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Evaluation of the National HIV Integrated Training Course at Kijabe hospital, Kiambu County, Kenya

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Abstract
Evaluation of a training program is the systematic process of analyzing inputs, services, outputs, outcomes and impacts of a training program. HIV medicine is decentralized and faces myriad challenges in prevention, diagnosis and management. Health care workers possess inadequate knowledge and skills to handle these challenges. The main objective was to evaluate HIV integrated training course at Kijabe hospital. The specific objectives were to assess availability of training resources and establishing student's perception to learning, teaching, student academic self-reflection and social environment. Targeted population was 117, but 101 respondents were received, 12 from mentors and 89 from students. Random sampling method was used to select the participants. Electronic questionnaire was administered to both mentors and students. Descriptive statistics using tables, frequencies and percentages was used to analyze data using STATA version 17. Frequencies on mentor's preparation and format of training, was calculated, items tested were 13, with aggregate score of 151, mean of 2.583 and standard deviation of 0.514. Aggregated score for student perception to learning, teaching items, academic self-perception and environmental perception was calculated. Items tested were 42, with aggregates score of 11,527, mean of 129.516 and standard deviation of 20.035.2 sample t-test to test for availability of resources and student perception at 95% confidence interval (C.I), had p-value of <0.0000, which had statistical significance. In conclusion, availability of training resources had no statistically significant results. Student had greater perception in all four areas. Researcher recommends mentors to adopt a competence-based approach in teaching and student centered learning.

Key words
Training, Perception, Student, students, HIV, Learning, Mentors, Teaching, NHITC

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I. Introduction

Evaluation of a training program is a systematic task of analysing the training program, to make ensure that it is delivered effectively and efficiently and is fit for the purpose it was designed for (Andale's, 2021). The main aim of a program evaluation is to identify training gaps and collect feedback from trainers, students, and other stakeholders to enable them to discover opportunities for improving training. Evaluation helps in determining whether inputs, services, outputs, outcomes, and impacts are achieved as indeed by the training program (Andale's, 2021). Training program evaluation is an essential phase of curriculum development. The faculty discovers whether a curriculum is fulfilling its purpose and whether students are learning through evaluation.

Globally evaluation was used to determine the effectiveness and efficiency of investments made in building up human resources for health in HIV, tuberculosis, and malaria (Shishi W, 2017). In sub-Saharan Africa, HIV training was done in countries like Cameroon, Mozambique, and Kenya in evaluating HIV training in assisted partner notification services to identify strategies used in these countries and facilitators' barriers with implementation in sub-Saharan Africa (Han H, 2019). In Kenya evaluation has been used in evaluating training in the adolescent package of care (APOC) at Family AIDS care and education services (FACES) -supported sites, community HIV-based self-testing, and point of care HIV testing (Mburu, 2019).

Several models have been adopted in evaluating training programs. These models include the Kirkpatrick model, Tyler's model, CIPP model, Stakes model, Rodgers model, and Screven's model Tyler's Model. In this study Kirkpatrick model was used to evaluate the national HIV integrated training course since the model is globally used for evaluating training and learning programs both formally and informally and rates them against four levels. The model simplicity and easily comprehendible, and is pragmatic way of helping practitioners think about training programs. Kirkpatrick's four levels of evaluation consist of student reaction, learning, behavior, and results fit the research objectives (Kirkpatrick, 1994)

In 2018, NASCOP introduced harmonized HIV curriculum, which embraces a competency-based approach. The NHITC takes twelve weeks, where the student has 10 weeks of self-guided learning and two weeks of face-to-face clinical mentorship in the facility (Nascop, 2018).

The students are assessed both pre-test and post-test and a pass mark of 70% is used to determine whether learning took place. Clinical log books are used by the students to asses clinical skills in various sections of clinical rotations including HIV testing services, triaging of patients, enrolling patients to care, offering a standard package of care, and following up of patients in the chronic care model (Nascop, 2018). The students fill out feedback forms for evaluation of both the facilitators, learning materials, clinical placements, and overall training during the learning period. (Nascop, 2018)

Dundee Ready Education Environment Measure was used to measure student perception of learning, teachers, self-perception, academic and social environment (Kirkpatrick level 1 and 2), Kirkpatrick level 3 and 4 mentors, and HIV implementing partners (key informants) to give feedback on student performance (Susan, 2012).

II. Objectives

The main objective of the study was to evaluate the National HIV integrated training course at Kijabe hospital, Kiambu County, Kenya. The specific objectives of the study were;

1) To assess the availability of training resources for NHITC at Kijabe hospital, Kiambu county, Kenya
2) To establish student perception of learning NHITC at Kijabe hospital, Kiambu county, Kenya
3) To establish student perception of teaching NHITC at Kijabe hospital, Kiambu county, Kenya
4) To determine student academic self-reflection in NHITC at Kijabe hospital, Kiambu county, Kenya
5) To establish student perception of social-environment in NHITC at Kijabe hospital, Kiambu County, Kenya

III. Methods

The study employed a cross-sectional descriptive method, based on Kirkpatrick model to evaluate national HIV integrated training course for health workers, to determine availability of training resources and student perception to learning environment.

Quantitative data was obtained for assessment of availability of training resources using a checklist and both qualitative and quantitative data was obtained to establish health care professional's perception through structured questionnaires using the DREEM tool.

IV. Results

The data collected was verified, validated, and coded for analysis. STATA version 17was used to perform the data.106 responses were received, of which 12 were from mentors and 94 from students. Among the responses received from participants, 12(100%) for mentors and 89(95%) for students were completed.

The Cronbach alpha for reliability was 0.9 for students, suggesting high internal consistency of our scale, and the Cronbach alpha was 0.7, suggesting acceptable internal consistency.

Table 1. Reliability of the statistics

Student reliability Statistics

Cronbach's Alpha	N of Items
0.9	42

Mentors reliability Statistics

Cronbach's Alpha	N of Items
0.7	13

4.1Demographic characteristics

Mentors and students' characteristics were sought, for ranging from gender, carder, and years of experience, age, and prior participation in NHITC training. Gender presentation was equally distributed among mentors (60%).Half of the mentors, 6 (50%), were clinical officers, HTS counsellors, and consultants, each at 16.7% (2), with at least 1(8.3%) nurse and nutritionist.

Out of 12 mentors, 6(50%) had years of experience between 11 and 15 years, and 3 (25%) had 6 to 10 years. At least two (16.7%) between the ages of one and five, with at least one (8.3%) over the age of twenty. The result also showed that most 9 (75%) of the mentors were between 31 and 40 years of age, and all the mentors had training in NHITC.

Among student respondents, 52.8% (47) were male and 47.2% (42) were female. 50(56.2%) of the students were clinical officers. 17 (19.1%) were nursing officers, 11 (12.4%) were medical residents, 4(4.5%) were clinical officers and mentors, with at least 2,(2.2%) being medical officers and 1(1.1%) being a medical consultant.

Out of 89 students, 33 (37.1%),had between 1 to 5 years of experience, 26(29.2%), had 6 to 10 years of experience. 15(16.9%) had 11 to 15 years of experience, 8(9.0%), had more than 20 years of experience , 6(6.7%) had less than 1 year of experience ,and at least 1(1.1), had 16 to 20 years of experience in HIV medicine.

According to the findings, the majority of 51, (57.3%) were in between the ages of 31 and 40, 30 (33.7%) were between the ages of 20 and 30, 6 (6.7%) were in between the ages of 41 to 50, and 2 (2.2%) were over 50.80(89.9%) had participated in NHITC training before, and only 9(10.1%) had not participated in NHITC before.The summary is as shown in table 2

Table 2. Demographic characteristics

Charateristics	Mentors(n,%)	Students(n,%)
Gender		
Male	6(50%)	47(52.8%)
Female	6(50%)	42(47.2%)
Age(yrs)		
20 to 30 years	2(16.7%)	30(33.7%)
31 to 40 years	9(75%)	51(57.3%)
41 to 50 years	1(8.3%)	6(6.7%)
Above 50 years		2(2.2%)
Professional cadre		
Mentors		4(4.5%)
Consultants	2(16.7%)	1(1.1)
Medical residents		11(12.4%)
Medical Officers		2(2.2%)
Clinical Officers	6(50%)	50(56.2%)
Nursing Officers	1(8.3%)	17(19.1)
Nutriotionist	1(8.3%)	
HTS consellors	2(16.2%)	
Medical/Clinical officers Interns		4(4.5%)
Years of experience		
Less than 1 year		6(6.7%)
1 to 5 years	2(16.7%)	33(37.1%)
6 to 10 years	3(25%)	26(29.2%)
11 to 15 years	6(50%)	15(16.9%)
16 to 20 years		1(1.1%)
Above 20 years	1(8.3%)	8(9.0%)
Previous participation in NHITC training		
Yes	12(100%)	80(89.9%)
No		9(10.1%)

Evaluation of training resources (Mentors)

To assess the availability of training resources for NHITC at Kijabe hospital, participants' opinions were rated using a checklist where 0 was "no" or "not observed" and 1 was "yes" or "observed."

Out of 12 mentors assessed, 12(100%) the training materials were gathered and checked for accuracy, completeness, and legibility. The training aids and materials (tests, student handouts, projector, screen) were organized for effective and efficient use by the 12(100%) mentors, 12(100%) confirmed that the training area was set up for effective instruction prior to training (lighting, seating, supplies) and only 1(9.3 %) mentor did not observe administrative materials.

All 12, (100%) mentors demonstrate the ability to follow a lesson plan and present an overview of the lesson as part of the introduction. 11 (91.7%) provided training objectives at the beginning of class. All 12 mentors, (100%),presented training content as per lesson plan, implemented instructors' and trainees' activities according to lesson plan, reinforced training objectives during the training, and used analogies in applying content to practical situations.12 (100%),encouraged asking subject-matter questions, and only 1(9.1%) of mentors did not give students an opportunity to practice more than once, emphasizing hand-on/critical steps and skills.Summary shown table 3 and figure 2 and figure 3.

Table 3. Evaluation of training resources (Mentors)

Responses n (%)	No (n=1,2.1%)	Yes (n=47, 97.9%)	Total (N=48)	P-value
Mentors advance preparation, n(%)				**0.38**
The training materials were gathered and checked for Accuracy, completeness and legibility	0(0.0)	12(100.0)	12(100.0)	
Training aids and materials (tests, student handouts, projector, screen) were organized for effective and efficient use	0(0.0)	12(100.0)	12(100.0)	
Administrative materials (attendance sheets) were available	1(8.3)	11(91.7)	12(100.0)	
Training area was set up for effective instruction prio to Training (lighting, seating, supplies)	0(0.0)	12(100.0)	12(100.0)	
Format of training materialsby mentor's n(%)				**0.5**
An overview of the session was presented as part of the introduction	0(0.0)	12(100.0)	12(100.0)	
Training objectives were provided at the beginning of the class	1(8.3)	11(91.7)	12(100.0)	
Training content was presented according to lesson plan	0(0.0)	12(100.0)	12(100.0)	
Instructors/trainee activities were implemented according to the plan	0(0.0)	11(100.0)	11(100.0)	
The mentor demonstrated ability to make facilitation meaningful for the trainees	0(0.0)	12(100.0)	12(100.0)	
Objectives were reinforced during the training	0(0.0)	12(100.0)	12(100.0)	
Examples and analogies were used to apply the content to practical situation	0(0.0)	12(100.0)	12(100.0)	
Asking subject-matter question was encouraged	0(0.0)	12(100.0)	12(100.0)	
I give student an opportunity to practice more than once, emphasizing hands-on/critical steps and skills	1(9.1)	10(90.9)	11(100.0)	

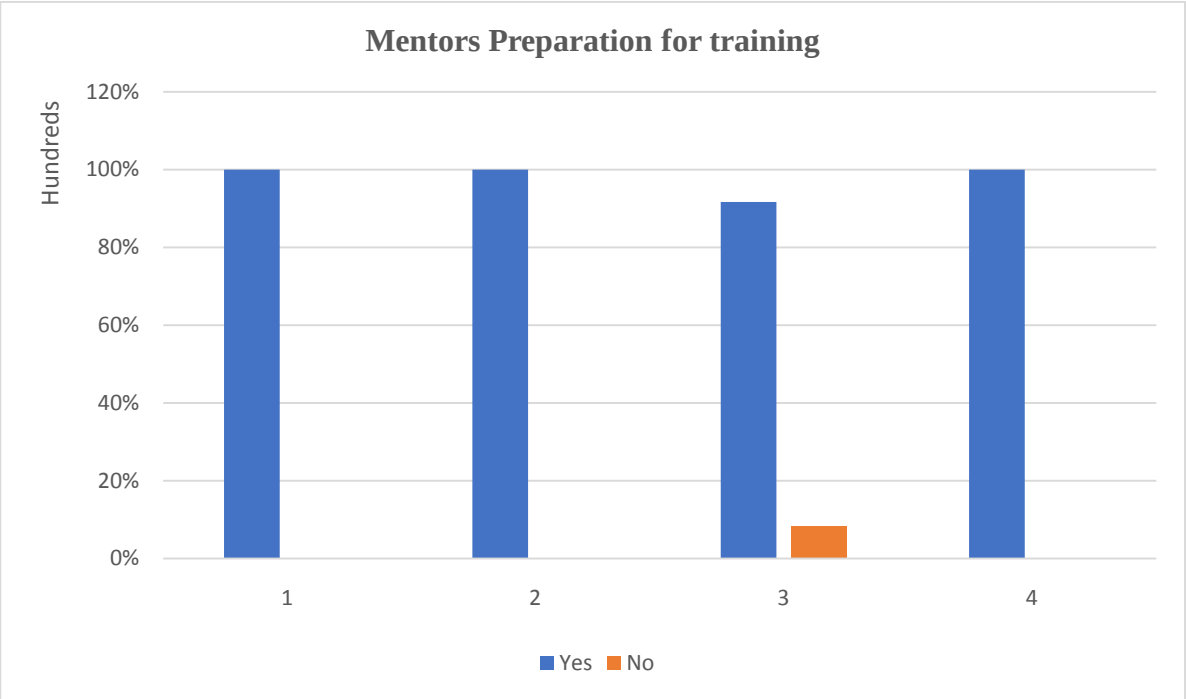

Figure 1. Mentors' preparation for training (training resources)

	Key
1	The training materials were gathered and checked for Accuracy, completeness and
2	Training aids and materials (tests, student handouts, projector, screen) were or
3	Administrative materials (attendance sheets) were available
4	Training area was set up for effective instruction prior to Training (lighting, s

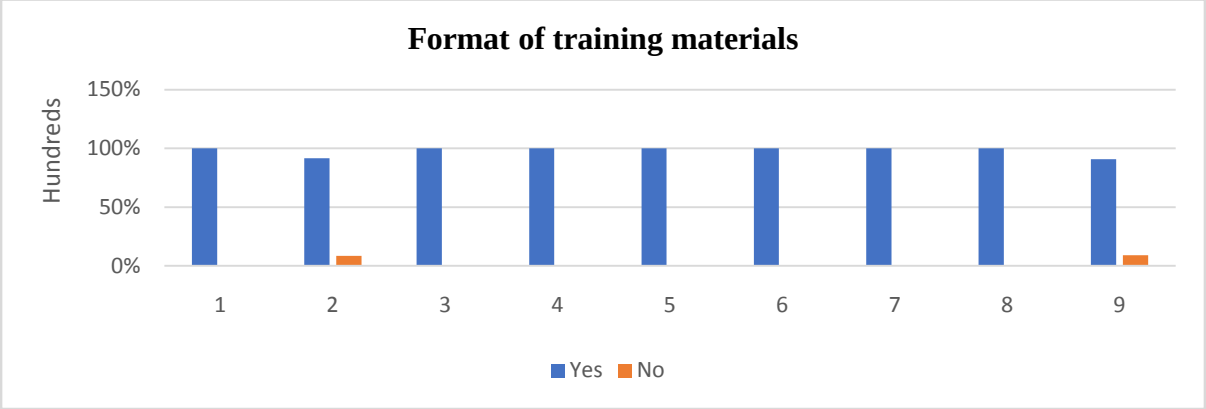

Figure 2.Format of training materials (training resources)

	Key
1	An overview of the session was presented as part of the introduction
2	Training objectives were provided at the beginning of the class
3	Training content was presented according to lesson plan
4	Instructors/trainee activities were implemented according to the plan
5	Instructors trainee activities were implemented according to the plan
6	Objectives were reinforced during the training
7	Examples and analogies were used to apply the content to practical situation
8	Asking subject-matter question was encouraged
9	I give student an opportunity to practice more than once, emphasizing hands-on

Student perception to learning NHITC at Kijabe hospital, Kiambu county, Kenya

The aggregate score of students was calculated in order to establish the student perception of learning. Where 0 indicated low perception, 2 indicated neutrality, 3 and 4 indicated greater perception. 89 students responded to stimulation to actively participate in the classroom, where 3(3.4%) had low perception, 5 (5.6%) were neutral, and 81(91%) had greater perception. Out of 89 students who responded that the adopted teaching was stimulating, 5 (5.6%) had a low perception, 4(4.5%) were neutral, and 80(89.9%) had a great perception on whether the teaching was student-centered 2(2.2%) had low perception, 7(7.9%) were neutral, and 80(89.9%) had greater perception. Out of 89 students who responded to whether teaching was concerned with developing their competencies, 2(2.2%) had low perception and 87(97.8 %) had great perception. 88 students who responded that the teaching was cohesive and focused 3(3.4%) had low perception, 2(2.3%) were neutral, and 83 (94.3%) had greater perception. There were 89 students who responded, with 3 (3.4%) having a low perception, 4 (4.5%) neutral, and 82 (92.1%) having a higher perception.

The majority of 82 (92.1%) respondents felt that time spent on teaching was well spent, with only 5 (5.6%) neutral and 2 (2.2%) having a negative perception. 88 students were asked whether they thought teaching emphasized memorization of facts; 21 (23.9%) thought it did, 10 (11.4%) thought it did not, and 57 (64.8%) thought it did. Out of 87 students, the majority (83, 95.4) were sure about the goals of the course, with only 2(2.3%) having a low perception and 2(2.3%) neutral.

Whether the school encouraged the student to pursue their own learning goals, out of 87 respondents, 3(3.4) had a low perception, 6(6.9%) and 78(89.7%) had a greater perception. The importance of continuing education was emphasized by the majority of 85 (97.75%) respondents, with only 1 (1.1%) having a low perception and being neutral. Out of 88 students, half (50%) had a low perception that the teaching was focused on the teacher, 13 (14.8%) were neutral, and 31(35.2%) said the teaching was focused on the teacher. The summary is shown in table 4 and figure 3.

Table 4. Evaluation of training resources (Mentors)

learning perception items	Lower Perception (0&1)	Neutral (2)	Greater perception (3 &4)	Total
I am stimulated to actively participate in classroom	3(3.4)	5(5.6)	81(91.0)	89
The adopted teaching is stimulating	5(5.6)	4(4.5)	80(89.9)	89
Teaching is student centered	2(2.2)	7(7.9)	80(89.9)	89
Teaching are concerned with developing my competencies	2(2.2)	0(0.0)	87(97.8)	89
Teachings are cohesive and focused	3(3.4)	2(2.3)	83(94.3)	88
Teaching method is concerned with developing my confidence	3(3.4)	4(4.5)	82(92.1)	89
The time for teaching is well spend	2(2.2)	5(5.6)	82(92.1)	89
The teaching emphasizes on memorizing facts	21(23.9)	10(11.4)	57(64.8)	88
I'm sure about the goals for the course	2(2.3)	2(2.3)	83(95.4)	87
The school encourages me to pursue my own Learning needs	3(3.4)	6(6.9)	78(89.7)	87
The importance of continued education is emphasized	1(1.1)	1(1.1)	85(97.7)	87
The teaching is very focused on the teacher	44(50.0)	13(14.8)	31(35.2)	88

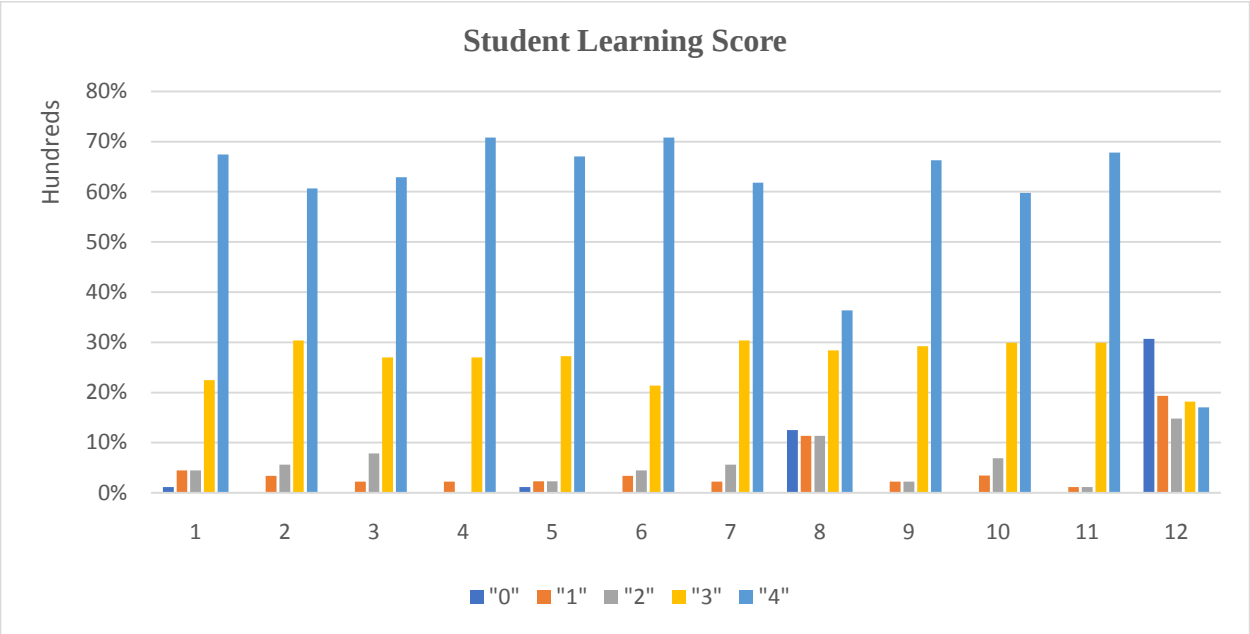

Figure 3. Student-learning perception

	Key
1	I am stimulated to actively participate in classroom
2	The adopted teaching is stimulating
3	Teaching is student centered
4	Teaching are concerned with developing my competencies
5	Teachings are cohesive and focused
6	Teaching method is concerned with developing my confidence
7	The time for teaching is well spend
8	The teaching emphasizes on memorizing facts
9	I'm sure about the goals for the course
10	The school encourages me to pursue my own Learning needs

11	The importance of continued education is Emphasized
12	The teaching is very focused on the teacher

To establish student perception to teaching NHITC at Kijabe hospital, Kiambu county, Kenya

In establishing student perception of teaching, the aggregate score of students was calculated. Where 0 indicated low perception, 2 indicated neutrality, and 3 and 4 indicated greater perception. Out of 88 students who responded to whether they understood the teacher, 1 (1.1%) did not understand the teacher, 2(2.3%) were neutral, and 85(96.6%) understood the teacher in class. The majority of the students, 86 (97.7%) responded that the teacher showed patience to patients, whereas 1(1.1%) had a low perception and 1(1.1%) were neutral. When asked if the teacher had shown a lampoon to a student, 83 students responded, with 27 (32.5%) having a low perception, 13 (15.7%) neutral, and 43 (51.8%) having a higher perception. Out of 87 students, 46 (52.9%) responded that teachers were authoritative, 15 (17.2%) were neutral, and 26(29.9%) responded that teachers were not authoritative. Teachers were perceived to be able to communicate well with patients by the majority of 82 (97.6%), with only 1 (1.2%) having low and neutral perception. Of 87 respondents, 83 (95.4%) affirmed that teachers gave good feedback to the students.

79(93%) confirmed that teachers gave constructive criticism, with only 3(3.5%) responding that teachers did not give constructive feedback and 3(3.5%) being neutral. Out of 87 students, the majority (85(98.8%) responded that teachers gave out clear examples, with only 1(1.1%) responding that teachers did not give out clear examples, and 1(1.1%) being neutral.

Out of 87 respondents, the majority (84, or 96.6%) responded that teachers were prepared for the class; 1(1.1%) responded that teachers were not prepared for the class; and 2 (2.3%) were neutral.

Majority 62(71.3%) responded that teachers were not nervous in class, and 25(28.7%) responded the opposite, that teachers were nervous in class. 59(67.8%) responded that the student did not irritate the teachers, 3(3.5%) were neutral; and 25(28.7%) irritated the teachers. The summary is shown in table 5 and figure 4.

Table 5. Teaching Perceptions

Teaching Perception Items	lower perception (0 & 1)	Neutral (2)	Greater Perception (3 & 4))	Total
I understand the teacher in class room	1(1.1)	2(2.3)	85(96.6)	88
Teachers have shown patience towards patients	1(1.1)	1(1.1)	86(97.7)	88
Teachers lampoon on student	27(32.5)	13(15.7)	43(51.8)	83
Teachers are authoritative	46(52.9)	15(17.2)	26(29.9)	87
Teachers are able to communicate well with patients	1(1.2)	1(1.2)	82(97.6)	84
Teachers provide good feedback to student	2(2.3)	2(2.3)	83(95.4)	87
Teachers give us constructive criticism	3(3.5)	3(3.5)	79(93)	85
Teachers give out clear examples	1(1.1)	1(1.1)	85(98.8)	87
Teachers are well prepared for classes	1(1.1)	2(2.3)	84(96.6)	87
Teachers are nervous in the classes	62(71.3)	0(0.0)	25(28.7)	87
Student irritate teachers	59((67.8)	3(3.5)	25(28.7)	87

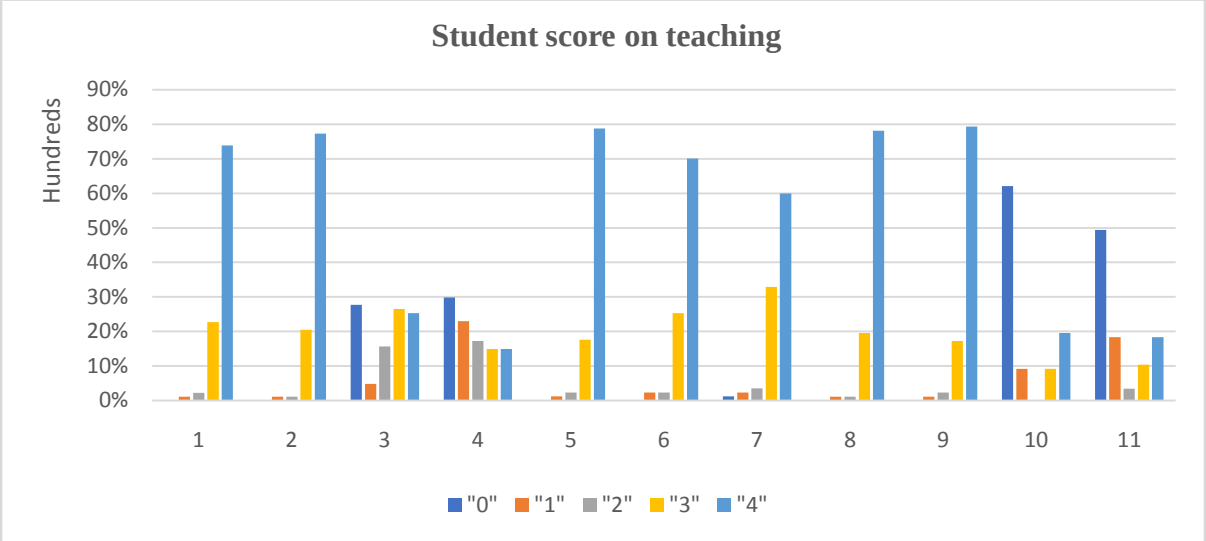

Figure 4. Student perception on teaching

	Key
1	I understand the teacher in class room
2	Teachers have shown patience towards patients
3	Teachers lampoon on student
4	Teachers are authoritative
5	Teachers are able to communicate well with patients
6	Teachers provide good feedback to student
7	Teachers give us constructive criticism
8	Teachers give out clear examples
9	Teachers are well prepared for classes
10	Teachers are nervous in the classes
11	Student irritate teachers

To determine student academic self-reflection in NHITC at Kijabe hospital, Kiambu county, Kenya

In determining student academic self-reflection to NHITC, the aggregate score of students was calculated. Where 0 indicated low perception, 2 neutral, 3, and 4 indicated greater perception. Out of 84 respondents, the majority 72(85.7%), responded that they were studying and working on the course, 4(4.8%) were not working on the course and 8(9.5%) were neutral. Out of 87 respondents, 74(85.1%) were confident of being approved the same year, 4(4.6%) were not confident about being approved and 9(10.3%) were neutral. Out of 87 respondents, the majority 83(95.4%) were well prepared for the profession, 1(1.2%) were not prepared and 3(3.4%) were neutral, and whether previous learning prepared students well for the year, 2(2.3%) said previous learning did not prepare them well, 7(8.0%) were neutral, and 78(89.7%) said previous learning prepared them well.

Out of 87 respondent's majority 73(83.9%), responded that they have good memory capacity for all that they needed, 13(14.9%) were neutral, and only,1(1.2%) responded that they lacked the good memory they needed. The majority of the students 72(92.2%), responded that a search for a solution had been developed in the course. Out of 87 respondents, the majority 82(94.3%) had learned a lot about interpersonal relationships in the profession, 1(1.1%) had learned little about interpersonal relationships and 4(4.6%) of the students were neutral. The summary is shown in table 6 and figure 5.

Table 6. Student Academic self-reflection

Academic self-reflection items	Lower perception (0 & 1)	Neutral (2)	Greater perception (3 & 4)	Total
As before studying also work in this course	4(4.8)	8(9.5)	72(85.7)	84
I am confident that I will be approved this year	4(4.6)	9(10.3)	74(85.1)	87
I feel I am being well prepared for the profession	1(1.2)	3(3.4)	83(95.4)	87
Then learning for the previous prepared me well for this year	2(2.3)	7(8.0)	78(89.7)	87
I have good memory capacity for all I needs	1(1.2)	13(14.9)	73(83.9)	87
The search for solution has been developed in this course	1(1.2)	5(5.9)	79(92.9)	85
I have learned a lot about interpersonal relationship in this profession	1(1.1)	4(4.6)	82(94.3)	87

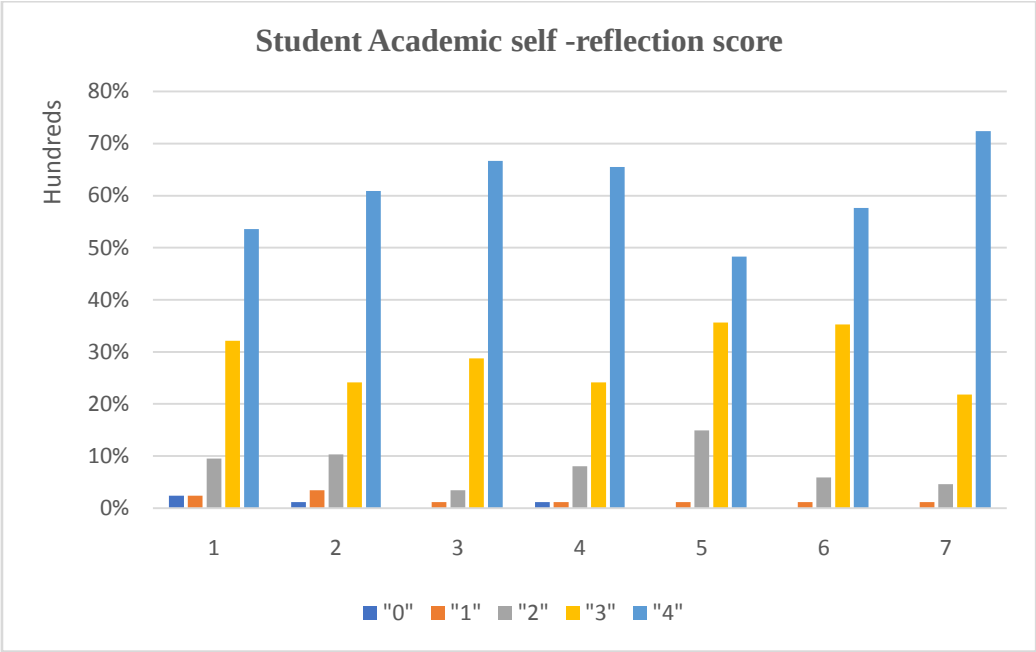

Figure 5. Student academic self-reflection

	Key
1	As before studying also work in this course
2	I am confident that I will be approved this year
3	I feel I am being well prepared for the profession
4	Then learning for the previous prepared me well for this year
5	I have good memory capacity for all I needs
6	The search for solution has been developed in this course
7	I have learned a lot about interpersonal relationship in this profession

To establish student perception to social-environment in NHITC at Kijabe hospital, Kiambu county, Kenya

In establishing student perception of the social -environment, the aggregate score of students was calculated. Where 0 indicated low perception, 2 neutral, 3, and 4 indicated greater perception. majority 81(92%), responded that the environment is quiet during the classroom, 1(1.2%) responded that environment is not, and 6(6.8%) were neutral. Whether the faculty exacts on its course out of 87 respondents, the majority 81(93.1%), said the faculty does, 2(2.3%) said the faculty does not, and 4(4.6%) were neutral.

Out of 88 respondents, the majority 84(95.5%), felt comfortable while in class, 2(2.3%) did not feel comfortable and 2(2.3%) were neutral. The majority of the student 83(94.3%) responded that the environment was peaceful during the learning period, 3(3.4%) responded that the environment was not peaceful and 3(3.4%)

were neutral. The majority 73(83%), said the environment was not disappointing whereas 14(15.9%) said the environment was disappointing.

Out of 88 respondents, the majority 77(87.5%), had good concentrating capacity, 6(6.8%) had the poor concentrating capacity and 5(5.7%) were neutral. Out of 87 respondents, the majority 67(77%) had greater satisfaction than the stress of studying medicine, 9(10.4%) had more stress than satisfaction in studying medicine, and 11(12.6% were neutral. The majority 85(97.7%), said the environment encouraged the student to learn. Most of the students 85(97.7%), had the freedom to ask whatever they wanted in class and 1(1.1%) had no freedom to ask whatever he/she wanted. Out of 88 respondents, the majority 84(95.4%) had an opportunity to develop a practical interpersonal relationship, 1(1.2%) had no opportunity and 3(3.4%) were neutral. The summary is shown in table 7 and figure 6.

Table 7. Student environmental perception

Environmental Perception Items	Lower Perception (0 &1)	Neutral (2)	Greater Perception (3&4)	Total
The environment is quit during classroom	1(1.2)	6(6.8)	81(92.0)	88
The faculty exacts on its courses	2(2.3)	4(4.6)	81(93.1)	87
I feel comfortable in the classroom	2(2.3)	2(2.3)	84(95.5)	88
The environment is peaceful during learning period	2(2.3)	3(3.4)	83(94.3)	88
I have found my experience here disappointing	73(8.3)	1(1.1)	14(15.9)	88
I have good concentrating capacity	6(6.8)	5(5.7)	77(87.5)	88
The satisfaction is greater than the stress of studying medicine	9(10.4)	11(12.6)	67(77.0)	87
The environment encourages me to learn	1(1.2)	2(1.2)	85(97.7)	88
I have opportunity to develop practical interpersonal relationship	1(1.2)	3(3.4)	84(95.4)	88
I feel free to ask whatever I want	1(1.1)	1(1.1)	85(97.7)	87

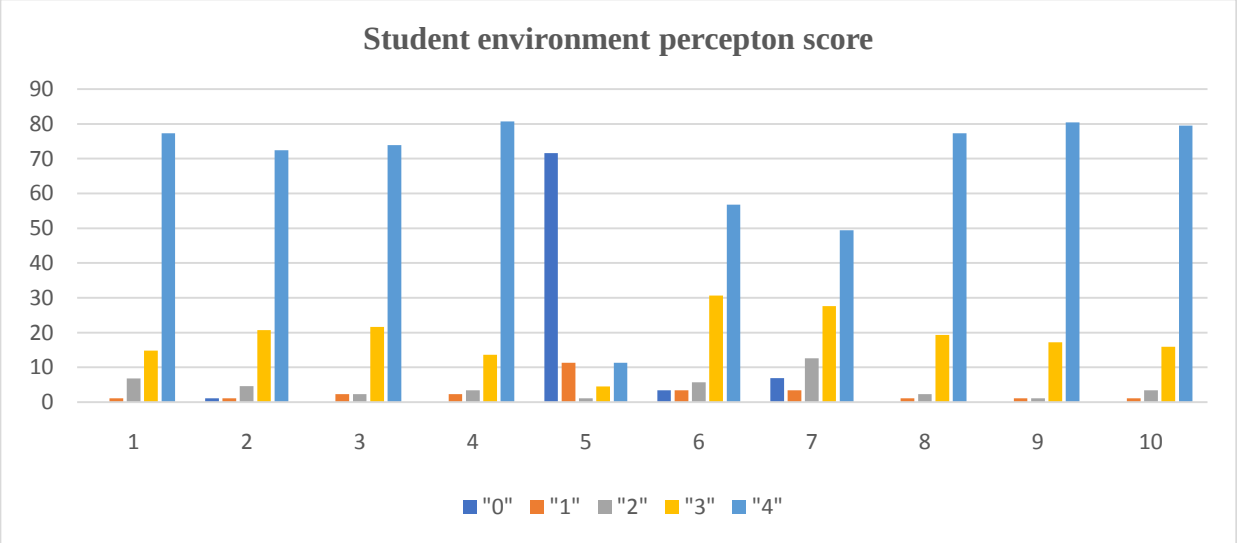

Figure 6. Student perception to social-environment

	Key
1	The environment is quit during classroom
2	The faculty exacts on its courses
3	I feel comfortable in the classroom
4	The environment is peaceful during learning period
5	I have found my experience here disappointing
6	I have good concentrating capacity
7	The satisfaction is greater than the stress of studying medicine

8	The environment encourages me to learn
9	I feel free to ask whatever i want in class
10	I have opportunity to develop practical interpersonal relationship

Aggregate score of availability of training resources(mentors), student perception of learning, teaching items, academic self-perception, and environmental perception.

The aggregate score of items tested for the availability of training resources (mentors) on both in advance preparation and format of training materials was 13, with a total aggregate score of 151, with a min of 12 and a max of 13. Mentors had a standard deviation of 0.51 and a mean of 12.58.

The total items tested in student perception (student perception of learning, teaching, academic self-reflection, environment) were 42, with an aggregate score of 3529, with a min of 36 and a max of 159. The student had a standard deviation of 20.03 and a mean of 129.51. The summary is shown in table 8

Table 8. Aggregate score of both mentors (availability of training resources) and student perceptions

Evaluation of NHITC training	**# items tested**	**Aggregate score**	**(Min, Max)**	**Sd**	**Mean**
Mentors (12)					
Advance preparation	4	47	3,4	0.288675	3.916667
Format of training materials	9	104	8,9	0.492366	8.666667
Total	**13**	**151**	**12,13**	**0.514929**	**12.58333**
Students (89)					
Student perception to learning	12	3529	**11,48**	6.373063	39.65169
Student perception teaching items	11	2770	**0,44**	7.457181	31.1236
Academic self -reflection items	8	2098	**0,28**	5.445782	23.57303
Environment perception items	11	3422	**8,44**	6.283115	38.44944
Total	**42**	**11527**	**36,159**	**20.03526**	**129.5169**

Note: Mentors score (0,1), Student score (0,1,2,3,4)

Aggregate score of availability of training resources(mentors) compared to the student at a 95% confidence interval (C.I)

The comparison between the availability of resources (mentors) observations, student perception number of observations, aggregate mean scores, and standard deviation using a two-sample t-test at a 95 % confidence interval had a p-value of 0.000. The summary is
Shown in table 9

Table 9. The aggregate score of availability of training resources(mentors) compared to the student at a 95% confidence interval (C.I)

Two-sample t test with equal variance

	obs	**mean**	**std.err**	**std. dev**	**95% conf.interval**	
X	89	129.5169	2.1237	20.0353	125.2964	133.7374
Y	12	12.5833	0.1486	0.5149	12.2562	12.9105
Combined	101	115.6238	4.2205	42.4163	107.2503	123.9973
diff		116.9336	5.8091		105.407	128.4602

diff=mean(X)-mean(Y)			t=20.1292
HO: diff=0			degree of freedom =99
Ha: diff<0	Ha:diff !=0	Ha:diff>0	
pr(T<t)=1.000	pr-(ITI >ItI)=0.0000		pr(T>t)=0.0000

V. Discussions

The study found out that both mentors and students were comparable in gender, with a majority of the student being males and the majority of both mentors and students aged between 31 to 40 years. Most of the mentors and students were clinical officers and the majority in both groups had previously participated in NHITC training before. This is opposite to studies done by (Atwa h, 2020) comparing perceptions of both male and female students where the conclusion was that the overall DREEM scale (female 117.59/200 and males 117.59/200) showed that females perceived the learning environment more positive than the male student did.

5.1 Evaluation of training resources (Mentors)

The study found no statistically significant between the mentor's advanced preparations and the format of training (training materials, training aids, administrative materials, content presentation, and lesson plans). This is opposite to the findings of (Kevin k, 2016) which found statistically significant between having a quality HIV care workforce and scaling up the skills of medical providers in expanding the HIV medical workforce and skills of medical providers.

5.2 Student perception

In this study, all the four areas of student perception (perception to learning, perception to teaching, academic self-reflection, and social environment perception) have statistical significance. In all four areas scoring greater perception, which is comparable to other studies done on student perception in assessing teaching behavior across six countries using multi-group confirmatory factor analysis approach in measuring invariance by Jeon (2020), in six cultural contexts at Netherlands, Spain, Turkey, South Africa, South Korea, and Indonesia. The conclusion showed students had a high perception of the learning environment.

The research finding is also comparable with research on student perception of the learning environment and its relation to their study year and performance in Sudan, Yasar A, (2019), whose main objective is to assess the difference in perception of student learning results and their year of study. The overall score indicated a positive perception of the learning environment.

The research findings are also comparable to research findings on the perception of the learning environment among nursing students in colleges in Eastern Nepal cited by Erina Shrestha, (2019)

The results showed academic self-perception with an overall DREEM score of 131.25/200, which indicated strong positive perception of the learning environment by the students.

5.3 Comparison between aggregate scores for the availability of training resources and student perception

Two-sample t-test had a p-value of 0.000 from the results, mentor's preparation and format of training have a statistically significant relationship with student perception of learning, teaching, academic self-reflection, and social-environment.

VI. Conclusions

Objective one sought to assess the availability of training resources for NHITC (mentor's advance preparation and format of training). In conclusion among the factors investigated i.e. training materials, training aids, administrative materials, content presentation, and lesson plans, none had statistically significant results on training resources based on data collected.

Objective two sought to establish the perception of health professionals of NHITC training, factors assessed were student perception of learning, teaching, academic self-reflection, and social environment. The research concluded that students had a greater perception of all the four areas assessed in the research.

Objective three sought to test the association between availability of training resources and student perception of training NHITC, the conclusion drawn is that there is a strong association between having adequate training resources, and how students perceive the training.

VII. Recommendations

7.1 Availability of training resources

The researcher recommends mentoring other trainers from diverse cadres and professions to create a balanced pool of mentors for the HIV program.

7.2 Students perceptions

In all four domains of study, the students had greater perceptions of learning, teaching, academic self-reflection, and social environment, the researcher recommends the mentors adopt a competence-based approach in teaching, and focus more on student-centered learning.

Conflict of interest

The author declare no conflict of interests

References

[1]. Sariah, Adellah, et al. "'Experiences with Disclosure of HIV-Positive Status to the Infected Child': Perspectives of Healthcare Providers in Dar Es Salaam, Tanzania." BMC Public Health, BioMed Central, 13 Oct. 2016, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5064891/.

[2]. Javed, Ahmad. "What Is External Evaluation/Characteristics." EngloPedia, 9 July 2022, https://englopedia.com/what-is-external-evaluation/.

[3]. Saks, Alan M., and Lisa A. Burke. "An Investigation into the Relationship between Training Evaluation and the Transfer of Training." International Journal of Training and Development, vol. 16, no. 2, 2012, pp. 118–127., https://doi.org/10.1111/j.1468-2419.2011.00397.x.

[4]. Alsalamah, Aljawharah, and Carol Callinan. "Directory of Open Access Journals." Education Sciences, MDPI AG, 1 Mar. 2021, https://doaj.org/cookie_consent?continue=%2Farticle%2Fe0e58b28170d4198a9064a28047c03ba.

[5]. Andales, Jai. "Training Evaluation: The Process of Evaluating Training Programs." SafetyCulture, 30 Aug. 2021, https://safetyculture.com/topics/training-evaluation/.

[6]. Bares, Sara H., et al. "Implementation of an HIV Clinic-Based Interprofessional Education Curriculum for Nursing, Medical and Pharmacy Students." Journal of Interprofessional Education & Practice, vol. 11, 2018, pp. 37–42., https://doi.org/10.1016/j.xjep.2018.02.002.

[7]. "The Sage Encyclopedia of Educational Research, Measurement, and Evaluation." SAGE Research Methods, 5 June 2018, https://methods.sagepub.com/reference/the-sage-encyclopedia-of-educational-research-measurement-and-evaluation/i11254.xml. Internal Evaluation.

[8]. Admin. "Glossary of Curriculum Terminology." International Bureau of Education, 20 May 2016, http://www.ibe.unesco.org/en/glossary-curriculum-terminology.

[9]. Alem, Navid, and ZeevKain. "Evolving Healthcare Delivery Paradigms and the Optimization of 'Value' in Anesthesiology." Current Opinion in Anaesthesiology, vol. 30, no. 2, 2017, pp. 223–229., https://doi.org/10.1097/aco.0000000000000430.

[10]. Shrestha, Erina, et al. "Perception of the Learning Environment among the Students in a Nursing College in Eastern Nepal - BMC Medical Education." BioMed Central, BioMed Central, 21 Oct. 2019, https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-019-1835-0.

[11]. Genn, J.M. "Amee Medical Education Guide No. 23 (Part 2): Curriculum, Environment, Climate, Quality and Change in Medical Education – a Unifying Perspective." Medical Teacher, vol. 23, no. 5, 2001, pp. 445–454., https://doi.org/10.1080/01421590120075661.

[12]. Atwa, Hani, et al. "Medical Students' Perception of the Educational Environment in a Gender-Segregated Undergraduate Program." Journal of Medical Education, vol. 19, no. 3, 2020, https://doi.org/10.5812/jme.104934.

[13]. Han, Hannah, et al. "Assisted Hiv Partner Services Training in Three Sub- Saharan African [1][1]Countries: Facilitators and Barriers to Sustainable Approaches." Journal of the International AIDS Society, vol. 22, no. S3, 2019, https://doi.org/10.1002/jia2.25307.

[14]. Sarma, Haribondhu, and Elizabeth Oliveras. "Implementing HIV/AIDS Education: Impact of Teachers' Training on HIV/AIDS Education in Bangladesh." Journal of Health, Population and Nutrition, vol. 31, no. 1, 2013, https://doi.org/10.3329/jhpn.v31i1.14745.

[15]. "Training." AIDS Education and Training Centers National Coordinating Resource Center (AETC NCRC), https://aidsetc.org/training.

[16]. UNAIDS. https://www.unaids.org/sites/default/files/media_asset/UNAIDS_FactSheet_en.pdf:

[17]. André, Stéfanie, et al. "Student Perceptions in Measuring Teaching Behavior across Six Countries: A Multi-Group Confirmatory Factor Analysis Approach to Measurement Invariance." Frontiers, Frontiers, 1 Jan. 1AD, https://www.frontiersin.org/articles/10.3389/fpsyg.2020.00273/full.

[18]. SongoJ;WringeA;HassanF;McLeanE;VyasS;DubeA;LuwandaL;KaluaT;KajokaD;CrampinA;ToddJ;SchoutenE;SeeleyJ;GeubbelsE; Renju J; "Implications of HIV Treatment Policies on the Health Workforce in Rural Malawi and Tanzania between 2013 and 2017: Evidence from the Shape-Utt Study." Global Public Health, U.S. National Library of Medicine, https://pubmed.ncbi.nlm.nih.gov/32479141/.

[19]. Ahmed, Yasar, et al. "Students' Perception of the Learning Environment and Its Relation to Their Study Year and Performance in Sudan." International Journal of Medical Education, vol. 9, 2018, pp. 145–150., https://doi.org/10.5116/ijme.5af0.1fee.

[20]. "Who Flags Key Challenges to Global HIV Response at International AIDS Conference." World Health Organization, World Health Organization, https://www.who.int/news/item/14-07-2016-who-flags-key-challenges-to-global-hiv-response-at-international-aids-conference.

[21]. SJ;, Gilbert JH;YanJ;Hoffman. "A WHO Report: Framework for Action on Interprofessional Education and Collaborative Practice." Journal of Allied Health, U.S. National Library of Medicine, https://pubmed.ncbi.nlm.nih.gov/21174039/.

[22]. Khamarko, Kevin, et al. "Impact of AIDS Education and Training Centers on the US HIV Medical Workforce." American Journal of Public Health, vol. 106, no. 12, 2016, pp. 2190–2193., https://doi.org/10.2105/ajph.2016.303451.

[23]. Law, Tyler J. "Sociology of Interprofessional Healthcare Practice: Critical Reflections and Concrete Solutions." Journal of Interprofessional Care, vol. 26, no. 5, 2012, pp. 429–429., https://doi.org/10.3109/13561820.2012.655191.

[24]. "The Sage Encyclopedia of Educational Research, Measurement, and Evaluation." SAGE Research Methods, 5 June 2018, https://methods.sagepub.com/reference/the-sage-encyclopedia-of-educational-research-measurement-and-evaluation/i11254.xml. Internal Evaluation.

[25]. "Adaptation and Validation of the Dundee Ready Education Environment Measure (Dreem) for a Practice Teaching Program." Journal of Education and Practice, 2019, https://doi.org/10.7176/jep/10-9-04.

[26]. Training Healthcare Professionals in Resource-Limited Settings on HIV ... https://www.researchgate.net/publication/283697746_Training_healthcare_professionals_in_resource-limited_settings_on_HIV_care_and_treatment_Implementation_of_a_blended-learning_training_program_in_Sub-Saharan_Africa.

[27]. Hagey, Jill M., et al. "Differentiated HIV Care in Sub-Saharan Africa: A Scoping Review to Inform Antiretroviral Therapy Provision for Stable HIV-Infected Individuals in Kenya." AIDS Care, vol. 30, no. 12, 2018, pp. 1477–1487., https://doi.org/10.1080/09540121.2018.1500995.

[28]. Mburu, M., et al. "Evaluating the Effectiveness of the HIV Adolescent Package of Care (APOC) Training on Viral Load Suppression in Kenya.: Semantic Scholar." Undefined, 1 Jan. 1970, https://www.semanticscholar.org/paper/Evaluating-the-effectiveness-of-the-HIV-adolescent-Mburu-Guz%C3%A9/e79c4ad716fbefd6d69263f25c5a4e2a07e759fd.

[29]. Wu, Shishi, et al. "Evaluations of Training Programs to Improve Human Resource Capacity for HIV, Malaria, and TB Control: A Systematic Scoping Review of Methods Applied and Outcomes Assessed." Tropical Medicine and Health, vol. 45, no. 1, 2017, https://doi.org/10.1186/s41182-017-0056-7.
[30]. Pub, Open Access. "Health Care Providers Perception and Practice of HIV Disclosure to Sero-Positive Children and Adolescents in a Tertiary Health Facility in Abuja, Nigeria." Pen Access Pub, https://openaccesspub.org/jcrhap/article/841.
[31]. Publish date: September 04, 2020, and AETC SourceNortheast/Caribbean AETC. "Use of Multi-Disciplinary Teams to Identify and Address Special Cause Variation in Patient Outcomes." AIDS Education and Training Centers National Coordinating Resource Center (AETC NCRC), 4 Sept. 2020, https://aidsetc.org/resource/use-multi-disciplinary-teams-identify-and-address-special-cause-variation-patient-outcomes.
[32]. Guidelines on Use Antiretroviral Drugs for Treating and Preventing HIV ... https://chskenya.org/wp-content/uploads/2018/08/Kenya-ARV-Guidelines-2018.pdf.
[33]. Bares, Sara H., et al. "Implementation of an HIV Clinic-Based Interprofessional Education Curriculum for Nursing, Medical and Pharmacy Students." Journal of Interprofessional Education & Practice, vol. 11, 2018, pp. 37–42., https://doi.org/10.1016/j.xjep.2018.02.002.
[34]. Wu, Shishi, et al. "Evaluations of Training Programs to Improve Human Resource Capacity for HIV, Malaria, and TB Control: A Systematic Scoping Review of Methods Applied and Outcomes Assessed." Tropical Medicine and Health, vol. 45, no. 1, 2017, https://doi.org/10.1186/s41182-017-0056-7.
[35]. Wu, Shishi, et al. "Evaluations of Training Programs to Improve Human Resource Capacity for HIV, Malaria, and TB Control: A Systematic Scoping Review of Methods Applied and Outcomes Assessed." Tropical Medicine and Health, vol. 45, no. 1, 2017, https://doi.org/10.1186/s41182-017-0056-7.

Emmanuel Ndeto, et. al. "Evaluation of the National HIV Integrated Training Course at Kijabe hospital, Kiambu County, Kenya." *IOSR Journal of Research & Method in Education (IOSR-JRME)*, 12(06), (2022): pp. 40-53.