MANAGEMENT OF CLINICAL INSTRUCTIONAL MATERIALS ON STUDENTS' ACQUISITION OF CLINICAL SKILLS IN HEALTH TRAINING INSTITUTIONS IN MBALE CITY. A CROSS-SECTIONAL STUDY.

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ABSTRACT.

Background.

This study focused on assessing the influence management of clinical instructional materials on Students' Acquisition of Clinical Skills in Health Training institutions in Mbale City.

Methodology.

The study adopted the cross-sectional design with a sample of 127 respondents (123) Medical staff and (4) ward in-charges from the medical staff in Mbale Regional Referral Hospital. Data was collected using questionnaires and interview guides for quantitative and qualitative data respectively. Data was analyzed using SSPSS software and content analysis respectively.

Results.

Most of the respondents 65(54.2%) had served for 11 years and above, 42(35%) had served between 6 years and 10 years and 13(10.8%) had served between 1 year and 5 years. The study found that the Management of clinical instructional materials moderately influences Students' acquisition of clinical skills ($F=7.274$, $Df=1$, $\rho< 0.05$, $\beta=0.572$).

Conclusion.

Management of clinical instructional materials has a moderately significant positive influence on Students' acquisition of clinical skills. This was interpreted to mean that if Health Training Institutions in Mbale City enhance the Management of clinical instructional materials, there will be a moderate substantial improvement in Students' acquisition of clinical skills.

Recommendation.

Health Training Institutions in Mbale City should further boost the Management of clinical instructional materials towards supporting Students' acquisition of clinical skills

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BACKGROUND TO THE STUDY.

Clinical instructional materials are collections of materials and equipment that process instruction and training; such materials and equipment may be derived from the objectives of teaching and learning (Agba, 2019). They assist in putting across information and enable both teaching and learning to take place effectively. The use of Clinical instructional materials provides the physical media through which the intents and contents of the medical curriculum are experienced. An argument is made for a shoring up of biomedical science in revised curricula with the beneficiaries being nascent practitioners, developing physicians, nurses, scientists, etc., and the public (Buja, L. M. (2019). Instructional materials such as Clinical guides, ICT resources, and simulation models play an important role in the preceptor-preceptee relationship in training institutions, and their effective management has been highlighted to facilitate Students' acquisition of clinical skills (Samarasekera et al., 2018).

In a study carried out by Drateru (2016) on teaching and learning in health training institutions in Uganda, which adopted the descriptive and cross-sectional survey design, it revealed that most performance problems in medical students were attributed to unclear expectations, skills deficit, resources or equipment shortages or a lack of motivation of trainers. Similarly, Mulegi (2022) in an overview report shares quite the same experience of performance gaps of the Health Worker force in Uganda.

One senior physician in Mulago National Referral Hospital Uganda critiqued that, "Currently a large proportion of young medical graduates have lack of communication skills, have a poor grasp of clinical logic, are uncertain in their choice of diagnostic tests, make poor decisions in prescribing treatment and have a poor grasp of ethical principles (Ssengooba, M. (2010). This has led to a public outcry and a lack of trust in medical professionals.

The study seeks to analyze the influence of the Management of clinical instructional materials on Students' acquisition of clinical skills in Health Training Institutions in Mbale City.

METHODOLOGY.

Research Design.

The study employed a cross-sectional survey research useful for assessing information at one point in time. This design was chosen because it allowed the collection of data at one point in time, was economical, and allowed statistical tests where it was possible to conclude from the statistical test results. This cross-sectional survey research, allowed quantitative data to be collected using the questionnaire as an instrument and could be supplemented with an interview guide which was the case with this study.

Study setting.

The study was conducted in Mbale city particularly in Mbale Regional Referral Hospital (MRRH) where all the health training institutions place their students as the practicum site throughout the training. This study area is found in Eastern Uganda with a sizable catchment area of more than 14 districts of Uganda, Mbale district being inclusive. Mbale RRH as a study unit is located in Mbale city 300m along Mbale Kampala road from the city Centre. The hospital carries out both student pre-service training and in-service training and is suitably in line with the study management of clinical training and students' acquisition of skills. The study time scope was limited to the period between the years 2016 to 2019 when most Uganda communities grappled with several increasing ill health conditions that were attributed to inadequate skills of health workers trained in Uganda.

Study population.

The study population comprised the Medical staff and Ward in-charges as managers who work in the Hospital. The study targeted 9 wards with a minimum of 20 experienced staff making 180 medical staff who may observe medical students interact with patients and caretakers, appraise them, and at times help in record keeping while they are for hospital placements. The study also considered 4 ward in-charges who have worked in the hospital for at least seven years from 2016 to 2019 with vast experience as managers. Ward in-charges are managers who supervise, motivate students, manage resources, make decisions, and provide accountability for all activities carried out in the departments.

Study sample size.

The sample size was 127 respondents from a study population of 180 medical staff determined using Krejcie and Morgan table (1970) for determining the sample size of a known population. The study also considered 4 ward in-charges with experience of more than seven years.

Table 1: Summary of population, sample, and sampling techniques.

Category of respondents	Population	Sample	Sampling techniques
Medical staff	180	123	Simple random sampling
Ward in-charges	4	4	Census inquiry
Total	184	127	

Sampling techniques.

The researcher employed probability sampling for the medical staff where a simple random sampling was used. Simple random sampling was used during the collection of data from medical staff where each member of the population had an equal probability or chance to be included in the sample. Simple random sampling was used to choose individuals to represent the target population. The study also employed a non-probability sampling of a purposive sample to interview wards in charge based on the experience of seven years and more.

Bias.

Any bias in the target population was equally spread among the individuals with the use of simple random sampling (Creswell, 2018). A list of medical staff was requested from the ward in charge and every even number was chosen for the study to eliminate bias.

Data Collection Methods and Instruments.

The researcher made use of questionnaires and interview guides as research instruments for collecting data from the field. The items of both the questionnaire and interview guide were, developed in line with the objectives of the study.

Questionnaires.

In this study, the researcher designed a Management of Clinical Training and Students Skills Acquisition Questionnaire (MCTSSAQ) for medical staff to respond to the questions and then return them to either the researcher or the research assistant. A five-point Likert scale was adopted i.e. 5-Strongly Agree [SA], 4-Agree [A] 3- Neutral [N], 2-Disagree [D], 1- Strongly Disagree, [SD] and was designed, consisting of five parts; that is section A containing personal information of the respondents, section B containing information on medical staff, section C consisting of information on clerkship training, Section D containing information on Clinical Instructional Materials and Section E consisting of information on Students Acquisition of skills. Questionnaires were used because data could easily be collected from very many respondents within a short time and also the guarantee privacy given the fact that respondents have the opportunity to give original and authentic responses.

Interview Guide.

This study used an in-charge medical clinical training interview guide (GMCT) for collecting data from the ward

in charge of supplementing the data that was collected from the medical staff in the initial phase. The interview guide was semi-structured based on the research objectives. The interviews were conducted for at least 20 minutes on average, within the ward office, and recording was done immediately.

Data quality control.

The data collection instruments were subjected to both validity and reliability to minimize bias in the study

Validity of instruments.

The content validity was achieved through the use of research experts from the Department of Educational Management and Administration to evaluate the quality of the questions in the instruments. The supervisor of this study also accessed the instrument to ascertain if the items measured what they were supposed to measure through face validity. The content validity was computed and evaluated as recommended by Nadasday (2019) that an instrument is considered to be valid when the average content validity (CVI) index is 0.7 and above.

Content Validity Index (CVI) = No. of items rated relevant / The total number of items rate

Table 2: Content Validity Index Results.

Content Validity Index Results for Questionnaires			
Variables	Number of items	Valid items	Content validity Index
Management of Clinical Instructional Materials	6	6	1. 00
Students' acquisition of clinical skills	6	5	0.833
Total	12	11	0.916

Source: ***Primary data, 2023***

Table 2 reveals that all items on each variable (Management of Clinical Instructional Materials and Students' acquisition of clinical skills) were above 0.7 when the Content Validity Index coefficient test was computed. The findings indicated that all the items were valid. The CVI was found to be 91.6%. CVI of all the study variables was above 0.7.

Table 3: Cronbach Reliability Coefficient test.

Variables	Number of items	Valid items
Management of Clinical Instructional Materials	6	6
Students' acquisition of clinical skills	6	5

Source: Primary data, 2023

In this study, all the items on each variable (Management of Clinical Instructional Materials and Students' acquisition of clinical skills) were above 0.7 when the Cronbach Reliability Coefficient test was computed. The findings from Table 3 above indicated that all the items were reliable.

Table 4: Cronbach Reliability.

Cronbach' Alpha	Cronbach's Alpha based on standardized items	Number of items
0.904	0.901	25

Source: Primary data, 2023

Table 4 given above is the Reliability Statistics Table, which provides the value for Cronbach alpha, which in this case is 0.904 reflecting the high reliability of the measuring instrument. Furthermore, it indicates a high level of internal consistency concerning the specific sample.

Methods of data analysis.

The filled questionnaires were collected, coded, and analyzed using Statistical Package for Social Sciences (IBM SPSS). SPSS is a Windows-based program that could be used to perform data entry and analysis and to create tables and graphs. The quantitative data was analyzed by descriptive statistics of frequencies, percentages, mean, and standard deviations. The inferential statistics used the regression model of statistical analysis.

The data from the interview guide was analyzed through content analysis.

The data were presented in tables for interpretation about the specific objectives which were discussed following the literature review.

Table 5; Measurements of variables.

Variable	Description	Measurement
Students acquisition of skills	History-taking skills Examination skills Carrying out investigations Clinic reasoning skills Documentation skills Communication skills	Ordinal scale: The scale of measurement will be the 5-point Likert scale of strongly Disagree (SD), Disagree (DA), Neutral (N), Agree (A) and strongly Agree (SA).
Management of instructional materials	Teaching Models IEC Materials ICT Equipment Curriculum and teaching guidelines	Ordinal scale: The scale of measurement will be the 5-point Likert scale of strongly Disagree (SD), Disagree (DA), Neutral (N), Agree (A) and strongly Agree (SA).

The scale of measurement was the 5-point Likert scale of strongly Disagree (SD), Disagree (DA), Neutral (N), Agree (A) and strongly Agree (SA).

Ethical considerations.

There was approval of the academic research and the proposal was subject to the Mbale Hospital Research Review Board (HRRB) before instruments were administered to the respondents. The researcher ensured the quality and integrity of the research by obtaining informed consent from respondents, confidentiality, the anonymity of respondents, voluntary participation, and avoiding harm to participants the researcher was impartial and cited all sources of data to prevent issues of plagiarism.

DATA PRESENTATION, INTERPRETATION, ANALYSIS AND DISCUSSION OF FINDINGS.

Response rates.

The study sought the response rates of the respondents with the intent of generalizing results to the population sampled. In this study, the targeted sample size was 127 of (123) Medical staff and (4) ward in-charges as presented in Table 6.

Table 6: A response rate of respondents.

Category of respondent	Sample size (N=127)	Actual responses (N=124)	Percent
Medical staff	123	120	97.6
Ward in-charges	4	4	100
Total	127	124	97.6

Source: Primary data, 2023

Consistent with Table 6, the researcher administered 123 questionnaires to the medical staff. A total of 120 questionnaires were returned fully completed, giving rise to a response rate of 97.6%. This number was fully exploited in further computational analysis of the data. Since the study was triangulated, the researcher also managed to schedule interviews with the key informants (Ward in-charges). The researcher was able to obtain a high response rate because he utilized the capacity of the two (2) research assistants who were versatile and industrious in this study.

Demographic characteristics of respondents.

The demographic information collected from the respondents included Gender, the highest level of education, period of service, and Profession as presented in Table 7.

Table 7: Demographic characteristics of respondents.

Variables	Categories	Frequency	Percentage (%)
Gender	Male	55	45.8
	Female	65	54.2
Highest level of education	Certificate	11	9.2
	Diploma	57	47.9
	Bachelor's degree	45	37.8
	Master's degree	6	5
Period of service	1-5 years	13	10.8
	6-10 years	42	35.0
	11 years and above	65	54.2
Profession	Medical officer	8	6.7
	Allied Health	46	38.3
	Nurse	53	44.2
	Midwife	13	10.8

Source: Primary data, 2023

Data presented in Table 7 on gender show that female respondents were more than their male counterparts. Among the respondents, females comprised 65(54.2%) of the sample and males comprised 55(45.8%) of the sample interpreted as females being more than their male counterparts. According to Ngobua (2020), a USAID report on Gender Equality and Social Inclusion (GESI) Analysis in Nigeria revealed the overall health workforce is a female-dominated gender which conforms with this study's finding. This facilitated capturing views representative of both gender groups on the Management of Preceptorships on Students' acquisition of clinical skills in Health Training Institutions in Mbale City.

Table 7 shows that the majority of the respondents 57(47.9%) had attained Diplomas, while 45(37.8%) had attained degrees, and 11(9.2%) had attained Certificates. Those with Masters were only 6 (5%) of the sampled population. This was interpreted to mean that the study generated data from an informed pool of respondents whose perceptions contributed to the Management of Preceptorships and Students' acquisition of clinical skills in Health Training Institutions in Mbale City.

It is evidenced from Table 7 that most of the respondents 65(54.2%) had served for 11 years and above, 42(35%) had served between 6 years and 10 years while 13(10.8%) had served between 1 year and 5 years. This was interpreted to mean that different durations of service were represented in the study. This assisted the researcher in capturing diverse opinions according to a period of service on the perception of Management of Clinical Training and Students' acquisition of clinical skills in Health Training Institutions in Mbale City. This finding agrees with the quantitative paradigm of Kanyumba (2022) who used a closed-ended structured questionnaire to elicit responses from 80 healthcare workers at Manama Mission Hospital in Gwanda, Zimbabwe, revealing that practical hands-on experience supported by effective supervisor and guidance from experienced health workers aids effective service delivery.

Data presented in Table 7 on profession show that nurse respondents were more than their counterparts. Among the respondents, nurses comprised 53(44.2%) of the sample, 46(38.3%) were Allied Health, 13(10.8%) were Midwives while 8(6.7%) were medical officers. Whereas nurses were more than their counterparts, the results show that various medical professionals were also involved in the study. This finding conformed with a cross-sectional survey, by Ahmat et al. (2022), of 47 countries in the African Region using a semi-structured questionnaire. Data were collated and analyzed in Epi Info and Microsoft Excel. The results of that study on a total stock of health workers was approximately 3.6 million across 47 countries. Among these, 37% of the health workers were nurses and midwives, 9% were medical doctors, 10% were laboratory personnel, 14% were community health workers, 14% were other health workers, and 12% were administrative and support staff. This facilitated capturing views representative of the various medical professionals on the Management of Preceptorships and Students' acquisition of clinical skills in Health Training Institutions in Mbale City

Analysis of Likert-Type Data.

The questionnaire had three sections that applied the Likert scale questions. The scales used comprised 5-point Likert items ranging from 5 = strongly agree, 4 = agree, 3 =Neutral, 2 = disagree and 1 = strongly disagree. The items in each section ranged from 1 to 8 items. The analysis of the Likert scale was based on Oben's (2021) arguments and weighting criteria that indicated that Strongly Agree (SA) ranges between 4.2 and 5.0; Agree (A) ranges between 3.4 and 4.2; Neutral (N) ranges between 2.6 and 3.4; while Disagree (D) ranges between 1.8 and 2.6; and Strongly Disagree (SD) ranges between 1 and 1.8, hence giving an equidistance of 0.8. This criterion was adhered to during the analysis and interpretation of the results of the Likert-type data.

Descriptive statistics on the study variables included for Management of clinical instructional materials and

Students' acquisition of clinical skills. Descriptive statistics were then presented in the form of percentages, frequencies, mean, and standard deviations.

The respondents were asked to indicate the extent to which they agreed or disagreed with Statements describing the various variables. The items were measured using a 5-point Likert scale ranging from 5 = strongly agree, 4 = agree, 3 = Neutral, 2 = disagree and 1= strongly disagree. Cronbach's Alpha coefficient was used to measure reliability which ranges from 0 to 1 and for this study, the composite Cronbach's Alpha coefficient was 0.904. Standard Deviation being a measure of variations from the mean was computed. As a good estimator of the population means, the standard deviation of the sample means would be near the center (mean) while a large standard deviation would indicate that data points were spread out over a larger rate of values.

Empirical arrangement and analysis of the study findings.

The empirical results are presented, interpreted, and analyzed with the overall goal of demonstrating the influence of the Management of clinical instructional materials on Students' acquisition of clinical skills in Health Training Institutions in Mbale City. The descriptive statistics were approached using frequencies and percentages as illustrated in forth-proceeding discussions. This section provides descriptive statistics before computing inferential statistics. Since the ordinal variable (Likert scale) measure was used in taking care of the Management of Preceptorships, and Students' acquisition of clinical skills. The inferential statistics were used to measure the level at which one variable was affected by another. This was done using a regression analysis as presented later in this report.

State of students' acquisition of clinical skills in Health Training Institutions in Mbale City.

The researcher probed respondents on the state of Students' acquisition of clinical skills in Health Training Institutions in Mbale City. In exercising the probing session, the researcher used primary data sources, suggesting that primary data was used in the testing of hypotheses and frequencies about Students' acquisition of clinical skills as presented in Table 8.

Table 8: Frequencies for Students' acquisition of clinical skills.

Students' acquisition of clinical	SD	D	N	A	SA	Mean	Std.Dev
Students gain adequate competencies in taking history from patients and caretakers	7 (5.8%)	48 (40%)	30 (25%)	29 (24.2%)	6 (5%)	2.83	1.026
Students can perform a thorough patient examination to elicit patients' diagnostic signs	10 (8.3%)	44 (36.7%)	37 (30.8%)	24 (20%)	4 (3.3%)	2.73	0.989
Students can communicate professionally during patient care to exhibit professional ethics	2 (1.7%)	34 (28.3%)	45 (37.5%)	33 (27.5%)	6 (5%)	3.06	0.91
Students' level of documentation of clinical findings follows ethical and standard guidelines	4 (3.3%)	31 (25.8%)	54 (45%)	27 (22.5%)	4 (3.3%)	2.97	0.869
The graduate students can provide health care services to the community with minimal supervision	1 (0.8%)	24 (20.2%)	50 (42%)	40 (33.6%)	4 (3.4%)	3.18	0.823
Students refer patients to higher-level management as a result of skills deficits	4 (3.4%)	3 (2.5%)	19 (16%)	67 (56.3%)	26 (21.8%)	3.91	0.883

Source: Primary data, 2023 ***Note: SD=strongly disagree, D=Disagree, N=Neutral, A=Agree, SA=strongly agree***

Table 8 revealed that the majority of the respondents 55(45.8%) refuted (disagreed and strongly disagreed) that students gain adequate competencies in taking history from patients and caretakers. 30(25%) preferred to be non-committal to the statement. However, 35(29.2%) conceded with the statement. Founded on the Mean=2.83 and the standard deviation=1.026, it comes perhaps true that the respondents preferred to be non-committal to this statement. From this analysis, an interpretation can be made that perhaps clinical reasoning skills and documentation skills are significant pointers of students' acquisition of clinical skills in Health Training Institutions in Mbale City for which acquisition of clinical skills is underscored.

An interviewee from the preceptor in the Health Training Institution in Mbale City named MBA – 03 had this to say: *"not sure whether our students gain adequate competences in taking history from patients"* [Date: 14-07-2023, Source: Primary information from key informant]

The above statement seems to indicate that some respondents conceded that perhaps students may not be gaining adequate competencies in taking history from patients.

Moreover, the majority of the respondents 54(45%) also refuted that students can perform a thorough patient examination to elicit patients' diagnostic signs. A moderately larger percentage 37(30.8%) preferred to be non-committal to the statement. Instituted on the Mean=2.73

and the standard deviation=0.989, it follows that perhaps the respondents preferred to be non-committal to this statement. This was interpreted to mean that perhaps examination skills and carrying out investigations are significant indicators of students' acquisition of clinical skills in Health Training Institutions in Mbale City for which acquisition of clinical skills is still a distant reality.

When the researcher sought the opinions of the respondents on whether students can communicate professionally during patient care to exhibit professional ethics, 36(30%) of the respondents refuted the statement. This could be attributed to the fact that students' level of documentation of clinical findings rarely follows ethical and standard guidelines (Mean=2.97, standard deviation=0.869). An interviewee from the preceptor in the Health Training Institution in Mbale City named MBA – 04 had this to say:

"Majority leave the institution when they can communicate professionally" [Date: 14-07-2023, Source: Primary information from key informant]

The above statement seems to indicate that some respondents conceded that students can communicate professionally during patient care to exhibit professional ethics.

There is significant evidence from Table 8 that graduate students can provide health care services to the community with minimal supervision (Mean=3.18, Standard deviation=0.823). Based on the Mean score=2.73 and the standard deviation=0.989, it follows that the respondents agreed with the statement. This was interpreted to mean that perhaps history-taking skills, examination skills, carrying out investigations, clinical reasoning skills, and documentation skills significantly predict well students' acquisition of clinical skills in Health Training Institutions in Mbale City for which acquisition of clinical skills is scored.

Results in Table 8 show that perhaps students refer patients to higher-level management as a result of skills deficits. The results revealed that the majority 93(78.1%) of the respondents conceded with the statement. A small percentage of 7(5.9%) refuted the statement while 19(16%) were neutral on this statement. This result was interpreted to mean that perhaps history-taking skills, examination skills, carrying out investigations, clinical reasoning skills, and documentation skills significantly predict well students' acquisition of clinical skills in Health Training Institutions in Mbale City for which acquisition of clinical skills is scored.

Management of clinical instructional materials and students' acquisition of clinical skills.

Concerning study objective three, the researcher probed respondents on the effect of the Management of clinical instructional materials on the students' acquisition of clinical skills in Health Training Institutions in Mbale City. The results of the computations are presented in Table 9.

Table 9: Frequencies for Management of Clinical Instructional Materials.

Statements	SD	D	N	A	SA	Mean	Std.Dev
Provision of different clinical instructional materials is being done in the hospital	25 (20.8%)	53 (44.2%)	29 (24.2%)	12 (10%)	1 (0.8%)	2.26	0.93
There is an allocation of adequate space for clinical instructional materials in all hospital departments	28 (23.3%)	48 (40%)	27 (22.5%)	15 (12.5%)	2 (1.7%)	2.29	1.016
Students have access to diagnostic instructional materials while for hospital placements	18 (15%)	47 (39.2%)	21 (17.5%)	30 (25%)	4 (3.3%)	2.63	1.116
Trainers usually improvise equipment used for training students in the hospital	5 (4.2%)	22 (18.5%)	16 (13.4%)	54 (45.4%)	22 (18.5%)	3.55	1.118
There are Information Education Communication (IEC) materials displayed in the hospital to facilitate the training of students	8 (6.8%)	62 (52.5%)	21 (17.8%)	24 (20.3%)	3 (2.5%)	2.59	0.972
National training clinical guidelines such as UCG, policies are available for students training in the hospital	10 (8.3%)	65 (54.2%)	21 (17.5%)	22 (18.3%)	2 (1.7%)	2.51	0.944

Source: Primary data, 2023 ***Note: SD=Strongly disagree, D=Disagree, N=Neutral, A=Agree, SA=Strongly agree***

Results from Table 9 show that there was substantial effort by the Health Training Institutions in Mbale City to improve on Management of clinical instructional materials in the training institutions. Results show that the majority 78(65%) refuted that the provision of different clinical instructional materials was being done in the hospital. 29(24.2%) preferred to be non-committal to the statement while only 13(10.8%) conceded with the statement (Mean=2.26, Standard deviation=0.93). Results also show that there is moderate allocation of adequate space for clinical instructional materials in all hospital departments (Mean= 2.29, Standard deviation=1.016). These results were

interpreted to mean that perhaps teaching models predict well: carrying out investigations, clinical reasoning skills, history-taking skills, examination skills, and documentation skills. An interviewee from the preceptor in the Health Training Institution in Mbale City named MBA – 03 had this to say:

"Adequate space for demonstration of clinical instructional materials in my hospital departments has been a challenge for a long time" [Date: 14-07-2023, Source: Primary information from key informant]

The above statement seems to indicate that some respondents conceded that they had a problem with space.

There is significant evidence that perhaps students have moderate access to diagnostic instructional materials while for hospital placements (Mean=2.63, standard deviation=1.116). This phenomenon has perhaps forced some trainers to usually improvise equipment used for training students in the hospital (Mean=3.55, standard deviation=1.118). This was interpreted to mean that perhaps teaching models predict well: carrying out investigations, clinical reasoning skills, history-taking skills, examination skills, and documentation skills. Thus far, results point out that gaps are still prevailing in accessing diagnostic instructional materials and teaching models for which students' acquisition of clinical skills may be underscored. However, an interviewee from the preceptor in the Health Training Institution in Mbale City named MBA – 01 concerning accessing diagnostic instructional materials and teaching models had this to say:

"as a department, we normally improvise a variety of printed, teaching models, instructional materials, demonstration, and audio-visual materials to facilitate teaching and learning" [Date: 14-07-2023, Source: Primary information from key informant]

The above statement seems to indicate that some respondents conceded that improvising diagnostic instructional materials and teaching models greatly promotes students' acquisition of skills in Health Training Institutions in Mbale City.

The above finding coincides with the findings of earlier researchers. For instance, Agba (2019) and Nantanda et al, (2020) found a significant influence between knowledge and skills and training needs. This is perhaps justifiable because the reviewed literature by Crouch et al., (2016) showed that improvisation develops one's: imagination and ability to generate new ideas, spontaneity, and the ability to present without preconceived ideas. Equally, Mustafa et al., (2022) concur that the importance of improvisation in teaching and learning science cannot be over-emphasized as improvised materials, if well chosen, utilized, and appropriately integrated into science teaching and learning, may equip students with significant learning performance, thereby increasing learning achievement and retention tremendously through physical skills (use of tools) for which students' acquisition of clinical skills in Health Training Institutions may be scored.

Furthermore, Keegan et al. (2016) opine that the providence of different clinical instructional materials is a significant factor in students' acquisition of clinical skills in Health Training Institutions as it enables the learners to have lasting memories of what they have observed. This affirms that the providence of different clinical instructional materials predicts well history-taking skills, examination skills, carrying out investigations, clinical reasoning skills, and documentation skills for which students' acquisition of clinical skills in Health Training Institutions is scored.

As regards whether there are Information Education Communication (IEC) materials displayed in the hospital to facilitate the training of students, results show that the majority of the respondents refuted the statement (Mean= 2.59, standard deviation=0.972). There is also substantial evidence that National training clinical guidelines such as UCG, policies are rarely available for students training in the hospital (Mean=2.51, Standard deviation=0.944). These results were interpreted to mean that perhaps IEC materials and ICT equipment predicted well: carrying out investigations, clinical reasoning skills, history-taking skills, examination skills, and documentation skills. Nevertheless, results point out that gaps are still prevailing that may need to be mended especially in IEC materials and ICT equipment for which students' acquisition of clinical skills may be scored in the Health Training Institutions in Mbale City.

Hypothesis testing.

Is there an influence of the management of clinical instructional materials on students' acquisition of clinical skills in health training institutions?

$H_0$3: There is no statistically significant influence of the management of clinical instructional materials on students' acquisition of clinical skills in Health Training Institutions.

Similarly, the Regression Analysis coefficients were computed to estimate the strength of the influence between the study variables. The results are reflected in Table 10.

Table 10: Model summary of the management of clinical instructional materials on students' acquisition of clinical skills.

Model	R	R square	Adjusted R square	Std. The error of the estimate
1	0.572	0.327	0.321	0.493

Predictor: (Constant), management of clinical instructional materials
Source: Primary data, 2023

Table 10 presents the model summary of the management of clinical instructional materials on students' acquisition of clinical skills. The study findings R^2=0.327 and adjusted R square of 0.321 imply that the management of clinical

instructional materials account for 32.7% of the variance in Students' acquisition of clinical skills. This was interpreted to mean that there are factors other than the management of clinical instructional materials that contribute to students' acquisition of clinical skills in Health Training Institutions in Mbale City.

To evaluate the overall significance of the regression model for the management of clinical instructional materials on students' acquisition of clinical skills, Analysis of variance (ANOVA) and regression coefficients were generated using SPSS version 26 and the results are presented in Table 11.

Table 11: ANOVA and Regression coefficients for management of clinical instructional materials on Students' acquisition of clinical skills.

Model		Sum of Squares	Df	Mean Square	Standardized Beta coefficients	t	F	Sig.
1	Regression	13.904	1	13.904			57.274	0.000
	Residual	28.646	118	0.243				
	Total	42.550	119		0.572	8.505		

a. Dependent Variable: Students' acquisition of clinical skills

b. Predictor: (Constant), management of clinical instructional materials

In determining whether a regression model is significant, the decision rule is that the calculated p-value (level of significance) must be less than or equal to 0.05. Since the calculated p-value of 0.000 is less than 0.05, the regression model was found to be statistically significant ($F=57.274$, $Df=1$, $\rho< 0.05$). This was interpreted to mean that the management of clinical instructional materials has a moderately significant influence on students' acquisition of clinical skills in Health Training Institutions in Mbale City.

To establish whether the management of clinical instructional materials is an interpreter of students' acquisition of clinical skills and determine the magnitude to which management of clinical instructional materials contributes to students' acquisition of clinical skills, standardized Beta and t coefficients were generated as presented in Table 11. For the magnitude to be significant, the decision rule is that the t-value must not be close to 0 and the p-value must be less than or equal to 0.05. Since the t – the t-value of 8.505 is not close to 0, and the p-value <0.05 (=0.000), the study confirmed that the management of clinical instructional materials is the interpreter of students' acquisition of clinical skills.

The null hypothesis, that there is no statistically significant influence of management of clinical instructional materials on students' acquisition of clinical skills in Health Training Institutions was rejected. The results from the table further show a standardized Beta coefficient of 0.572 means that; every 1-unit enhancement in the management of clinical instructional materials will lead to an increase of 0.572 in students' acquisition of clinical skills.

CONCLUSION.

Management of clinical instructional materials has a moderately significant positive influence on Students' acquisition of clinical skills. This was interpreted to mean that if Health Training Institutions in Mbale City enhance the Management of clinical instructional materials, there will be a moderate substantial improvement in Students' acquisition of clinical skills. In this study, Management of clinical instructional materials was rated at position number three in influence on Students' acquisition of clinical skills out of the 3 study variables.

RECOMMENDATION.

For the Management of clinical instructional materials, the study recommends that Health Training Institutions in Mbale City further boost the Management of clinical instructional materials towards supporting Students' acquisition of clinical skills. This is significant because clinical instructional materials provide the educator with tools to deliver educational messages creatively, clearly, accurately, and in a timely fashion. They help the educator reinforce information, clarify abstract concepts, and simplify complex messages. At the policy level, this could be achieved by perhaps encouraging students to come up with some clinical instructional materials.

AREAS OF FURTHER RESEARCH.

Further studies can be conducted in such areas that can improve the training of medical students in Uganda:

- The effects of management of technological advances on students' clinical clerkship placement in hospitals
- The influence of mentorship motivation on the medical student's completion rates in health training institutions.

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ABBREVIATIONS AND ACRONYMS.

HOD: Head of Department
ICT: Information Communication and Technology
IEC: Information Education and Communication materials
IV: Independent Variable
MRRH: Mbale Regional Referral Hospital
GESI: Gender Equality and Social Inclusion

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