ABSTRACT

The clinical learning environment and supervision (CLES) tool has been enhanced with an additional sub-scale for measuring the quality of nurse teacher's involvement to form the CLES+T scale. It has been widely used in many countries to evaluate clinical placements. Here we report data from Saudi Arabia.

The CLES+T was employed to measure satisfaction among student nurses concerning their clinical learning environment. Linear regression was used to determine relationships of various variables to the outcomes of total CLES+T score and those of its subscales.

Students were generally satisfied with their placements. For female students the number of visits of the nurse tutor was positively associated with most subscales and with the total score. For males, who had fewer visits of nurse tutor, there was no such association.

Nurse tutor visits are positive in terms of clinical placement evaluation by female student nurses. Saudi nursing students are generally similar to students in other international studies in terms of their appraisal of clinical placements.

INTRODUCTION

The aim of nurse education is to support nurses' transition from classroom instruction to work in real clinical practice (Antohe et al., 2016). Students are at least as satisfied with learning in practice as they are with theoretical instruction in the college, indeed even when they are dissatisfied with the nursing course they still value the clinical component (Espeland and Indrehus, 2003).

In recognition of the substantial number of nurses and midwives who contribute to all fields of healthcare across the world, the World Health Organisation (WHO) made a strong commitment to initial nursing and midwifery education through the development of global standards (WHO, 2009).. These global standards aimed to establish educational criteria and to be outcomes based, which focus on the acquisition of competencies, in addition to promoting progressive education and lifelong learning (Dyson, 2017). Part of the work to develop global standards involved schools of nursing and midwifery rethinking curriculum design to ensure theory and practice elements are equally weighted. As a consequence it is commonplace to find initial education programmes requiring students to spend half their time in practice and half in the theoretical setting, for example in the UK preregistration nursing programmes have a requirement of 50% theory and 50% practice (NMC, 2010).

In terms of programme structure there is an expectation that initial programmes should feature elements of classroom and clinical learning, although no reference is made to the ratio of theory to practice, save the need for programmes to balance theoretical and practice components of the curriculum. WHO make mention of the need to use recognised approaches to learning and teaching in programmes including, but not limited to adult education, self-directed learning, e-learning and clinical simulation (WHO, 2009 p24). It is not uncommon therefore to find student nurses spending a considerable time in placement, for example as stated above in the United Kingdom with a 50:50 split between clinical and classroom education.

In the Kingdom of Saudi Arabia the course is part theory and part practice with various models having been employed, for example using clinical teachers who may be from within the nursing staff of the placement or hold joint positions within the university and hospital. There are advantages to both positions, as nurses working in the hospital have credibility but students value having someone who can be an advocate who is not solely employed by the hospital (Gustafsson et al., 2015) and they value the objectivity of a teacher external to the clinical unit (Bisholt et al., 2014; Gustafsson et al., 2015). Students mostly agree that in either model the teacher, whether university or hospital employed, is able to link theory with practice (Gustafsson et al., 2015). An instrument that captures the student experience in both academic and practice based nurse education is valuable (Bergjan and Hertel, 2013). Students perceive success in the clinical setting mostly on how the ward staff act towards their own colleagues but the next most important was how ward staff related to external people, which included student nurses (Doyle et al., 2017).

BACKGROUND/LITERATURE

Clinical education research had for decades prior to CLES considered the pedagogical environment and supervision by trained nurses of student nurses in clinical settings (Bisholt et al., 2014) but this misses out many aspects such as leadership.

CLES+T was built by adding to the clinical learning environment and supervision (CLES) tool an "additional sub-scale to the CLES scale for measuring the quality of nurse teacher's co-operation with the crucial actors in the clinical practice of student nurses" (Saarikoski et al., 2008). The five subscales are pedagogical atmosphere (9 items), leadership style of the ward manager (4 items), nursing care on the ward (4 items) supervisory relationship (8 items) and role of nurse teacher (9 items).

The CLES+T has been compared with other instruments and it was found to be the only one that measured all the relevant constructs (Nicotera et al., 2017). It has been employed in a variety of clinical settings, for example hospitals (Bisholt et al., 2014) and care homes (Carlson and Idvall, 2014). It has been used in non-nursing groups such as medical students (Moller et al., 2017).

The tool has been translated and validated into many languages including Slovenian (Zvanut et al., 2018), Croation (Lovric et al., 2016), German (Mueller et al., 2018), Korean (Kim et al., 2018), Italian (Comparcini et al., 2016; Tomietto et al., 2012), Spanish (Vizcaya-Moreno et al., 2015), Greek (Papastavrou et al., 2015) and Norwegian (Henriksen et al., 2012).

It has been used to assess clinical learning environments in Sweden (Bisholt et al., 2014; Froberg et al., 2018; Gustafsson et al., 2015), Australia (Doyle et al., 2017), Germany (Bergjan and Hertel, 2013), Cyprus (Papastavrou et al., 2016), Italy (Comparcini et al., 2014; Comparcini et al., 2016; Cremonini et al., 2015; Magnani et al., 2014) and Norway (Skaalvik et al., 2011).

International comparative studies have used it in new member states of European Union: the Czech Republic, Hungary, Lithuania and Romania (Antohe et al., 2016) and the countries of Cyprus, Belgium, England, Finland, Ireland, Italy, Netherlands, Spain and Sweden (Warne et al., 2010). There are no studies employing CLES + T in any Arab country and this study provides the first study using this tool in an Arab country – Saudi Arabia. It may be used as a benchmark for further studies in the Middle East.

It has been used to measure learner experience in hospitals compared with nursing homes (Skaalvik et al., 2011), where the former scored more highly but not on every item. For example in nursing homes students were known by name, probably due to the lower turnover and smaller staff

numbers. While the experience was rated lower than in hospitals it was still seen as positive (Skaalvik et al., 2011). It has been used to compare hospitals, community, primary care and psychiatric care (Bisholt et al., 2014). It has shown that longer placements are better evaluated by students (Warne et al., 2010). Reasons include that shorter placements allow fewer opportunities to develop relationships with patients and longer placements allow the whole nursing process to be seen (Warne et al., 2010). The most important predictor of positive student experience in placement is the culture of the unit with a positive culture (e.g. no sarcasm or negativity towards students) associated with positive experience (Doyle et al., 2017). A culture that tolerates faults and errors allows these to be part of the learning process (Warne et al., 2010). Conversely an unwelcoming environment is detrimental to learning as the student works on being accepted rather than being a learner (Ranse and Grealish, 2007). Supervisors of students themselves need support to prepare them to supervise with confidence (Skaalvik et al., 2011) and in Cyprus (for example) mentors attend a compulsory two day seminar (Papastavrou et al., 2016) to understand the nursing curriculum and learn how best to support students.

In King Saud University, through small group discussions among nursing students, there seemed to be many challenges that students have faced in their respective clinical placements. Students raised various concerns and their expectations were not necessarily met in clinical placements. The challenges faced included how learning is attained in the nursing ward, the relationships needed to be established between preceptors and nurse managers and the role of the nurse teacher. It was felt therefore that the university needed to evaluate clinical placements.

Learning in clinical placement was and is evaluated using a clinical appraisal tool developed by each department. Each department decided the competencies for a particular course. The content of the evaluation tool focuses on the knowledge, skills and attitude of the learner as evaluated by the teacher. However, these tools do not evaluate all relevant aspects of learning in the clinical placement. The university explored various tools and for reasons given above it was considered that CLES+T met the needs of evaluating the clinical placements. In addition using one tool across all clinical placements allowed comparison across the placements. In particular whereas the clinical appraisal tool used in clinical placements at King Saud University evaluated knowledge of students, CLES+T measured the experience of the student.

METHODS

The clinical training for nursing students in KSU starts in the simulation laboratory. Prior to a clinical placement, students are exposed to learn from case scenarios utilizing high-fidelity mannequins that simulate medical conditions which can be encountered in the hospital. This allows for a deliberate practice of skills but instils realism and real time problem solving activities with supervised instruction in a safe and controlled learning environment. Coordination between the hospital and the university is ensured by communicating to the nursing education head of the training hospital, the specific clinical objectives that are to be met by the students while in training. The head nurses are informed of these requirements which are then coordinated to the assigned preceptors of each student.

The learning in practice is evaluated through the competency checklist relative to the course objectives. The indicators measured in this evaluation are categorized into knowledge, skills and attitude that should be met for the course.

We surveyed 141 nursing students using the CLES+T tool to measure satisfaction among student nurses concerning their clinical learning environment in King Saud University, College of Nursing. Our

sample was drawn from students who were registered on clinical courses in King Saud University, College of Nursing. Our inclusion criteria were student nurses who were registered on clinical courses. Approval for our study was obtained from King Saud University Ethics Committee and participation in the study was voluntary. Statistical methods for data analysis were logistic regression to establish any explanatory demographic variables for the outcome variables of total CLES+T and its five subscales. We compared the results of overall score and subscales to other international studies where data are known.

DATA/RESULTS

Most students were aged 21-30 (74%) with 8% less than 21 and 18% over 30. There were more females (61%) than males. 45% met with their nurse teacher one to two times, 26% three times and 29% more than three times. E-communications were not used at all by 33%, see Table 1.

There were no differences between the clinical areas (medical, surgical, orthopaedic, theatre, renal, cardiology and other) for total score (ANOVA p=0.48) or any subscore so data were merged. Individual scores and subscores are given in Table 2. Only 18% of total scores were below 2.5 indicating dissatisfaction and the majority were either in the 2.50-3.49 range (neither agree nor disagree 38%) or 3.50-4.49 range (agree to some extent 38%) with 6% in the 4.5-5 range (fully agree).

Demographic variables were employed as explanatory variables in linear regression with total score or subscores as dependent variables. For total score number of times met with nurse tutor was significant (standardised beta 0.30, p=0.018). This variable was also significant for subscales pedagogy (standardised beta 0.35, p=0.007), supervision (standardised beta 0.26, p=0.04), leadership (standardised beta 0.30, p=0.019), teacher role (standardised beta 0.28, p=0.03) but not nursing care (p=0.72). In addition to times met with tutor, gender was significant for pedagogy (standardised beta 0.39, p=0.018), leadership (standardised beta 0.49, p=0.003), nursing care (standardised beta 0.48, p=0.004) and total score (standardised beta 0.38, p=0.019). The only other significant variables was e-communications with nurse tutor (standardised beta 0.24, p=0.041) for supervision. The results of the regression for overall score are shown in Table 3.

DISCUSSION

Clinical placements are supported in Saudi Arabia by nurses within the unit or joint post holders between the university and hospital. This is similar to placements in Sweden (Bisholt et al., 2014; Gustafsson et al., 2015) where clinical support is delivered by university staff (who visit students but do not engage in routine clinical work) or clinical staff affiliated to the university. These models of clinical support are also widely employed in other European countries (Papastavrou et al., 2016). As clinical staff get more involved in supervision there is a trend for university staff to move to more indirect work such as liaison (Warne et al., 2010). Thus the clinical placement support in Saudi Arabia is consistent with practice in Europe.

Table 4 shows data from other countries. In some studies not all subscores were collected and in some cases mean values were given but not standard deviations. These data are from hospital or mostly hospital placements. There are data on other clinical areas e.g. nursing homes (Skaalvik et al., 2011) but these are not reported here. It is seen that the scores are similar across European

countries and these are in turn similar to the current study, though scores are a little lower for all subscores with the exception of the teacher role.

Students in Saudi Arabia were generally satisfied with their placements with only a small percentage overall giving a score that indicated they disagreed with the items (all items are positively coded).

The fact that the number of times the student met with their tutor was a significant positive influence on total CLES+T score is not unexpected as there is evidence that the one to one relationship is important to student learning in the clinical area (Warne et al., 2010). Where group supervision is compared to individual supervision those nursing students having individual supervision were more satisfied with the placement (Antohe et al., 2016; Papastavrou et al., 2016). This variable is associated with each subscale except nursing care. This might be expected as while the clinical teacher can have an effect on pedagogy, teaching, supervision and leadership there is no obvious way they could improve nursing care though it is stated a good learning environment is associated with good nursing care (Warne et al., 2010). E-communication was beneficial in supervision.

Gender was relevant with males having significantly higher scores once other variables have been taken into account. This was surprising since their raw scores for total and subscales are not significantly different (independent groups Student's t test). Males meet with tutors less often than females with a median of one for males and two for females and this difference is significant (Mann Whitney p=0.038). It would seem that despite having fewer visits males score similarly to females and thus having taken account of number of visits males have higher scores than would be expected (even though the actual scores are similar). Furthermore when a separate analysis is done for males and females then number of visits is even more significant for females (standardised beta 0.50, p=0.001) but not significant at all for males (p=0.731).

The Kingdom of Saudi Arabia implements a gender-segregated higher education system. The curricula in universities differ for women and men based on the courses available for each to take though this is not the case for nursing.

It would seem males get less effect from visits than females. The reason for this is not clear. It could be postulated that age was relevant as males were older, however age was not relevant when other variables had been taken into account so this is unlikely to be a cause. It could be that the number of nurse tutor visits needs to exceed one (the median for males) to have an effect. It could be that the nurse tutors visiting the males were in some way different to those visiting females. One definite difference is that male students are visited by male tutors and female students by female tutors. Whether this is relevant is a moot point and it may be some other factor we had not considered or measured that is the reason for this gender difference.

We explored the literature to ascertain if there were known differences in terms of gender in clinical practice. The only paper we could find was a Canadian study (Sedgwick and Kellett, 2015) that used the Belongingness Scale-Clinical Placement Experience questionnaire. This showed male student nurses demonstrated significantly lower scores than females on the efficacy subscale. The authors claim these findings suggested some male student nurses experience feelings of marginalization and discrimination, though we see no evidence of this. They recommended practice environments be encouraged to deinstitutionalize policies and procedures that accentuate femininities of care. How relevant this is to a Saudi context is highly debatable. Firstly most Canadian nurses are female but the numbers are more equal in Saudi Arabia. Secondly the genders generally do not mix in Saudi society. Thirdly the culture in Saudi Arabia is very different to Canada. It is possible males need less

validation in that society than females. It is possible that males in other cultures such as Western Europe and the USA also need less validation.

What data we have on gender are very limited. One reason is that in most countries nursing is predominately a female profession. In an Australian study (Doyle et al., 2017) 6% of nursing students were male and in two Swedish studies (Bisholt et al., 2014; Gustafsson et al., 2015) 13-15% of nursing students were male. Across nine European countries (Warne et al., 2010) the overall average for male students was 11% though some countries such as Italy and Cyprus had male ratios over 21%. The average male nursing student ratio for four new entrants to the European Union (Antohe et al., 2016) was 12%. With small numbers it is not necessarily useful to consider gender as a factor though in a large study (N=1903) where even with a small male proportion an analysis by gender was possible, gender was not found to be significantly associated with satisfaction of the placements (Warne et al., 2010). This would imply the Saudi experience of male students is not generalisable to, at least, some other countries.

It is known continual communication with supervisors and students on placement is crucial (Antohe et al., 2016) whether by face to face meetings or email/telephone etc. It may be thought that one supervisory meeting (typical of Saudi male students) is just insufficient a “dose” to have a meaningful effect and any issues raised in such a meeting would need additional meetings to address concerns of fix problems. Students feel abandoned with too few visits (Papastavrou et al., 2016). However given number of meetings was not significantly associated with higher scores in Saudi male students there is no evidence supporting this assumption. The timing of visits may be relevant since students when Norwegian students had a first visit two to three weeks into the placement they considered this too late if they had problems with their placement (Gustafsson et al., 2015).

We explored whether there were differences in placements between male and female students. There were some differences, for example male students did not have either maternity or paediatric placements. However as there were no differences between clinical areas with respect to CLES + T scores we do not consider this relevant. The length of placements is the same for male and female students who both pursue the same curriculum so this also is not an explanatory factor. On average students spend 90 hours per clinical placement which would be 2.4 weeks in Europe at 37.5 hours per week and much lower than European standards where eight to twelve weeks would be typical. While this does not explain any gender differences it could explain the slightly lower values for Saudi students compared to European students as longer placements tend to be scored higher in CLES + T.

The findings of the study was disseminated to the faculty and department heads which provided for an opportunity for discussion on this matter. There was no feedback regarding any cultural issues with regards to the utilization of the tool. Currently, the competency checklist used for evaluation are now being revisited by each department for revisions to include aspects to be measured regarding the clinical learning experience.

A qualitative study exploring how Saudi students of either gender view supervision in placements would be a useful addition to the literature.

Gender however was not a factor this study was intending to explore, it simply arose from the analysis. It is problematic to put much weight to an incidental finding.

CONCLUSION

CLES + T is reliable across cultures and settings (Doyle et al., 2017) and in its first use in an Arab country it presented with no particular problems in use.

Clinical placements are evaluated by Saudi nursing students slightly lower compared to other international studies. This may be due to short placement lengths and if longer placements were implemented it is expected students would value them higher. More frequent visits by nurse tutors have a beneficial effect on female students but not on male students in this sample from Saudi Arabia.

Use of the CLES+T in Saudi Arabia needs further work to evaluate longer placements and to explore the gender differences we have shown. Qualitative work exploring how males and females experience their placement, especially in relation to nurse tutor visits will be useful.

Table 1: e-communications

	N	%
Never used	46	32.6
1-3 times	55	39.0
4-6 times	16	11.3
More often than 6	24	17.0
Total	141	100.0

Table 2: Scores of CLES+T

Item	Mean	SD
Pedagogical Atmosphere: The staffs were easy to approach.	3.25	1.26
Pedagogical Atmosphere: I felt comfortable going to the ward at the start of my shift.	3.28	1.24
Pedagogical Atmosphere: During staff meetings (e.g. before shifts) I felt comfortable taking part in the discussions.	3.11	1.20
Pedagogical Atmosphere: There was a positive atmosphere on the ward.	3.13	1.19
Pedagogical Atmosphere: The staffs were generally interested in student supervision.	3.07	1.26
Pedagogical Atmosphere: The staff learned to know the student by their personal names.	2.94	1.30
Pedagogical Atmosphere: There were sufficient meaningful learning situations on the ward.	3.18	1.11
Pedagogical Atmosphere: The learning situations were multi-dimensional in terms of content.	3.10	1.16
Pedagogical Atmosphere: The ward can be regarded as a good learning environment.	3.30	1.28
Leadership style of the ward manager (WM): The WM regarded the staff on her/his ward as a key resource.	3.21	1.13
Leadership style of the ward manager (WM): The WM was a team member.	3.35	1.17
Leadership style of the ward manager (WM): Feedback from the WM could easily be considered as a learning situation.	3.26	1.25
Leadership style of the ward manager (WM): The effort of individual employees was appreciated.	3.33	1.20
Nursing care on the ward: The wards nursing philosophy was clearly defined.	3.06	1.26
Nursing care on the ward: Patients received individual nursing care.	3.40	1.13
Nursing care on the ward: There were no problems in the information flow related to patients' care.	3.45	1.11
Nursing care on the ward: Documentation of nursing (e.g. nursing plans, daily recording of nursing procedures etc.) was clear.	3.27	1.25
The supervisory relationship: My supervisor showed a positive attitude towards supervision.	3.22	1.33
The supervisory relationship: I felt that I received individual supervision.	3.11	1.28
The supervisory relationship: I continuously received feedback from my supervisor.	3.13	1.33
The supervisory relationship: Overall I am satisfied with the supervision I received.	3.14	1.26
The supervisory relationship: The supervision was based on a relationship of equality and promoted my learning.	3.19	1.27
The supervisory relationship: There was a mutual interaction in the supervisory relationship.	3.11	1.22
The supervisory relationship: Mutual respect and approval prevailed in the supervisory relationship.	3.28	1.23
The supervisory relationship: The supervisory relationship was characterized by a sense of trust.	3.48	1.24
Role of the nurse teacher: Nurse teacher as enabling the integration of theory and practice: In my opinion, the nurse teacher was capable to integrate theoretical knowledge and everyday practice of nursing.	3.42	1.31
Role of the nurse teacher: Nurse teacher as enabling the integration of theory and practice: The teacher was capable of operationalizing the learning goals of this clinical placement.	3.41	1.22
Role of the nurse teacher: Nurse teacher as enabling the integration of theory and practice: The nurse teacher helped me to reduce the theory-practice gap	3.40	1.28
Role of the nurse teacher: Cooperation between placement staff and nurse teacher: The nurse teacher was like a member of the nursing team.	3.41	1.28
Role of the nurse teacher: Cooperation between placement staff and nurse teacher: The nurse teacher was able to give his or her pedagogical expertise to the clinical team.	3.35	1.23
Role of the nurse teacher: Cooperation between placement staff and nurse teacher: The nurse teacher and the clinical team worked together in supporting my learning.	3.30	1.21
Role of the nurse teacher: Relationship among student, mentor and nurse teacher: The common meetings between myself, mentor and Nurse teacher were comfortable experience.	3.43	1.22
Role of the nurse teacher: Relationship among student, mentor and nurse teacher: In our common meetings I felt that we are colleagues.	3.28	1.29
Role of the nurse teacher: Relationship among student, mentor and nurse teacher: Focus on the meetings was in my learning needs.	3.33	1.28
Pedagogy subscore	3.15	0.92
Supervision subscore	3.20	1.08
Leadership subscore	3.28	0.98
Nursing care subscore	3.29	0.93
Teacher role subscore	3.37	1.06
Total score	3.26	0.84

Table 3: Regression of total score with

	Unstandardized Beta	Standardized Beta	P value
(Constant)	2.845		<0.001
Age	-.034	-.183	.281
Gender	.749	.384	.019
Level	.092	.073	.559
GPA	-.004	-.004	.973
Number of clinical hours of last clinical placement	-.007	-.054	.929
Did you use e-communication tools with your Nurse Teacher during clinical placement:	.079	.114	.327
Number of clinical hours of last clinical placement	.033	.046	.940
How many times did you meet with the Nurse Teacher during the latest clinical placement?	.315	.303	.018

Table 4: International comparisons

	Pedagogy mean (sd)	Supervision mean (sd)	Leadership mean (sd)	Nursing care mean (sd)	Teacher role mean (sd)	Total mean (sd)
Sweden (Gustafsson et al., 2015)					3.4 (0.95)	
Saudi Arabia (current study)	3.15 (0.93)	3.21 (1.08)	3.30 (0.97)	3.30 (0.93)	3.37 (1.06)	3.26 (0.84)
Cyprus, Belgium, England, Finland, Ireland, Italy, Netherlands, Spain and Sweden (Warne et al., 2010)	4.0 (0.9)	4.05 (1.01)	3.61 (0.94)	3.84 (0.84)	3.34 (0.96)	
Czech Republic, Hungary, Lithuania and Romania (Antohe et al., 2016)	3.74 (0.88)	3.91 (0.99)	3.85 (0.91)	3.99 (0.85)		
Norway (Skaalvik et al., 2011)	3.87 (0.92)	4.18 (0.96)	3.71 (0.97)	3.94 (0.7)		
Sweden (Bisholt et al., 2014)	4.1 (0.7)	4.3 (0.8)	3.7 (0.9)	3.8 (0.7)	3.3 (0.9)	

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