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Clinical Placement Capacities and Practices: An Optimum Model for Kenya

Margaret Kaseje[1, *], Elizabeth Ochieng[1], Stephen Okeyo[2], Peter Shikuku[2]

[1]Tropical Institute of Community Health and Development, Kisumu, Kenya
[2]USAID|FUNZO Kenya Transforming Health Workforce Training Project, Intra Health International, Nairobi, Kenya

Abstract

Background: Clinical placement involves supervised practices and mentorship of students in approved teaching institutions. Critical skills competence is developed during this period of training at health facilities. *Objective*: This study aimed to find out existing capacities and clinical placement practices in order to improve clinical skills for health workers. *Method*: In 2013 an assessment of clinical skills training and placement practices for mid-level health workers was undertaken in 43 government, faith-based and private institutions in Kenya. The cross-sectional study used qualitative and quantitative methods to collect data from 434 purposively selected respondents. Chi - square tests were performed to determine relationships between study variables. *Results*: The quality of clinical placement had a statistically significant association with the health services offered at the clinical placement sites. Human resource in terms of professional qualifications of trainers was associated with the competence attained by trainees and quality of clinical placement. Infrastructure, policy guidelines, linkages and coordination were important to placements. *Conclusion*: This study illustrates the need to adopt a standardized optimum clinical placement model to guide training institutions and to ensure quality clinical placement.

Keywords

Clinical Placement, Health Workers, Mentorship

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1. Background

Clinical placement is a key element in the education and training of the health workforce and provides critical clinical skills competence under supervision at health facilities. The quality of clinical training is influenced by the clinical placement experiences including types of placements, competencies, tools requirements, assessments and supervisions [1]. However, there are a number of gaps and constraints in clinical placement environments that impinge on developing competence in clinical care [2]. Researchers have shown that the clinical learning environment predicts clinical learning outcomes [3-7].

Therefore creating and sustaining a positive learning environment and culture is important as well as addressing potential barriers to effective and quality clinical placement that includes work related factors of stress such as first clinical experience, poor supervision, and fear of competence assessments [8-10]. In addition, students have reported being used as workers to respond to staff shortages, at the expense of their role as learners [11]. There are evidence-based elements of clinical placement models presented in literature that may be suitable for adaptation. Elements cited in these models range from effective supervision, learning opportunities with support in patient care, effective communication, appropriate infrastructure, equipment and materials for teaching/instructing and learning; and a positive learning environment [12].

While studies have identified critical factors in achieving successful clinical placement learning, there is a need to develop contextualized models that are cognizant of country

* Corresponding author
E-mail address: mkaseje@gmail.com (M. Kaseje)

factors such as resources, infrastructures, human resources and priority health needs of populations. This study is important in that it investigates factors previously identified globally as influencing the quality of clinical practice as they occur but in a resource constrained setting. The study further recommends a model for contextualization in settings of low staffing, high workloads that may compromise in-service training, resource limitations and policy gaps in clinical placement training.

Evidence from studies carried out in Kenya point to gaps in clinical placement practice [13] where learning in most tertiary and middle-level health training institutions is theory-based, with a lack of connection between theory and practice. Of particular note is the disconnect between classroom teaching and clinical/practical training in the midst of gaps in mentorship, inadequate staff and heavy clinical workloads, lack of learning objectives, inadequate student supervision, and weak linkages between the clinical institutions and training institutions.

With the need in Kenya to improve clinical placements in terms of planning, implementation and policy review for quality clinical skills among the health workforce who are competent to deliver health services [14] and in the absence of clear standards and guidelines on the process and content of clinical placement, this study reviews current practice and makes recommendations on achieve quality clinical placements.

In cognizance of the gaps exposed in several reports, and of the critical importance of quality clinical placement practice in health professional training, the FUNZOKenya Project (FKP) commissioned Great Lakes University of Kisumu (GLUK) in 2013 to undertake an appraisal of existing clinical placement practices in training institutions in Kenya. The assessment aimed to determine current practice in clinical placement in Kenya in order to inform the design of a model with basic minimum elements to ensure standards in clinical training of the mid-level health workforce. This paper presents findings of the assessment on the factors influencing clinical practice in Kenya.

2. Methods

A cross-sectional survey design of clinical placement practices in institutions in Kenya using quantitative and qualitative methods for data collection was used in the assessment.

First, a pre-assessment exploratory phase consisting of a stakeholder meeting was conducted where views were elicited from stakeholder groups representing medical training institutions, government district and referral hospitals, private and faith based hospitals. This pre-assessment phase assisted in elucidating and understanding the internal dynamics of clinical placement programs using a responsive approach by obtaining stakeholder perspectives [15].

Secondly, we used the thematic areas identified in the stakeholder consultation as variables to determine factors that affect the quality of training outcome of clinical placements through an assessment conducted in March/April 2013. These factors were further explored through a semi-structured questionnaire which was administered to purposively selected respondents.

A multi-stage design was used to capture all regions in the country based on the following eligibility criteria for selection:

1) Students enrolled and currently undergoing training in a medical training center/institution;

2) Government, faith-based or private institutions;

3) Institutions that were certified by regulatory bodies to train the various cadres of health workers and were undertaking training.

All certified sites offering clinical placement were identified and enumerated from a proportionate representation of government, private and faith-based health facilities in the country and sampled for the survey. Training institutions were purposively selected in each district with the main criteria for inclusion being that the institution was training mid-level health professionals (nurses, clinical officers and laboratory technicians and technologists).

The study was carried out among purposively selected health training and placement institutions across eight administrative regions of the country. The institutions were selected to represent public, private and faith-based organizations. Students interviewed were those who had undergone clinical placement. A total of 434 purposively selected respondents were interviewed across 43 institutions, using a semi-structured questionnaire. Respondents consisted of students in medical training institutions, principals and lecturers in training institutions and medical superintendents, in-charges and departmental heads in health facilities.

Three tools consisting of structured questionnaires augmented with open-ended questionnaires were used to collect data according to ethical procedures. Data from all sites were collated and analyzed using SPSS software according to the assessment variables. Categorical data was analyzed using proportions and cross-tabulations with chi-square tests. Frequencies were used to identify variables to be recorded in preparation for cross tabulation and for Chi-square tests. Variables that showed significant association with quality placement were re-tested through logistic regression to determine variables with the highest impact at 95% confidence interval.

Qualitative analysis of the stakeholder information and the open-ended responses from the semi-structured questionnaires consisted of grouping the information into similar themes, guided by the study variables. The results were compiled and aligned, where appropriate, with data

from the quantitative analysis.

While institutions were purposively selected for the assessment, the sample size for students was determined to provide a 5% significance level (i.e., with a 5% probability of saying that there will be a difference in the clinical placement model from baseline (at the assessment stage) compared with the revised model to be implemented at a later stage following the assessment.

3. Results

The assessment covered public Ministry of Health facilities, faith-based and private health facilities and investigated the key areas of infrastructure, financing of clinical placement, clinical experience, human resource, policy, linkages and coordination.

Respondents were students (45.6%) with the majority of the 198 students interviewed being females (53.5%); health facility personnel (35.7%) and representatives of training institutions (18.7%). The majority of the 43 placement institutions that were surveyed were government facilities that included provincial, and district hospitals and rural health training centers (77%) and faith-based/private facilities (23%).

3.1. Infrastructure

Availability of resources and equipment were key factors for students in making choices on which institutions to attend and which ones provided valuable clinical experience. Clinical placement facilities contributed (62%) of the resources and equipment necessary for clinical placements and experienced losses during clinical placements such as mis-use and wastage of supplies, breakages of equipment and high consumption of supplies.

Slightly more than half of the facility respondents (54%) indicated that there was adequate physical space for the students in clinical placements. Facility respondents considered seating and teaching space for students as important. This finding was supported by further analysis where seating and teaching space were significant components for quality clinical placement (χ^2=1.55, 2, n=155, p<0.001, CI=95%).

The majority of training institutions surveyed (94%) sent their students for clinical placement mainly to level 5 facilities (51%), followed by level 4 (32%) and level 3 (12%) facilities. The determinants for using the placement sites were proximity to the training institution and fee amounts (40%).

3.2. Financing Clinical Placement

The cost of clinical placement for students that included tuition, accommodation and meals was largely met by parents (76%), relatives (13%) and sponsors (6%). Forty four percent (44%) of students across all placement institutions found it 'difficult' to pay the clinical placement fees while 22% found it 'very difficult' to pay the fees. Findings indicated that fee payment was not an influencing factor in the quality of clinical placement. Facilities cited benefits of having students as they proved additional workforce that not only alleviated staff shortage and increased the nurse-patient ratio but also reduced the workload.

3.3. Clinical Experience

While training institutions followed their regulations on standards and qualifications for admission, students rated the opportunity to acquire experience in medical cases and clinical competency as a key factor in their preference for clinical placement sites as exemplified in the following quotes by students:

"It gave me an opportunity to learn and practice".

"I was satisfactorily taken through the procedures in my course".

"It's an avenue for learning where we transform theory into practice".

Most students (72%) had a positive perception of their clinical placement and would recommend the same institution to others.

Some of the major reasons cited among those who rated their placement experience as negative were: inadequate numbers of mentors and tutors compared to the number of students, financial problems, lack of accommodation, inadequate equipment and instances where students were used to offset shortage of staff as exemplified in the quotes below:

"I did not accomplish my placement objectives because the nurses were on strike; students were fighting for the limited opportunities we did most of the work".

"It is more of working and not training the students".

"It's mostly done to cover staff shortage and the learning aspect is lost – not enough training and follows up".

"We don't have tutors and mentors to guide us".

Sixty eight (68%) of students cited health workers particularly nurses as treating them well and helping them to achieve their learning objectives:

"They mentor us; they are willing to guide us through various activities and procedures".

"They treat you as their successors".

Those citing poor treatment mentioned unfriendly health workers, staff who were not accessible or did not provide guidance to students, as exemplified by the following quotes by some students:

"Some of them are good but others are so harsh that they

rebuke us in front of patients".

"They overload the entire work on us without any consultation".

Students cited peer learning as useful in their clinical experience; those citing colleagues as treating them well (63%) mentioned being able to consult each other, provide information and share ideas through discussions and learn from each other.

The professional qualifications of lecturers at level 3 and 4 health facilities was associated with the quality of clinical placement (medical officers (χ^2=12.70, 1, n=77, p<0.001, 95% CI) and clinical officers (χ^2=9.32, 1, n=77, P<0.002, 95% CI). In most institutions the ratio of lecturers to students was 1:25 to 1:100, indicating an overwhelming number of students requiring mentorship.

The training methods used by instructors in training institutions during clinical placement included practical demonstrations (32%), lectures (11%), case presentations (8%) and group discussions (5%). To a lesser extent (each less than 3%), other methods used were ward rounds, tutorials, use of log books, assignments and skills checklist. The average lecturer/student contact was 2 hours per day.

Sixty seven percent (67%) of training institution respondents confirmed the presence of preceptors in clinical placement sites, and these were nursing officers-in-charge, clinical instructors and heads of units. Preceptors' roles were enumerated as: arranging student placements including induction and orientation in clinical areas, mentorship of students, allocating their clinical assessors and managing student rotational timetables. The majority (60%) were not aware of any contractual agreement regarding their role as preceptors for clinical placement.

Availability of clinical instructors and their remuneration was key to the quality of clinical placement. However, less than half of the health facilities (44%) with clinical instructors engaged them in tasks related to clinical placement such as: orientation of students, clinical teaching, mentoring, supervision and evaluation. Less than a third (22%) of the health facilities provided compensation through cash or tokens. The lack of incentives was perceived as an influencing factor on the availability of lecturers for clinical site supervisions.

3.4. Mentorship

Generally, the quality of clinical placement as related to mentorship was poor as stated by 68% of the respondents. Nurses and doctor mentors were ranked the poorest in terms of quality. However without stratification, this statistic is rather difficult to interpret.

Students associated mentorship with the quality of clinical placement (χ^2=14.90, 4, n=196, p<0.005, 95% CI) and mentioned the importance of medical and nursing officers in providing professional knowledge.

Almost three quarters of the students (71%) were satisfied with the mentorship in their clinical areas. Facility respondents (64%) similarly indicated that students were sufficiently mentored. There was no compensation, recognition or guidance regarding mentorship as it was an expected role for the instructors.

3.5. Policy

In general, those engaged in clinical placement, be they students (55%), health facilities (57%) or training institutions (36%) were not aware of any existing policy guidelines that regulated clinical placement. Policy setting for regulating clinical placement was viewed as the mandate of regulatory bodies such as the Kenya Medical Practitioners and Dentists Board, the Nursing Council, the Clinical Officers Council, training and placement institutions and the Ministry of Health. These responses indicate gaps in policy guidelines on clinical placement, particularly since the existence and use of policy guidelines was associated with the quality of clinical placement by training institutions and health facilities (χ^2=30.13, 3, n=155, p<0.01, 95% CI).

3.6. Linkages and Coordination

Sixty two percent (62%) and 61% respectively of health facilities and training institutions had linkages with medical training centers, hospitals and the Ministry of Health. Other linkages were with universities, international organizations, non-governmental organizations, faith-based and community organizations. The linkages were related to academic and medical research, patient referral, training, clinical experience, exchange programs, provision of academic staff/mentors, financial and material assistance.

3.7. Logistic Regression of Quality of Clinical Placement

Questions asked to determine quality clinical placement included those on infrastructure, for example, "Where are students accommodated during clinical placement?" Other questions were on financing for equipment and supplies; linkages and coordination; linkages with other related training institutions, overall assessment of the existing linkages and other stakeholders playing a role in clinical placement. Logistic regression model was used to determine the effect of a combination of factors including infrastructure, human resource, policy guidelines, linkages and coordination on overall placement quality. Among training institutions, infrastructure (OR=0.0, 95% CI=0.0-0.9, p=0.047), linkages

and coordination (OR=0.0, 95% CI=0.0-0.1, p=0.013) were the most significant predictors of quality of clinical placement (Table 1).

Table 1. Regression analysis of quality factors in training institutions.

		B	S.E.	Wald	df	Sig.	Exp(B)	95.0% CI for EXP (B)	
								Lower	Upper
Step1[a]	Quality Infrastructure (1)	-8.404	4.240	3.930	1	.047	.000	.000	.910
	Quality Human Resource (1)	-4.866	38.183	.016	1	.899	.008	.000	2.444E30
	Quality policy guideline (1)	-8.515	8.257	1.064	1	.302	.000	.000	2.138E3
	Quality Linkage & Coordination (1)	-9.685	3.898	6.173	1	.013	.000	.000	.129
	Constant	17.669	38.373	.212	1	.645	4.718E7		

Questions asked to determine quality clinical placement on infrastructure included; adequate seating space, safe water source, type of services, students' accommodation and mentorship. For human resource the questions addressed presence and number of clinical instructors and existing policy guidelines for clinical placements. Logistic regression indicated that for health facility personnel, both infrastructure (OR=0.0, 95% CI=0.0-0.2, p<0.001) and human resource (OR=0.0, 95% CI=0.0-0.1, p=0.019) were significant predictors of quality placement (Table 2).

Table 2. Regression analysis of quality factors in Health facilities.

		B	S.E.	Wald	df	Sig.	Exp(B)	95.0% CI for EXP (B)	
								Lower	Upper
	Quality Human Resource (1)	-10.885	2.875	14.334	1	.000	.000	.000	.005
Step1[a]	Quality Infrastructure (1)	-8.875	3.791	5.480	1	.019	.000	.000	.236
	Constant	5.270	2.162	5.940	1	.015	194.388		

For human resource, we asked questions that included; professional cadres for lecturers, mentorship while in linkages and coordination, we asked linkages between training institutions, preceptorship. For students, both human resource (OR=0.1, 95% CI=0.03-0.38, P<0.001), linkage and coordination (OR=0.16, 95% CI=0.05, 0.51, P=0.002) were the most significant predictors of quality of clinical place using logistic regression model (Table 3).

In summary the significant factors for quality were: infrastructure, human resource, policy guidelines, linkages and coordination. These factors were translated into a comprehensive model as depicted in figure 2.

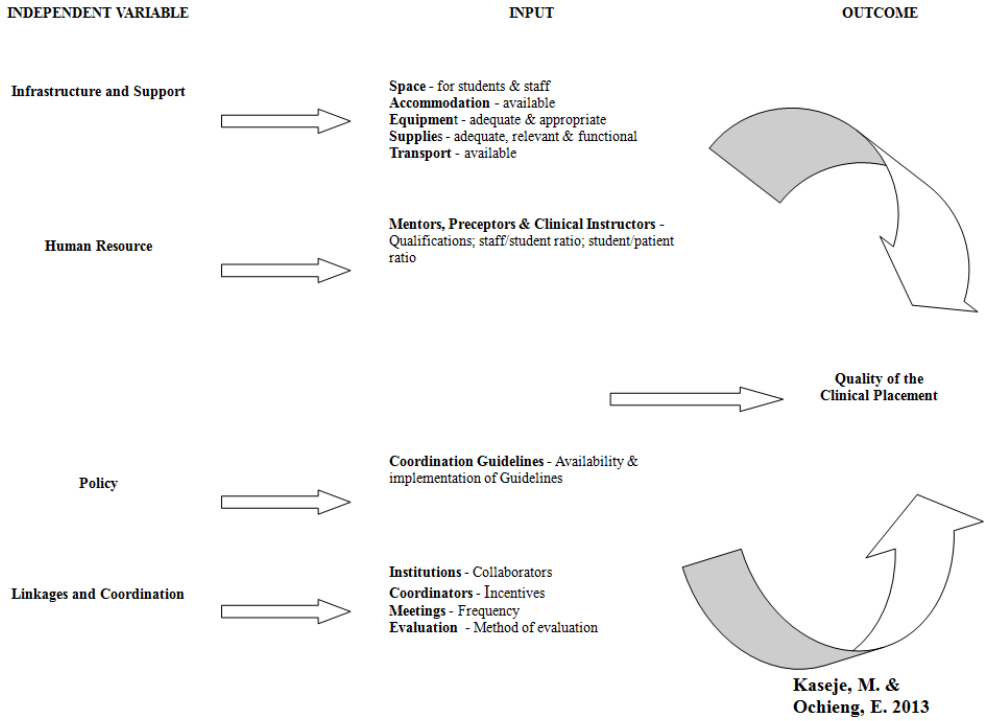

Figure 1. Operational Framework for Clinical Placement Model.

Table 3. Regression analysis of students' perceptions of quality of clinical placement.

		B	S.E.	Wald	df	Sig.	Exp(B)	95.0% CI for EXP (B)	
								Lower	Upper
Step1[a]	Quality policy (1)	-.615	.551	1.244	1	.265	.541	.183	1.593
	Quality Linkage & coordination (1)	-1.853	.599	9.564	1	.002	.157	.048	.507
	Quality Human Resource (1)	-2.214	.633	12.237	1	.000	.109	.032	.378
	Quality Infrastructure (1)	-1.534	1.107	1.919	1	.166	.216	.025	1.889
	Constant	1.257	.770	2.663	1	.103	3.513		

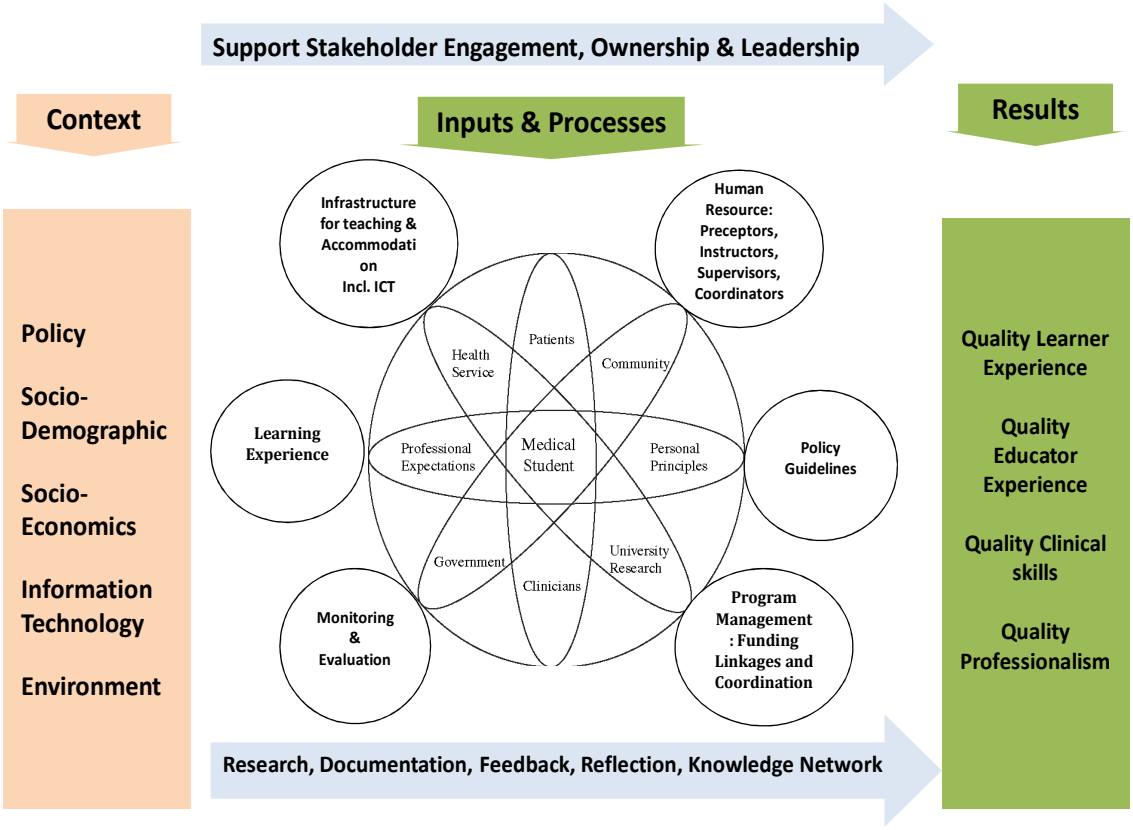

Figure 2. Comprehensive Clinical Placement Model.

3.8. Comprehensive Clinical Placement Model

Figure 2 presents the emergent model indicating factors that are key to quality clinical placement and points to the need for a model that is contextualized to institutional needs. The model depicts the health professional student at the heart of the health professional training system, in keeping with the recommendations of the current global reforms that call for student-centered and community-oriented curriculum design. The student is juxtaposed between the following variables which make demands on the student and sometimes may be conflicting: the patient and clinician instructor; government and community; research and service delivery; personal principles and professional expectation.

The model also depicts the context as background factors that are generally not in the control of the medical or educational system players, but which have influence on the inputs and processes and hence can influence the success or failure of a program to achieve desired outcomes. In keeping with global principles, the model identifies the need for engaging stakeholders as owners and leaders of effective improvement. Further research is needed to determine the effectiveness and utility of this emergent model in improving the quality of clinical placement training. In order to best serve hard to reach clients, the scale up of the model should take into account the innovative GLUK community college based model that integrates students and faculty into rural placement sites.

4. Discussions

The assessment aimed at identifying current practice in clinical placement in order to inform the design of a model for mid-level and higher level training institutions for improved health worker clinical skills. The assessment found that the overall quality of clinical placement in an institution was determined by the infrastructure, financing of the clinical

placement, the clinical experience itself, availability of policies that guided the clinical placement training and existing linkages and coordination.

This assessment used data from purposively selected institutions in the country to elucidate clinical placement practices; thus while statistical sampling was not used, the findings as illustrated in the study's emergent clinical placement model may be selected and contextualised for application by training and placement institutions.

To the extent possible, the exploration, design and development of the model sought to be congruent with the WHO and the World Federation for Medical Education nine building blocks for medical education systems [16]. Thus the study presents findings from a resource constrained setting, unlike other studies and concludes with an emergent model on clinical placement for further research on its implementation.

4.1. Infrastructure

The quality of clinical placement was shown to have statistically significant association with the availability of basic infrastructure, including amenities, transportation, equipment and materials, adequate learning space and reference materials. Placement sites should therefore consider the adequacy of their infrastructure alongside the placement teaching content as an important quality indicator. A potential option is to accredit and upgrade existing rural health training facilities to agreed basic standards.

4.2. Financing Clinical Placement

The wide variance of student fees for clinical placement which includes costs for accommodation, meals, transportation and tuition or instruction, calls for standardization or guidance in order to make clinical placement affordable to students. De-linking accommodation costs from the placement fees would help the institutions to lower their clinical placement costs. However, there is not much evidence to guide on a fair charge for clinical placement or even a model for collaboration in financing placement by different stakeholders. This is an important focus for research.

4.3. Clinical Experience

Studies show a significant relationship between students' perceptions of the learning environment and their satisfaction and success [3, 17]. The studies of nursing students demonstrated that the relationship between student satisfaction and a positive learning environment was dependent. The adequacy and quality of human resource in the placement institutions plays a large role in maintaining quality of clinical placement both in numbers and in their proficiency in providing quality clinical placement. This assessment found that the variation in quality of clinical placement by different cadres of health workers (medical officers and clinical officers) was statistically significant. Institution heads have a responsibility to ensure qualified and adequate numbers of clinical mentors and instructors for a standardized mentor/instructor to student ratio. Other areas for consideration are payment and/or regular training of clinical instructors and mentors as motivation.

4.4. Mentorship

Various models of clinical placement have been cited, for example, an inter-agency clinical placement model where agencies collaborate and share responsibility for student learning with time spent in the different settings and focusing on learning that is independent, student driven, as well as through role modelling [18]. A traditional apprenticeship model has one student per clinical instructor for direct supervision and role modelling while the collaborative clinical placement model has one clinical educator supervising two or more students who work as a team to develop their skills [19, 20]. A multiple mentoring clinical placement model is where multiple instructors supervise multiple students, providing the advantage of larger numbers of students [21]. With various models available, there is a need to identify a model that is contextualized to the Kenyan situation where the challenges of low staffing in facilities, high workloads, resource constraints and policy gaps may compromise in-service training.

The assessment noted that students value the mentorship process where staff spend time for teaching and supervision of students. The standards set by regulatory bodies on staff/student ratio of 1:10, and student/patient ratio of 1:3 may be difficult to achieve and need to be reviewed given the shortage of staff in most of the institutions surveyed. Understaffed institutions and overworked staff undermine the benefits that students would gain from their clinical experience and needs to be addressed in order to maintain quality.

There is a need to provide job descriptions with reference to mentorship and to aim for multi-disciplinary involvement of staff in the training of students to maximize on available human resources. A reward and recognition mechanism is regarded as a good practice in workforce development and retention; the assessment indicated mostly non-existence of this practice for educators engaged in mentoring students. Given the volume of students undertaking clinical placement in health facilities especially at level 4-6 facilities, it is advisable to factor this into the institutional strategic and operational plans.

Benchmarking of mentorship is identified in literature as

contributing to the quality of professional development of students and educators. Benchmarking of basic quality indicators include mentor recruitment, induction, matching, support, pedagogical training and continuing professional development of educators. An accountability mechanism for mentorship experience is clearly weak, non-uniform or lacking altogether in the assessed clinical placements sites.

4.5. Policy and Guidelines

The lack of awareness on policies guiding clinical placement indicates the need to ensure that the guidelines and/or policies for clinical placement are available and are being adhered to. Health facilities in particular need to be aware of national guidelines as well as have their own operating guidelines that conform to national policies. It is important that the processes and procedures in clinical placement sites be guided by written policy and operational guidelines. This is not only important for keeping actions on course, but also provides support for evaluation of compliance. Formal agreements between health facilities and training institutions are needed to regulate the clinical placement process (for example, admissions, curriculum, assessments, patient safety, roles and responsibilities and student pre-placement requirements).

Policy setting for regulating clinical placement is key to quality placements. The entrenchment of clinical placement as recommended in this model is indeed a policy decision, which is naturally accompanied by resource allocation, mobilization and management policy. For example, policy decisions and guidelines on reward and recognition mechanisms are required by clinical placement institutions if they are to meet basic minimum requirements and engage in continuous quality improvement. This is not only necessary but urgent given the legal and policy reforms that put a premium on patient rights and safety.

4.6. Linkages and Coordination

The training and placement institutions need to coordinate their activities in order to address factors such as timing and supervision of students on clinical placements and education staff requirements. This assessment has documented variation in availability, dissemination and understanding as well as operationalization of coordination mechanisms relevant to clinical placement. The implication is that institutional practices are not uniformly guided and practiced. Linkages and coordination with other higher learning and service delivery institutions will enhance the quality of the clinical placements, particularly reciprocal participation in management systems between training institutions and linked placement health facilities.

5. Conclusion

This study illustrates the need to rethink about factors of infrastructure, human resource, policy guidelines, linkages and coordination in order to achieve quality clinical skills and competencies that the health workforce need for effective service delivery. Hence the adoption of a standardized model presented in this study is likely to ensure quality clinical placement.

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Competing Interests

Authors declared they have no conflicts of interest.

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