospital called St. Lukas Catholic Hospital which found in Waliso, the capital town of the South West Shoa Zone. The total number of nurses in each six Hospitals includes 80 in Woliso General Hospital, 80 in Tulu Bolo General Hospital, 33 in Bantu primary Hospital, 40 in Leman primary Hospital, 32 in Amaya primary Hospital and 158 nurses in St Luke Catholic Hospital. The total number of nurses in all these six hospital was 423[16].

Study Design and Study Period

Cross sectional study design was applied from July1-Augost 30, 2023.

Population

All nurses working in South West Shoa Zone governmental and private hospitals were source population whereas all randomly selected Nurses working in South West Shoa Zone both governmental and private hospitals during the study period were study population.

Inclusion and Exclusion Criteria

Staff nurses working in clinical area in all hospitals and all nurses who present during the study period were included in the study. However, Nurses those have < 6 months of experience, Nurses who did not directly involved in patient care during the data collection Period, and Nurses those were ill during data collection excluded from the study.

Sample Size Determination and Sampling Procedures

The actual sample size for the study was determined using a single population proportion formula

$$n = \frac{(Z\alpha/2)^2 x\ p\ (1-p)}{d^2}$$

That is,

Where n = estimated sample size

Zα/2 = critical value at 95% Confidence level = 1.96

P = prevalence o = 44.3% taken from previous study[14].

d = margin of error = 0.05

From the formula "n" denotes sample size, zα/2 is critical value at the 95% confidence level with = 1.96, 'p' is the proportion, 'd' is margin of error (d = 0.05) and "p" is the proportion of utilization of intuitive clinical decision making is set at 44.3% taken from previous study conducted in Ethiopia at University of Gonder Comprehensive and Specialized Hospital [14]. Using these values, $(1.96)^2(0.43)\ (0.57)/\ (0.05)^2$ =377 the sample was estimated to be 377.The above sample was taken from a relatively small population that is the total numbers of nurses in all hospitals found in south west shoa

zone was < 10000 (The total number of nurses working in these six hospitals was N = 423), the required minimum sample was obtained from the above estimate by making some adjustment or by using reduction formula:

Since the target population was less than 10,000 the sample size was adjusted by using the population correction formula of nf = n / 1+ ni/N =377/1 + 377/423 = 199.36 ~ = 200 .By adding a 10% possible non-response rate, the final sample size is estimated to be 220. For each hospital, the total sample size was allocated proportionally based on the number of nurses in each selected hospitals.

Sampling Technique and Sampling Procedures.

The all five governmental hospitals and one private hospital found in South west Shoa zone were selected. Then the number of nurses in each selected hospital was collected from the human resource management of each hospital and calculated by the number of representative samples by using proportion with the total sample size. For recruiting the study participants, a simple random sampling method was used. A list of selected nurses then becomes participant of the study.

Variables of the Study

Clinical decision making Approach is Dependent Variable whereas the independent variables includes Socio demographic related variables, Personal related variables, Organizational related variables

Operational Definitions

Clinical decision

A decision made with regard to patient care[17].

Clinical decision making

the ability to sift and synthesis information make judgment and appropriately implement this judgment on patient care in the clinical environment[17].

Analytical decision making

score of ≤ 67 from the total of 120 Likert scale score[14].

Intuitive decision-making

score of ≥ 68 from the total of 120 Likert scale score[14].

Data Collection Tool and Process

The tool has two parts. Part 1 contains contain socio demographic related, organizational related, personal related (nurse related). Both part 1 and part 2 questionnaires were self-administered questionnaire adapted from a previous similar study in Norway and Gonder [14;18] and the questionnaires were developed by English version. Part 2 contains Nursing decision making instruments adapted Sirkka Lauri and Sanna Salanterä 2002[19]. Part2 tool has a 5-point Likert scale with the response options of “never”, “rarely,” “sometimes,” “often,” and “always”. The items will be scored from 1 to 5. A higher score indicates intuitive decision maker approach. The even number of items refutes decision-making items in uncertain situations with limited time. The odd-numbered items show decision making in enough available time.

The score response to “always” in even items indicates the high intuitive approach of decision making, whereas the score response to an odd number of items is reversed. For instance, for odd items, if the respondent has ticked the response option1, that is scored as 5; and indicates a highly intuitive approach. 2 is scored as 4, 3 remains unchanged, 4 becomes 2, and 5 is scored as1. The scores for even numbers of items were not changed. A low total score (24–67) or ≤ 67 analytical decision-making approach and score ≥ 67 or (68–120) are intuitive decision making approach to decision-making items. The reliability of the tool was assessed and checked by the Cronbach’s alpha of the questionnaire and found to be 0.86. Data collection was conducted by four BSC nurses and additional one BSC nurses was recruited as supervisors. All data collectors and supervisor were oriented by principal investigator.

Data Quality Control

Pretest was done two weeks before the start of actual data collection on 5% of the sample size (11 nurses) at nearby hospital, Dima primary hospital which is found in Sabbata town to make sure the questions are easily understandable and to avoid ambiguous terminology. Trained data collectors were collected data .In order to assure the quality of data, the principal investigator and supervisors were actively involved in supervision of the data collection and the overall activities on daily base to ensure the complete response of the questionnaire. The principal investigator was collected the

questionnaire and checked each part of the instrument for missed values before data entry and incomplete data were discarded. The completed questionnaires were cross checked for consistencies throughout the course of data collection.

Data Processing and Analysis

The collected data were checked for completeness and accuracy before analysis. Data were entered in the Epi-data version 3.1, and exported and analyzed using Statistical Package for Social Science (SPSS) version 25 software. The datasets were then re-coded and cleaned before being subjected to appropriate statistical analysis using SPSS. Descriptive statistics such as the frequency and percentage were used. Tables and charts were also used to describe the sample characteristics and responses to questionnaire items.

Model fitness was checked by using the Hosmer-Lemeshow goodness of fit test and found to be p = 0.852. Multicollinearity was cheeked using the variance inflation factor (VIF) and its value is in between 1 and 3, which is interpreted as no multicollinearity. Bivariate and multivariable logistic regression analyses were used to identify associated factors. Those variables with a p-value less than 0.25 in the bivariate analysis were entered into the multivariable analysis. Those variables with a p-value less than 0.05 with a 95% confidence interval (CI) were considered significantly associated with outcome variable.

Ethical Consideration

The study was conducted in accordance with the ethical principles outlined in the **Declaration of Helsinki** (2013 revision). Ethical approval was obtained from the Salale university institutional review board reference number SLU IRB 188/23. All participants were informed about the nature, purpose, potential risks of the study, and written informed consent was obtained prior to participation. Confidentiality and anonymity of participants were strictly maintained throughout the research process. Participants retained the right to withdraw from the study at any stage without penalty. No financial or other undue inducements were offered for participation.

Results

Result of Socio-demographic related, personal related and organizational related characteristics

Among 220 study participants, 212 (96.36%) participated in the study, making the response rate 96.36%. The mean age of respondents was 30.79 years, with a range of 24–42 years. More than half (54%) of them were 29–33 years old. Out of the 212 participants, 128 (60.4%) were male. Concerning years of experience, more than half, 137 (64.6%) of the participants had an experience of > 5 years. Regarding the educational level of the participants, the majority, 174 (82.1%) of them were degree holders. More than two third of the respondents 145 (68.4%) were married. Regarding program of studying nursing at colleges, more than two third 146(68.9) of them were studied nursing by regular program at College/University during their college stay. Majority of them 151(71.2%) were get support from their perspective supervisors. Around three fourth of them 160 (75.5%) were not specialty nurse. Regarding to work related stress three fourth 159 (75%) did not complain work related stress. Regarding to training towards clinical decision making, more than two third, 148 (69.8%) respondents had not taken any training courses related to CDM. Among the total participants, 51 (24.1%) worked in the outpatient department unit. Among the participants, 120 (56.6%) had a workload in their working unit (Table 1).

Table 1
result of Socio-demographic related personal related and organizational characteristics among nurses working in south west shoa hospitals, 2023 (N = 212)

A) Socio demographic related Variable			
Variable	category	Frequency	Percentage
Age	24–28	53	25.0%
	29–33	116	54.7%
	> 34	43	20.3%
Gender	Male	128	60.4%
	Female	84	39.6%
Experience	2–5	28	13.2%
	6–10	137	64.6%
	> 10	47	22.2%
Level of education	Diploma	21	9.9%
	Degree	174	82.1%
	Masters	17	8.0%
Marital status	Single	65	30.7%
	Married	145	68.4%
	Divorced	2	9%
B) personal related variables			
By what program you studied nursing?	Regular	146	68.9%
	Irregular	66	31.1%
Get support from supervisor	Yes	151	71.2%
	No	61	28.8%
Specialty nurse	Yes	52	24.5%
	No	160	75.5%
work related stress	Yes	53	25%
	No	159	75%
C) organizational related variables			
CDM training	Yes	64	30.2%
	No	148	69.8%
Unit of work	OPD	51	24.1%
	IPD	32	15.1
	OR	24	11.3%
	EOPD	31	14.6%
	MCH	25	11.8%
	ICU	19	9.0%
	Liaison	7	3.3%
	NICU	23	10.8%
Work load	High	120	56.6%
	Low	92	43.4%

Clinical decision making result

In comparison to the previous study, the findings of this study indicate that participant responses to clinical decision-making items in data collecting, data processing, planning, implementation, and evaluation were unsatisfactory. Based on the findings of this study about 22 (10.4%), responded that “it was always easy for them to make a distinction between relevant and irrelevant information in defining the patient’s condition” during the data collection stage of the decision-making process. Concerning data processing of and making decisions, about 20 (9.4%) of the participants responded that “it was always easy for them to form an overall picture of the patient’s situation and major nursing problems.” From the total participants only 28 (13.2%) of the participants responded that “they always anticipate the impacts of nursing interventions on patient care” during the planning stage of decision making. Additionally, the study's results showed that 27 (12.7%) of the participants responded that “it was always easy for them to assess the impacts of their actions on the patient’s condition” during implementation and evaluation of clinical decision making (Table 2).

Table 2
The response of clinical decision making items among nurses working in South West shoa zone Hospitals, 2023 (N = 212).

Questioning item	Never	Rarely	Sometimes	Often	Always
Data collection	**N (%)**	**N (%)**	**N (%)**	**N (%)**	**N (%)**
1) I collect as much advanced information as possible from the Patient's records.	31 (14.6%)	73 (34.4%)	64 (30.2%)	17 (8%)	27 (12.7%)
2) I rely on my interpretations when it comes to defining the Patient's condition.	14 (6.6%%	47 (22.2%)	78 (36.8)	56 (26.4%)	17 (8.0%)
3) Based on my advance information I specify all the items I intend to monitor and ask the Patient about.	23 (10.8%)	76 (35.8%)	56 (26.4%)	43 (20.3%)	14 (6.6%)
4) I make assumptions about forthcoming nursing problems during the first contact with the patient	16 (7.5%)	54 (25.5%)	75 (35.4%)	48 (22.6%)	19 (9.0%)
5) I confirm the impression I have formed based on advanced information by seeking symptoms that support my views.	25 (11.8%)	71 (33.5%)	54 (25.5%)	39 (18.4%)	23 (10.8%)
6) It is easy for me to make a distinction between relevant and irrelevant information in defining the patient's condition.	24 (11.3%)	42 (19.8%)	79 (37.3%)	45 (21.2%)	22 (10.4%)
Data processing 7) I compare information I have received about the patient with my earlier knowledge of similar individual patients' cases	28 (13.2%)	71 (33.5%)	60 (28.3%)	35 (16.5%)	18 (8.5%)
8) I compare information I have received about the patient with my own experiences in nursing	18 (8.5%)	51 (24.1%)	61 (28.8%)	52 (24.5%)	30 (14.2%)

Questioning item Data collection	Never N (%)	Rarely N (%)	Sometimes N (%)	Often N (%)	Always N (%)
Practice.					
9) I compare information I have received about the patient with research knowledge about nursing care and its Impacts.	19 (9.0%)	58 (27.4%)	68 (32.1%)	38 (17.9%)	29 (13.7%)
10) It is easy for me to see, even without closer analysis, which pieces of information are relevant to defining the patient's nursing problems	20 (9.4%)	58 (27.4%)	74 (34.9%)	47 (22.2%)	13 (6.1%)
11) I define the patient's nursing problems objectively based on the symptoms and Complaints observed.	23 (10.8%)	61 (28.8%)	71 (33.5%)	40 (18.9%)	17 (8.0%)
12) It is easy for me to form an overall picture of the patient's situation and major nursing Problems.	22 (10.4%)	58 (27.4%)	75 (35.4%)	37 (17.5%)	20 (9.4%)
Planning 13) I draw up the patient's nursing plan according To the stages of the nursing decision-making process.	30 (14.2%)	71 (33.5%)	56 (26.4%)	39 (18.4%)	16 (7.5%)
14) I base the patient's nursing plan on my nursing views and/or the patient's views on his/her care	26 (12.3%)	64 (30.2%)	65 (30.7%)	34 (16.0%)	23 (10.8%)
15) I base the patient's nursing plan on the general regimes prescribed for the patient's disease	21 (9.9%)	73 (34.4%)	62 (29.2%)	35 (16.5%)	21 (9.9%)
16) I document without difficulties the general directions concerning	20 (9.4%)	67 (31.6%)	68 (32.1%)	33 (15.6%)	24 (11.3%)

Questioning item Data collection	Never N (%)	Rarely N (%)	Sometimes N (%)	Often N (%)	Always N (%)
the patient's care to the Patient's records.					
17) I set out targets for the patient's care that are Easy to measure.	22 (10.4%)	73 (34.4%)	63 (29.7%)	35 (16.5%)	19 (9.0%)
18) I anticipate the impacts of nursing Interventions on the patient.	19 (9.0%)	54 (25.5%)	68 (32.1%)	43 (20.3%)	28 (13.2%)
Implementation and evaluation 19) I follow as closely as possible the patient's existing nursing plan for his/her disease and Situation.	30 (14.2%)	68 (32.1%)	50 (23.6%)	43 (20.3%)	21 (9.9%)
20) I anticipate changes in the patient's condition based on individual cues even before there are any clear symptoms.	21 (9.9%)	62 (29.2%)	72 (34.0%)	39 (18.4%)	18 (8.5%)
21) I use specific information about the treatment of the patient's disease when making decisions about Nursing care.	29 (13.7%)	71 (33.5%)	53 (25.0%)	39 (18.4%)	20 (9.4%)
22) I flexibly change my line of action based on feedback on the patient's situation	22 (10.4%)	53 (25.0%)	60 (28.3%)	53 (25.0%)	24 (11.3%)
23)I try to find reasons for my observations of changes in the patient's Condition.	21 (9.9%)	72 (34.0%)	66 (31.1%)	34 (16.0%)	19 (9.0%)
24) It is easy for me to assess the impacts of my actions on the patient's Condition.	23 (10.8%)	57 (26.9%)	54 (25.5%)	51 (24.1%)	27 (12.7%)

From the total participants 100 (47.2%) of them scored in intuitive clinical decision making approach and the rest 112 (52.8%) scored analytical clinical decision making approach (Fig. 1).

Factors associated with a clinical decision-making approach

In bivariable regression analysis variables like age, male gender, low workload, having CDM training and regular program studying of nursing during college stay, were found to have associated with the CDM approach at p-value ≤ 0.2. However, in the multivariable logistic regression, only three variables such as workload, attending nursing education by regular program and having CDM training were significantly associated with intuitive clinical decision-making approach at p-value ≤. 050.

The odds of using an intuitive decision-making approach were 2.05 times (AOR = 2.052, 95% CI (1.077, 3.910)) higher in those studied regular nursing program than the counterpart. In a low work load setting, the odds of intuitive decision making approach was 1.784 times (AOR = 1.784, 95%CI (0.999, 3.187)) higher than in high work load setting. Training increased the odds of using an intuitive decision -making approach by 2.546 times (AOR = 2.546 95% CI (1.331, 4.870) higher among trained compared to non-trained participants (Table 3).

Table 3
Bi-variate and multivariable analysis showing factors associated with clinical decision making approach among nurses working in south west shoa hospitals, 2023(N = 212)

Variables	**CDM**		**COR(95% CI)**	**p-value**	**AOR (95%CI)**	**p-value**
	Intuitive N (%)	**Analytical N (%)**				
Age						
24–28	29 (13.67%)	24 (11.32%)	1			
29–33	49 (23.11%)	67 (31.6%)	0.65 (0.315,1.165)	**0.133***	0.662 (0.333,1.317)	0.938
Gender						
Male	54 (25.47%)	74 (34.90%)	0.074 (0.346,1.050)	**0.074***	0.617 0.342,1.115)	0.110
Female	46 (21.69%)	38 (17.92%)	1			
Program of studying nursing at college/University						
Regular	77 (36.32%)	23 (10.84%)	2.086 (1.143,3.808)	**0.017***	2.052 (1.077,3.910)	**0.029****
Irregular	69 (32.54%)	43 (20.28%)	1			
Training						
Yes	40 (18.86%)	24 (11.32%)	2.444 (1.337,4.468)	**0.004***	2.546 (1.331,4.870)	**0.005****
No	60 (28.30%)	88 (41.50%)	1			
Work load						
High	49 (23.11%)	71 (33.49%)	1			
Low	51 (24.05)	41 (19.33%)	0.555 (0.320,0.396)	**0.035***	1.784 (0.999,3.187)	**0.050****
NB: COR= Crude odds ratio, AOR= Adjusted odds ratio, CI= confidence interval,* = p-value < 0.25, **= p-value ≤ 0.05						

Discussion

This study assessed clinical decision making approach and barriers among nurses working in different departments in south west shoa hospitals oromia regional state, Ethiopia. The overall intuitive clinical decision making approach of nurses was 47.2%. The findings of this study showed that there was no relationship between most of socio demographic variables including age, marital status, work of experience and level of education. This could be due to the fact that most of socio demographic variables did not affect overall level of clinical decision making approach.

In this study, the overall prevalence of the intuitive decision-making approach was 47.2%. This finding was higher than the study conducted in University of Gonder (44.3%) [14]. This could be due to the fact that this study was included all hospitals both governmental and private found in South West shoa Zone unlike the previous study. This finding was lower than the studies conducted in Norway (78%) [18] Mexico university hospital

(67%),[20]. The possible justification might be due to the discrepancy of nurses' experience and the presence of a lack of training towards decision-making approaches, which can limit the decision-making ability in the care of patients[21]. This finding was higher than in the studies conducted in Canada; 21.8% [22] and another study in Canada, 23%[23]. The inconsistency might be due to differences in the study period and sample size.

The odds of an intuitive decision-making approach were decreased by 46% in a high workload setting compared to a low workload area. This finding was in line with the studies done in university of Gonder [14] and in Taiwan [24]. However, the majority of these study participants (52.8%) used an analytical decision-making approach. The possible justification might be due to majority of nurses had no training on clinical decision making. The odds of an intuitive decision-making approach were 2.546 times more likely in trained than in non-trained participants. This finding was in line with a study conducted in University of Gonder[14] and China[25]. This might be because taking training can improve the decision-making ability of nurses in their working area[26].

The odds of using an intuitive decision-making approach was 2.052 (AOR = 2.052, 95% CI (1.077, 3.910)) higher in those attended regular nursing education than the counterpart. The possible justification may be effective nursing education programs increase satisfaction with clinical practice and promote positive emotional regulation in nursing students[27].

Conclusion

The findings of this study showed that intuitive decision-making was low and the analytical decision-making approach was high compared to most of the previous studies in the care of patients in a clinical practice area. In this study, factors such as low work load, training on clinical decision making and studying nursing by regular program at college or university were significantly associated with the intuitive decision-making approach. Therefore, policymakers ought to implement the standard nurse-patient ratio, design quality improvement plan for nursing students those do not study nursing by regular program and design training on clinical decision making and how to handle the patient in different situations to achieve a good decision-making approach.

Abbreviations

AOR	Adjusted Odd Ratio
CDM	Clinical Decision Making
CEO	Chief Executive Office
CI	Confidence Interval
COR	Crude Odd Ratio
CSA	Central Statics Agency
FMOH	Federal Ministry of Health
HSTP	Health Sector Transformation Plan
ICU	Intensive Care Unit
IRB	Institutional Review Board
OR	Odd Ratio
SLU	Salale University
SPSS	Student Package For Social Science
VIF	Variance Inflation Factor
WHO	World Health Organization

Declarations

Declarations Ethics approval and consent to participate

Ethical clearance was obtained from the Institutional Review Board of Salale University ref SLU-IRB 188/23. A supportive letter to be submitted to each hospital was obtained. In addition written consent was obtained and Nurses provided informed consent and agreed to participate. Respondents were told about the aim of the study and the confidentiality of the information. In addition confidentiality of the study participant's information were provided to the participant nurses, and collection of data was started.

Consent for publication

Not Applicable

Data availability

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no known competing financial interests or personal relationships

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Author Contributions

1 Study design: Mesfin Muluneh Taresa, Teshome Ketema Sime(TKS). 2. Data collection: Mesfin Muluneh Taresa, Teshome Ketema Sime(TKS), Nano Belema Areda. 3 Data analysis Asfaw Getaye, Mesfin Muluneh Taresa, Mathewos Mokonin. 4. Study supervision Asfaw Getaye, Mathewos Mokonin. 5. Manuscript writing: Mesfin Muluneh Taresa, Teshome Ketema Sime(TKS). All authors reviewed the manuscript and confirmed the final version of the manuscript.

Authorship statement

All named authors meet the International Committee of Medical Journal Editors (ICMJE) criteria for authorship for this article, take responsibility for the integrity of the work as a whole, and have given their approval for this version to be published.

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Figures

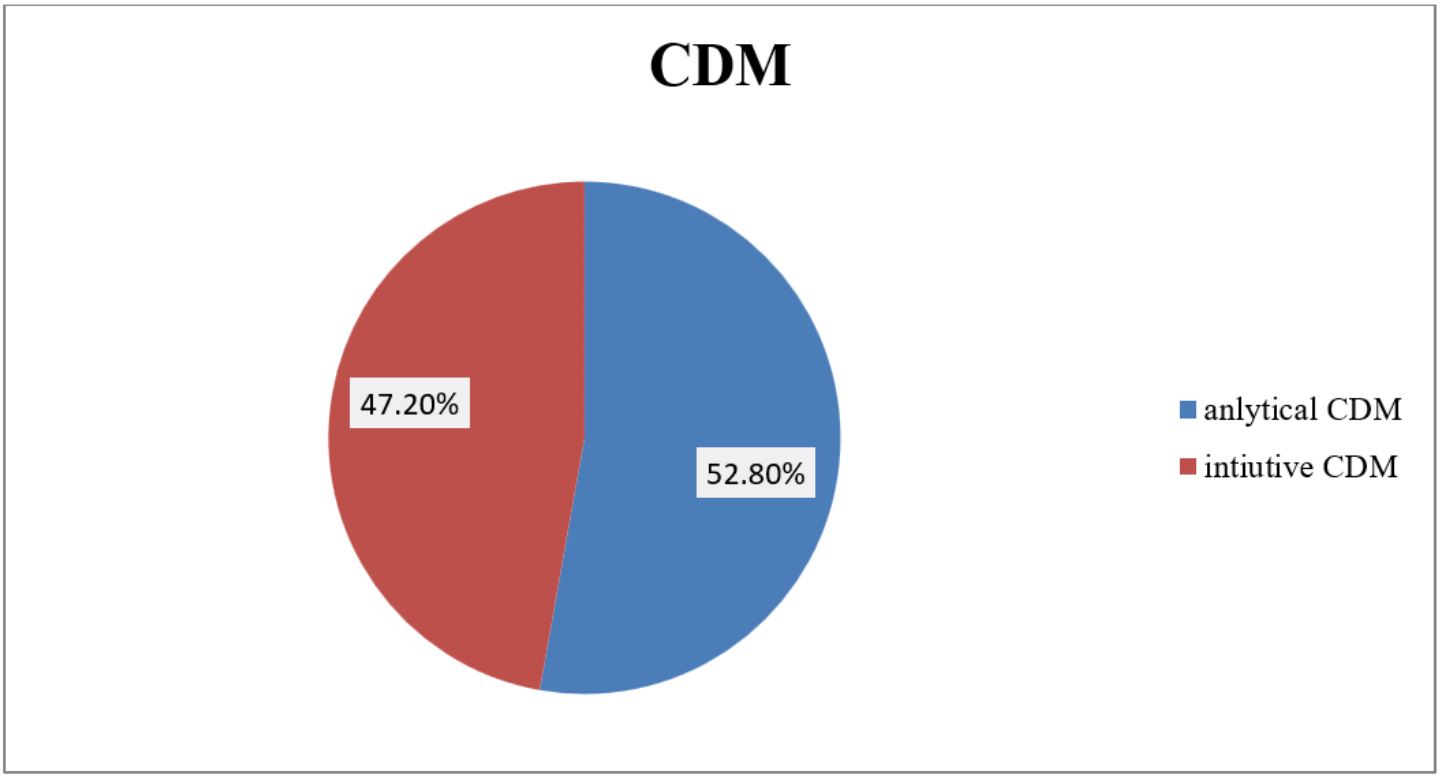


Figure 1

Clinical decision making-approach among nurses working in South west Shoa Zone Hospitals, 2023 (N=212)