Developing and Validating Standards for Clinical Learning Environment at Nursing Faculty.

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Abstract

Background: In recent years, there is an increasing interest and concern regarding the role of the learning environment in undergraduate nursing education. ***Aim:*** The study aimed at developing and validating standards for clinical learning environment at Nursing Faculty Mansoura University.***Design:*** A methodological design was utilized. ***Subjects and methods***: The study sample composed of three groups: clinical instructors group, expert (jury) group and students group. Data was collected by using three tools: An Opinionnaire sheet to check face and content validity by jury, Questionnaire sheet to identify the importance of the developed standards from clinical instructors, nursing student's opinion and observation checklist to test the applicability of developed standards. ***Results***: The study results revealed that the proposed standards were agreed upon their content and face validity by majority of jury experts. There were statistically significant relations between opinions of students and clinical instructors about importance of structure standards. ***Recommendation:*** Using the standards and criteria developed for clinical learning environment as strategies to improve nursing training and clinical learning. The faculty laboratory and training environment should prepared with adequate supplies and equipment required for each student for training.

Key Words: Clinical learning environment, Nursing Faculty, Standards, Validation.

Introduction

Nurses represent a very important component of the medical team. A poorly graduate nurse might not just hinder the team's effectiveness, additionally cause inferiority health care. Clinical learning lies at the center of nursing education that aids to organize students for the type of work they'll must to be compelled to do as professional nurses. Moreover, actual world clinical expertise permits nursing students to improve their skills. So, clinical learning permits nursing students to become skilled staff **(Eta et al., 2015).**

Learning within the clinical atmosphere provides students with early and intensive clinical experiences throughout their coaching considering that nursing is practice-based profession. Clinical learning environment is that the place wherever student nurses are well-informed for the fact of their qualified duties. Students learn in environments wherever they're nurtured. They respond when clinical instructors have specific and well structure approach and that they will simply communicate with them as a result of they're mostly rely on them in the clinical learning

situation **(Kaphagawani & Useh, 2013).**

There's a gap in merging theory to training that has been of concern for a prolonged time in nursing education that have an impression on students learning in clinical skills **(Kelly, 2007).** Many studies have showed that few clinical settings are ready to offer student nurses with an effective learning environment. The main target in clinical environment to develop clinical academic standards and capabilities designed for enhancing students' information and to market their practical experience **(Mousa et al., 2012).**

A standard is a document that has necessities, qualifications, indicators or characteristics which will be done systematically to make sure that supplies, goods, procedures and facilities are suitable for their goals **(CEN-CENELEC Management Centre, 2016).**It is an extent of what's expected to occur during the present or anticipated situations. The purpose of a standard is to achieve a reliable basis for individuals to share identical expectations for product or service. Also, outline terms so there's no confusion among these ones applying the standards **(Fazal, 2011).**

Significance of the study

The quality and well-being of health care may be a worldwide concern. These concerns are relying on skillful individuals and adequate resources being accessible on clinical setting. Definitely, this lack of management within the environment is what makes it a worthy and significant learning expertise; however, it additionally creates threats to quality **(Koontz et al., 2010).** As a result, there's a great need for standardize clinical learning environment that has social, emotional and skilled support to reduce anxiety and build positive learning experiences and successively facilitates demonstration of clinical competency **(Berntsen&Bjørk, 2010).**

Aim of study

The aim of the present study was to develop and validate standards for clinical learning environment for nurse students at Nursing faculty, Mansoura University.

Research hypothesis

H1: There is a significant difference among clinical instructors and nursing student's opinion on the importance of choosing clinical learning environment for students.

H2: The proposed standard will be applicable in the clinical learning environment for students.

Subjects and methods:

1-Study Design: -

A methodological design was used to carry out this study.

2-Setting: -

The study was conducted at faculty of nursing, Mansoura University. The faculty of nursing was established at 1994, it consists of eight academic nursing departments (Adult Nursing, Critical Care Nursing, Maternal and Gynecological Nursing, psychiatric and Mental Care Nursing, Nursing Administration, Pediatric Nursing, Gerontological Nursing, Community Health Nursing).

3- Subjects: -

The study sample composed of three groups namely expert jury group (31), clinical instructors group (114), and students group (331).

4-Tools of data collection: -

Data collected through using following three tools:

1-An Opinionnaire sheet: This tool was developed by researchers based on literature review **(American Nursing Association (ANA), 2010; Chan (2002)** and aimed to test face and content validity of the proposed standards by jury experts. It includes two parts :**The first part** was developed for data related to demographic data of the jury experts such as: age, experience years and specialty. **The second part** related to validity of the proposed eight standards divided into three parts as: structure(4 standards) , process(3 standards)and outcome standards(1 standard),all of them with 37 related criteria.

Scoring system: **(Jecklin, 2004)**

- For face validity: the response was either agree or disagrees. 2=agree and 1= disagree.
- For content validity: the response was either Yes or No. 2 = Yes and 1 = No.
- The sub-items with 60% agreement or more than 60% was considered to agree upon and valid.

2-Questionnaire sheet: This tool was developed based on statistical analysis of jury opinion regarding content and face validity and necessary modifications were done and aimed to identify the importance of the proposed standards from clinical instructors, nurse student's viewpoints (clinical instructors including demonstrators and assistant lecturers, nurse students). It includes two parts: **The first part** related to demographic data of clinical instructors as: age, qualification and years of experience department. Demographic characteristics of students as: age, gender, academic level. **The second part** related to clinical instructors and nurse students opinion upon the importance of proposed 8 standards and 36 related criteria due to omission of one criterion based on statistical analysis of jury opinion.

Scoring system: **(Jecklin, 2004)**

- The response was either important or not important. 2 = important and 1 = not important.
- The sub-items with 60% agreement or more than 60% was considered to agree upon its importance.

3- Observation checklist: It was developed by researchers and aimed to determine the applicability of developed standards. It contains two parts: **The first part** was related to observation date and the observation period. **The second part** including 8 standards with 36 criteria and their sub criteria.

Scoring system: **(Jecklin, 2004)**

- The response was either applicable or not applicable. 2 = applicable and 1 = not applicable.
- The criteria with 60% applicability or more than 60% was considered to be applicable in clinical setting.

5-Validity and reliability:

The data collection tool reviewed by 31 experts from faculty of nursing at Mansoura University to test face and content validity of tool. The tool tested for its reliability by using Cronbach alpha test. It was 0.86.

6-Pilot study:

A pilot study was be carried out on 10%of 3 studied groups (jury experts, clinical instructors, nursing students) were randomly selected to test the clarity, feasibility of the tools and necessary modifications was be done accordingly.

7-Fieldwork:

It was started from the beginning of February 2016 to the end of June 2016 through the following four different phases:

First phase: It was characterized by the development of the standards guided by literature review and an opinionnaire sheet was developed by researchers. Tool was distributed to be filled by jury experts in their work setting for testing face and content validity of the proposed standards.

Second phase: it was characterized by the development of a questionnaire sheet based on the results of expert's validity of the proposed standards. This sheet was distributed to participants (clinical instructors and nurse students).

Third phase: The researchers designed observation checklist based on the developed standards. It was used to check the applicability of the developed standards with their criteria, through observing the clinical learning environment.

Fourth phase: it was characterized by the development of standards for clinical learning environment based on the results obtained from opinionnaire sheet and questionnaire sheets.

8-Ethical Considerations:

• Ethical approval was obtained from the research ethics committee of the Faculty of Nursing – Mansoura University.

• An official permission from the dean of the faculty of nursing to conduct this study.

• Privacy and confidentiality of the collected data were assured.

• Participation in research is voluntary and Participants were assured that withdrawing from the study was be at any stage without responsibility.

Statistical Analysis

Data entry and statistical analysis were done using Statistical Package for Social Science (SPSS), version 21. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations for quantitative variables. Chi- Square ($\chi 2$) test was used to test association between variables. F value of ANOVA test was calculated. Correlation coefficient(r) test was used to test the closeness of association between two variables. Statistical significance was considered at p-value <0.05 while, p-value of <0.001 indicates a high significant result.

Results

Table (1): Demographic data of jury experts (n=31).

This table shows that more than half of expert group (53.3%) aged <40 years old. Regarding specialty, 20% of them are Community health specialists and lower percentage 6.7% are obstetric specialists. Concerning years of experience, shows that more than half of expert group (53.3%) had <15 years of experience, while 46.7% were ≥15 years of experience.

Figure (1): Opinion of jury experts about content and face validity of the preliminary questionnaire (n=31).

This figure shows that 90% of expert group agree about applicability and measurability of preliminary questionnaire and 93% of expert group agree about relevance and face validity of questionnaire.

Table (2): Demographic data of the studied clinical instructors (demonstrators and assistant lecturers) (n=114).

This table shows that, regarding clinical instructors age, all demonstrators aged from23-<30 years old while more than half of assistant lecturers 57.5% aged from the same age with highly statistically significant relation p= 0.0001*. The high percentage of demonstrators 95.5% and74.5% of assistant lecturers are females with statistically significant relation p= 0.001*. As regards to specialty the high percentage 17.9% of demonstrators and 19.1% of assistant lecturers are Medical-Surgical specialists. Most of demonstrators 79.1% had 1-<6years of experience while, 66.0% of assistant lecturers had 6-10 years of experience with highly statistically significant relation p= 0.0001*

Table (3): Demographic data of the studied nursing students (n =331).

This table shows that 47.4% of the studied nursing students had 20 years old with 2nd academic level while 21.5% had 21 years old with 3rd level and 84.6% of them are females.

Table (4): Opinion of the studied demonstrators in comparison with assistant lecturers about the importance of standards for clinical learning environment (n=114).

This table concluded that, 98.5% of demonstrators and 97.9% of assistant lecturers agree about the importance of structure standards (all of both groups 100% agree about Standard 2. equipment and supplies and Standard 4. clinical policies with 98.2% of total agreement. Regarding process standards, 97% of demonstrators and 97.9% of assistant lecturers agree about its importance with 97.4% of total agreement.

Table (5): Opinion of the studied clinical instructors in comparison with nursing students about the importance of standards for clinical learning environment (n=445).

This table shows that 98.2% of clinical instructors (100% of them agree about Standard 2. equipment and supplies, Standard 4. clinical Policies). While, 95.5% of nursing students agree about the importance of structure standards (97.3% of them agree about standard 3. Manpower, standard 4. Clinical Policies) without any statistically significant relation. As well, 97.4% of clinical instructors and 97.6% of nursing students agree about the importance of process standards (Standard 7. Student Involvement had high percent of agreement for both groups) without any statistically significant relation.

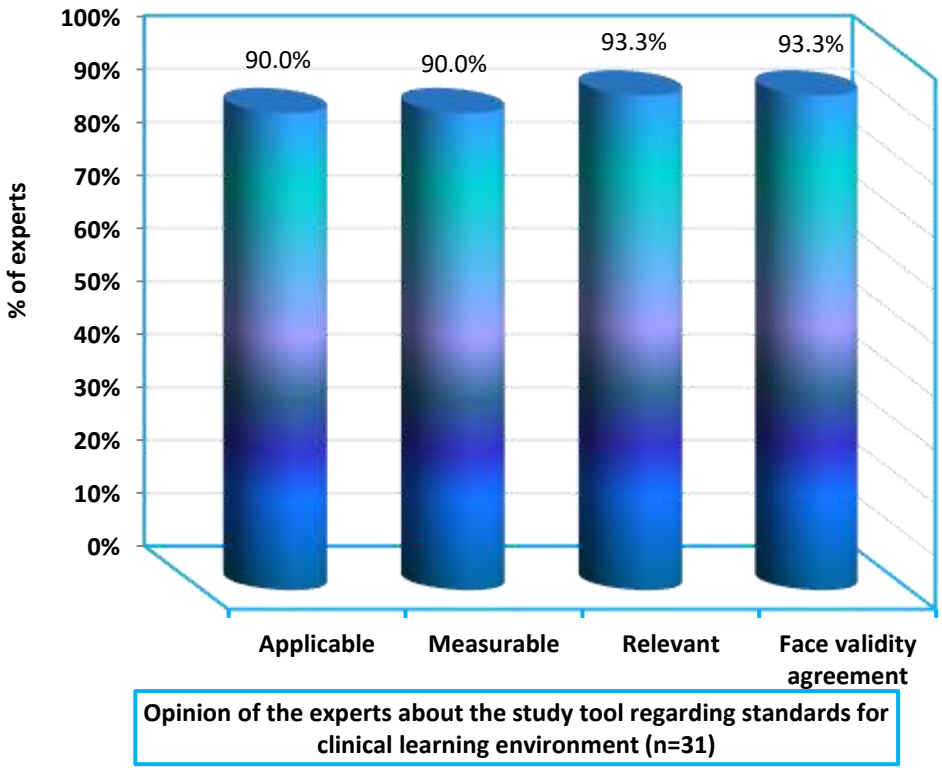
Table (6): Applicability of standards for clinical learning environment at the study seven departments by three observations (n=7).

This table shows that structure standards had 85.7% of applicability followed by 71.4% for process

standards. Regarding structure standards, Standard 1. Faculty laboratories had the lowest percentage 71.4% of applicability. As regards to process standards, Standard 5. Task Orientation had 85 % followed by71.4% for Standard 6. Personalization and Standard 7. Student Involvement.

Table (1): Demographic data of jury experts (n=31).

Variables	The study experts (n=31)	
	N	%
Age years:		
<40	16	53.3
≥40	13	46.7
Specialty:		
Gerontology	4	13.3
Administration	5	16.7
Pediatric	4	13.3
Adult Nursing	4	13.3
Critical Care Nursing	3	10.0
Psychiatric and Mental Care Nursing	2	6.7
Community health Nursing	6	20.0
Maternal and Gynecological Nursing	3	6.7
Experience years:		
<15	16	53.3
≥15	15	46.7



Opinion of the experts about the study tool regarding standards for clinical learning environment (n=31)

Figure (1): Opinion of jury experts about content and face validity of the preliminary questionnaire (n=30).

Table (2): Demographic data of the studied clinical instructors (demonstrators and assistant lecturers) at Mansoura faculty of nursing (n=114)

Variables	The studied clinical instructors (n=114)						χ^2	P
	Demonstrators (n=67)		Assistant lecturers (n=47)		Total (n=114)			
	N	%	N	%	N	%		
Age years:								
23-<30	67	100	27	57.4	94	82.5	34.577	0.0001*
30-35	0	0	18	38.3	18	15.8		
>35	0	0	2	4.3	2	1.8		
Gender:								
Males	3	4.5	12	25.5	15	13.2	10.716	0.001*
Females	64	95.5	35	74.5	99	86.8		
Specialty:								
Nursing administration	5	7.5	7	14.9	12	10.5	3.804	0.802
Community health Nursing	9	13.4	6	12.8	15	13.2		
Critical Care Nursing	12	17.9	4	8.5	16	14.0		
Psychiatric and Mental Care Nursing	9	13.4	6	12.8	15	13.2		
Adult Nursing	12	17.9	9	19.1	21	18.4		
Maternal and Gynecological Nursing	9	13.4	5	10.6	14	12.3		
Pediatric Nursing	6	9.0	5	10.6	11	9.6		
Gerontological Nursing	5	7.5	5	10.6	10	8.8		
Experience years:								
<1	13	19.4	0	0	13	11.4	84.483	0.0001*
1-<6	53	79.1	7	14.9	60	52.6		
6-10	1	1.5	31	66.0	32	28.1		
>10	0	0	9	19.1	9	7.9		

***Significant (P<0.05)**

Table (3): Demographic data of the studied nursing students (n =331).

Variables	The studied nursing students (n=331)	
	N	%
Age years:		
19	103	31.1
20	157	47.4
21	71	21.5
Gender:		
Males	51	15.4
Females	280	84.6

Academic level:		
1st level	103	31.1
2nd level	157	47.4
3rd level	71	21.5

Table (4): Opinion of the studied demonstrators in comparison with assistant lecturers about the importance of standards for clinical learning environment (n=114).

Standards for clinical learning environment	The studied clinical instructors at Mansoura faculty of nursing (n=114)						χ^2	P
	Demonstrators (n=67)		Assistant lecturers (n=47)		Total (n=114)			
	Important		Important		Important			
	N	%	N	%	N	%		
A-Structure standards:								
Standard 1. Faculty laboratories	65	97.0	45	95.7	110	96.5	0.020	0.877
Standard 2. Equipment and supplies	67	100	47	100	114	100	-	-
Standard 3. Manpower	66	98.5	46	97.9	112	98.2	0.220	0.639
Standard 4. Clinical policies	67	100	47	100	114	100	-	-
Total	**66**	**98.5**	**46**	**97.9**	**112**	**98.2**	**0.220**	**0.639**
B-Process standards:								
Standard 5. Task orientation	66	98.5	46	97.9	112	98.2	0.220	0.638
Standard 6. Personalization	65	97.0	46	97.9	111	97.4	0.100	0.754
Standard 7. Student involvement	65	97.0	46	97.9	111	97.4	0.100	0.754
Total	**65**	**97.0**	**46**	**97.9**	**111**	**97.4**	**0.100**	**0.754**
C-Outcomes standards:								
Standard 8. Student's satisfaction	**64**	**95.5**	**45**	**95.7**	**109**	**95.6**	**0.170**	**0.684**

Table (5): Opinion of the studied clinical instructors in comparison with nursing students about the importance of standards for clinical learning environment (n=445).

Standards for clinical learning environment	The studied subjects at Mansoura faculty of nursing (n=445)		χ^2	P
	Clinical Instructors (n=114)	Nursing students (n=331)		

	Important		Important			
	n	%	n	%		
A-Structure standards:						
Standard 1. Faculty laboratories	110	96.5	316	95.5	0.040	0.845
Standard 2. Equipment and supplies	114	100	305	92.1	8.140	0.004*
Standard 3. Manpower	112	98.2	322	97.3	0.050	0.824
Standard 4. Clinical Policies	114	100	322	97.3	1.940	0.164
Total	**112**	**98.2**	**316**	**95.5**	**1.100**	**0.293**
B-Process standards:						
Standard 5. Task Orientation	112	98.2	318	96.1	0.650	0.419
Standard 6. Personalization	111	97.4	324	97.9	0.100	0.963
Standard 7. Student Involvement	111	97.4	327	98.8	0.380	0.537
Total	**111**	**97.4**	**323**	**97.6**	**0.050**	**0.824**
C-Outcomes standards:						
Standard 8. Student's satisfaction	**109**	**95.6**	**329**	**99.4**	**5.580**	**0.018***

***Significant (P<0.05)**

Table (6): Applicability of standards for clinical learning environment at the study seven departments by three observations (n=7).

Standards for clinical learning environment	Applicability of standards at the study departments during 3observations (n=7)								χ^2	P
	First		Second		Third		Average of 3 observations			
	Applicable		Applicable		Applicable					
	n	%	n	%	n	%	n	%		
A-Structure standards:										
Standard 1. Faculty laboratories	5	71.4	5	71.4	6	85.7	5	71.4	0.520	0.769
Standard 2. Equipment and supplies	7	100	6	85.7	5	71.4	6	85.7	2.330	0.311
Standard 3. Manpower	6	85.7	6	85.7	5	71.4	6	85.7	0.620	0.734
Standard 4. Clinical Policies	6	85.7	6	85.7	5	71.4	6	85.7	0.620	0.734
Total	**6**	**85.7**	**6**	**85.7**	**5**	**71.4**	**6**	**85.7**	**0.620**	**0.734**
B-Process standards:										
Standard 5. Task Orientation	6	85.7	5	71.4	6	85.7	6	85.7	0.620	0.734
Standard 6. Personalization	5	71.4	5	71.4	6	85.7	5	71.4	0.520	0.769
Standard 7. Student Involvement	5	71.4	5	71.4	6	85.7	5	71.4	0.430	0.807
Total	**5**	**71.4**	**5**	**71.4**	**6**	**85.7**	**5**	**71.4**	**0.430**	**0.807**

Discussion

Clinical learning is the core of nursing education. Several factors are established to influence students' growth of clinical competency. These factors include students contact to a various type of clinical experiences, learning in realistic clinical settings, independent learning, and also the provision of a positive environment

(Alhaqwi&Taha,2015).

The study findings indicated that the proposed standards were agreed upon their content and face validity by majority of jury experts. These results were agreed with the study results of **Costa, Duggan & Bates (2008),** whom stressed on development of standardized scales that were valid and reliable in Portuguese students and the importance of accurate translation and validation processes to measure the ideas of interest in a very credible approach. As **Australian Skills Quality Authority (2015)**, that emphasize on importance of validation to identify the capability of the tools they use and regulate these tools to satisfy their requirements. This may facilitate guarantee confidence within the quality of assessment. It'll additionally make sure that your assessment is valid, reliable, adaptable and fair.

Relating to face validity of the study tool, most of jury group agree concerning face validity concerning standards of clinical learning environment were written in educational context, intelligible, realistic. All of them showed that study tool enough to assess items concerning standards for clinical learning environment. Their agreements could show the high concern and importance concerning this subject from their points of view**.**

On identical line **Truong (2015),** conducted face validity for the clarity of the directions, items, and response format and also the adequacy of content of the instrument in relevance the construct being measured; that's, in terms of variety, simplicity, and scope of the individual items that it contained whether or not the items adequately measured all of the scale of the construct. As well as the study results of **Dadgaran, et al., (2016)**, they centered on application of face validity concerning study tool identify the importance of every standard, reduce the improper expressions and also the needed modifications were applied supported the jury's opinion.

Concerning the structure standards, was the most important followed by process standards and outcome standard from clinical instructor's viewpoints. All clinical instructors (demonstrators and assistant lecturers) agree concerning equipment and supplies standard and clinical policies standard followed by manpower and finally faculty laboratories characteristics standard. While not statistically significant relation between the two group. This result may related to that availability of equipment and supplies in clinical laboratories is the most important aspect for creating effective clinical learning environment. As well clinical policies standard provides the opportunity for the student to learn and safely practice clinical skills in a controlled environment that ensuring a high-quality practice that consistently achieve these positive outcomes.

The study results were agreed with the study of **Morgan (2006)**, who clarified the role of clinical skills laboratory equipment and facilities as being essential in creating students ready for follow practice and link

what that they had learnt to the activities in clinical setting. Additionally, to **Durham & Alden (2008),** emphasize on importance of clinical policies as orientation to students concerning structure work assignment that's needed of students in all laboratories and clinical activities.

These results was in dissimilarity to the findings of **Doody & Condon (2012)** , which found that interaction between the learner and the teacher includes the center of education and learning. As student learning happens through active engagement with the topic matter, lectures is also ineffective for such engagement. **Haraldseid, Friberg&Aase (2016)** at Kingdom of Norway, illustrated that involvement of students within the method of developing new technological learning material enhances student identification of necessary learning needs. Further, the utilization of students' associated teachers' information in a co-design method seems to be the main optimal level of involvement for each students and instructors.

The present study results showed that, no statistically significant relations between opinions of students and clinical instructors relating to importance of structure standards (Faculty laboratories, Manpower, Clinical Policies) and process standards. These results were in the same line with the study results of **Happel (2008)**, when reported that relation between student and clinical instructors that enough time and support from clinical instructors was a very important aspect of a positive clinical placement in mental health care. As well, **Levett-Jones et al., (2009)** found that the relation between staff and students is the most vital influence on nursing students' sense of belonging and learning.

This findings in agreement with **Morbach (2015),** who determined that instructors who encourage student's participation and develop positive rapport and social relationships with their students maintain the professional boundary student interactions that enhances the academic expertise of the students. There have been statistically significant relations between opinions of students and clinical instructors concerning importance of outcomes standards.

These findings supported by **Suikkala&Leino-Kilpi (2005)**, who showed that students reported themselves as highly satisfied with the scale regarding the mentorship relationship, as that student' experiences of their relationships and of being treated as distinctive people are supporting agents for their learning. Additionally, to, **Brynildsen et al., (2014)** at Kingdom of Norway, who pointed to the students' satisfaction was completely associated with all the individual items of the factors comprising the educational environment in clinical settings.

The present study demonstrated that the structure standards had the high level of application followed by process standards. Regarding to structure standards: equipment and supplies, Manpower and clinical policies had the same level of applicability followed by faculty laboratories standard. In a similar study, **Croxon&Maginnis (2007),** they concluded that a strong need to supply appropriate quantity of simulation procedures and facilities with their clinical skills, overall the students powerfully supported the read that the clinical laboratory preparations ready them for follow within the clinical setting. This result was congruent with **Rye (2008)**, who stressed that all the respondents agreed that the learning opportunities based on the clinical policies that facilitated their ability to apply their knowledge to practice.

Regarding to process standards, as task orientation had the high percentage of applicability. These results were agreed with those of a study carried out by **Bigdeli et al, (2015)** , who showed that, students perceived task orientation as an important factor that influences the outcomes of their clinical placement. The students perceived the opportunities for themselves to be directly involved with hands-on skills often controlled by clinicians and clinical teachers. It is apparent that the participants have enjoyed applying their learned skills into practice in the clinical environment. As well **Yazdankhah (2008)** also indicated clinical learning environment clear course objectives and tasks were the most important factors in clinical educational environments. This findings was also supported by **Smedley and Morey (2010)**,who found that together with personalization, student involvement (the extent to which students participate actively and attentively in hospital ward activities) was the most important aspect of students' preferred clinical learning environment.

Conclusion

The study concluded that the proposed standards were agreed upon their content and face validity by majority of jury experts. Also, structure standards is the most important followed by process standards and outcome standard from clinical instructors (demonstrators and assistant lecturers) points view without statistically significant relation between two groups. There were statistically significant relations between opinions of students and clinical instructors about importance of outcomes standard. The structure standards had the high percentage of applicability followed by process standards.

Recommendation

Based on the results of this study, it was recommended that, Using the standards and criteria developed for clinical learning environment as guide-lines to improve practical training and clinical skills. The faculty laboratory should be prepared with sufficient materials and equipment for training of all students. Provide workshops: a structure faculty development programs that focus on practical teaching skills.
Development and the educational strategies directly applicable to those teaching skills. A safe environment refers to emotional, cultural and professional safety, as well as physical safety and a non-judgmental, environment wherever learners feel it is safe to participate, raise queries, applicable ratios of learners to educators, to make sure educators aren't given an excessive amount of responsibility to be effective or conscious of individual learners and additionally to make sure learners have access to practiced clinicians as needed.

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