Kes Mas: Jurnal Fakultas Kesehatan Masyarakat
Volume 12, Issue 1, March 2018, pp. 21 ~28
ISSN: 1978 - 0575

Clinical Handover Standard for Midwifery Students: Improving Safety Attitudes in Maternity Services

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Received: 17/06/2015; published: 12/01/2018

Abstract

Background: Midwifery students sometimes are not involved during the clinical handover in maternal health services, so they potentially get the negative impact on patient safety. This study was to assess the effect of the implementation of clinical handover standard for midwifery students as an effort to improve safety attitudes in maternity services. **Method:** A quasi-experimental with post test only design was conducted on 30 midwifery students at Amanda Maternity Services. Clinical handover standard with Situation, Background, Assessment and Recommendation (SBAR) Framework was used as a guideline. **Results:** Observation checklist was completed by Clinical Instructor (CI) while student and CI completed safety attitude questionnaire. A semi-structured interview was also conducted with midwifery student and clinical instructor. The result of this study showed that CI observation that 93.3% of students were competent in the application of clinical handover. Students' safety attitudes also changed significantly after implementation of clinical handover standards (p=0.0005). **Conclusion:** Majority of the students and clinical instructor stated that the application of clinical handover help students to reduce the confusion of the patients' problem to prevent errors in maternity care.

Keywords: clinical handover standard; maternity services; midwifery students; safety attitudes

1. Introduction

Clinical handover is an essential part of communication that can improve patient safety. That is an integral part of clinical care, practiced in a multitude of ways, in all healthcare settings, every day.(1) Clinical handover involves the transfer of information, professional responsibility, and accountability for patient care from one clinical team to another either temporarily or permanently.(2)

Poor communication at clinical handover has been identified as a contributing factor in adverse incidents where patient care is put at risk and as a primary preventable cause of patient harm. Poor handover can also lead to wasted resources. Consequences include: unnecessary delays in diagnosis, treatment, and care so leading to increased risk of infection and/or exacerbation of infection or illness, which may lead to reduced patient outcomes, death or prolonged hospital stays; repeated tests, missed or delayed communication of test results; and incorrect treatment or medication errors.(1),(3),(4)

The causes of handover failures cannot be attributed to just one professional group or form of handover, failures also relate to communication breakdowns between different professional groups. Rather than communicating information only within their profession, all clinicians need to adopt a multidisciplinary approach to handover to ensure the successful flow of information and effective continuity of care.

Midwifery students on clinical placement are part of the clinical team who give care to obstetric patients. They are often required to perform many medical procedures such as

identification and assessment of patients, administer medications, deliver patient, etc. However, midwifery students sometimes are not involved during the clinical handover (ward rounds or shift handovers) in maternal health services so that they potentially make a negative impact on patient safety. Students should be taught how clinical handover right, create a documentation of his own and then simulate to other student teams at the turn of the shift or at the time of care.[5] This research to assess the effect of the implementation of clinical handover standard for midwifery students as an effort to improve safety attitudes in maternity services.

2. Method

This study used a quasi-experimental with a post-test design. The subject was midwifery students who were at clinical placement at Amanda Maternity Services (n=30). The subject was divided into two groups, intervention (n=15) and control group (n=15). Students are from several educational institutions midwifery in Yogyakarta. The inclusion criteria were students in the third year of midwifery that passed the Midwifery Care Module. Samples were taken at different times between the control and intervention groups so that they did not meet. The student control group was evaluated in February while the intervention group was evaluated in March, both evaluated after carrying out the placement for three weeks.

Either the control group or the intervention group was equally evaluated post-test the safety attitudes questionnaire filled Clinical Instructor and students, then interviewed in depth related to the implementation of patient safety and clinical handover. The control group did practice as usual practices. Being a student who intervened in the first week are taught how to perform clinical handover with SBAR framework.[6] At week two and three, students were included in clinical handover, especially during the ward round and shifted handover. Students were also given the opportunity to create and simulate clinical SBAR handover to other students on the next shift.

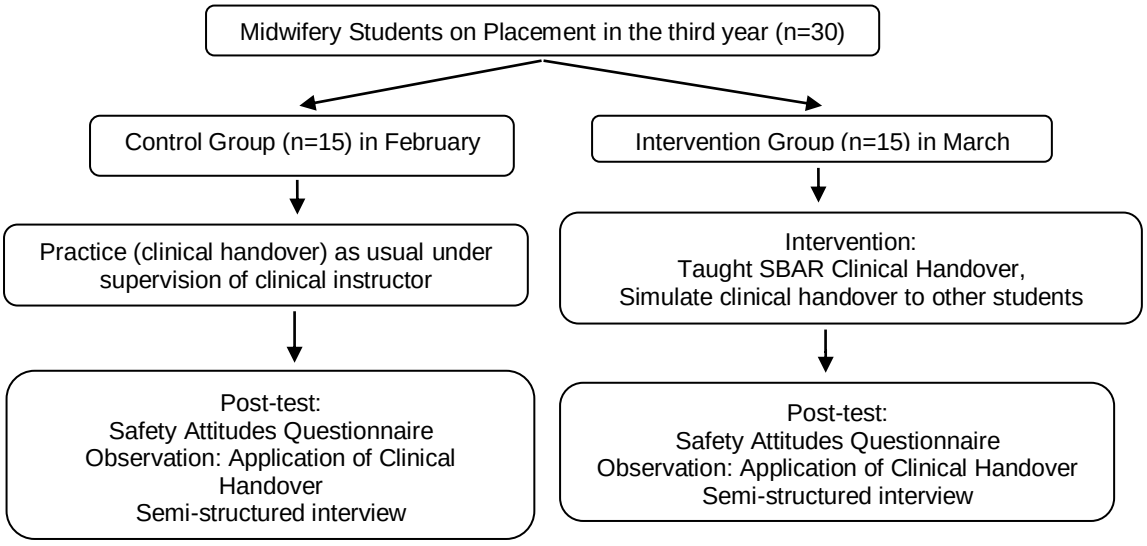

Figure 1. Research Procedure

Safety Attitudes Questionnaire (SAQ)[7] regarding communication and clinical handover is used to assess the safety attitudes of students. There were: a) Teamwork Climate (TC), b) Safety Climate (SC), c) Job Satisfaction (JS), and d) Stress Recognition (SR). Each scale is converted in advance of Likert scale - 5 points to a scale (1=disagree strongly, 2=disagree slightly, 3=neutral, 4=agree slightly, 5=agree strongly).

Structured observations were conducted to evaluate the ability of students to apply the clinical handover. View structured was adopted from Essential Clinical Skill, Royal College of Nursing, Australia.[8] That observation consists of identifies indication, conducting in private surrounding, uses a template, information is accurate, concise and complete,

medical terminology is appropriately used, delivery of information is timely, and demonstrates an ability to link theory to practice.

To understand the experiences and feelings of students in the application of clinical handover, they were also interviewed. Questions in a semi-structured interview were “what experience do you get from the simulation of clinical handover and can the clinical handover help you learn the patient condition."

3. Results and Discussion

3.1. Participants

Thirty students (100%) participated in this study. Characters of the subjects among the two groups (control and intervention) did not differ significantly (Table 1).

Table 1. The Performance of Students Characteristic

No	Characteristic	Group		Total	p
		Control	Intervention		
1	**Grade Point Average (GPA)**				
	Mean	3.1	3.05	-	
	Min-Max	2.7-3.7	2.5-3.6	-	0.372
	95% CI	2.88-3.22	2.89-3.21	-	
2	**Exposure Clinical Handover Materials**				
	Nonexposed	13 (86.7%)	14 (93.3%)	27 (90%)	0.542
	Exposed	2 (13.3%)	1 (6.7%)	3 (10%)	
3	**Grade of Previous Placements**				
	A	7 (46.7%)	7 (46.7%)	14 (46.7%)	
	B	7 (46.7%)	8 (53.3%)	15 (50%)	
	C	1 (6.7%)	0	1 (3.3%)	1.067
	D	0	0	0	
	E	0	0	0	

Generally, GPA of students did not be significantly different (p=0.372) as well as the Grade of Previous Placement (p=1.067). The similarity characteristics ensure that the GPA and Grade of Previous Placement did not affect these results.

The majority of students in the two groups were never exposed to clinical handover materials (p=0.542). Students were not specifically given clinical handover materials. That matter could cause the students did not understand how proper clinical handover. Students only saw health professionals (doctors, nurses or midwives) in the clinical handover. World Health Organization (WHO) has required that communications material especially clinical handover used as one of the materials in the multi-professional curriculum.[9]

Building students’ patient safety knowledge needs to occur throughout health worker school. Patient safety skills and behaviors should begin as soon as the students enter a hospital, clinic, or health services.[10] Nursing/midwifery students should be prepared for and learn the process of effective communication that promotes patient safety.[11] The knowledge and skill to carry out a hand-off report may be briefly addressed in the classroom or simulation laboratory setting but is mastered from the observation of mentors and peers; first as students and later as nursing staff.[12]

3.2. Observation of Implementation of Clinical Handover Standard

Table 2 shows that one of the seven items of student competence observation in the implementation of clinical handover did not be significantly different, i.e., Identifying Indication (p=0.063). However, six other items showed significant differences.

Table 2. The Performance of Observation of Clinical Handover Standard

Variables	Control (n=15)	Intervention (n=15)	Total	p
Identifies Indication				
Competent	7 (46.7%)	13 (86.7%)	20 (66.7%)	0.063
Require supervision	6 (40%)	2 (13.3%)	8 (26.7%)	
Require development	2 (13.3%)	0 (0%)	2 (6.7%)	
Conducting in private surrounding				
Competent	5 (33.3%)	13 (86.7%)	18 (60%)	0.013
Require supervision	4 (26.7%)	1(86.7%)	5 (16.7%)	
Require development	6 (40%)	1 (6.7%)	7 (23.3%)	
Uses a template				
Competent	4 (26.7%)	15 (100%)	19 (63.3%)	0.000
Require supervision	8 (53.3%)	0 (0%)	8 (26.7%)	
Require development	3 (20%)	0 (0%)	3 (10%)	
Information is accurate, concise and complete				
Competent	2 (13.3%)	12 (80%)	14 (46.7%)	0.000
Require supervision	7 (46.7%)	3 (20%)	10 (33.3%)	
Require development	6 (40%)	0 (0%)	6 (20%)	
Medical terminology is appropriately used				
Competent	4 (26.7%)	12 (80%)	16 (53.3%)	0.004
Require supervision	5 (33.3%)	3 (20%)	8 (26.7%)	
Require development	6 (40%)	0 (0%)	6 (20%)	
Delivery of information is timely				
Competent	4 (26.7%)	15 (100%)	19 (63.3%)	0.000
Require supervision	6 (40%)	0 (0%)	6 (20%)	
Require development	5 (33.3%)	0 (0%)	5 (16.7%)	
Demonstrates ability to link theory to practice				
Competent	3 (20%)	11 (73.3%)	14 (46.7%)	0.002
Require supervision	5 (33.3%)	4 (26.7%)	9 (30%)	
Require development	7 (46.7%)	0 (0%)	7 (23.3%)	

Adapted from Essenstial Clinical Skill, Royal College of Nursing, Australia

3.3. Identifying Indication

Identifying indication of the patient by the control and intervention groups did not differ significantly (p=0.063). Identify indication performed by assessing the problem and medical history of patients through anamnesis and physical examination. The process focuses on identifying any interpersonal difficulties and providing intervention techniques that promote optimal socialization. Caregivers have to be able to assess and identify changes in patient's conditions and be able to incorporate this critical information into their handoff process.[13] The ability to identify patients of both groups has been competent in the majority (66.7%), it is because students were often given the opportunity to perform a history and physical examination.

3.4. Conducting in Private Surrounding

For items of holding in private surrounding (p=0.013), 86.7% of the intervention group had competently while the majority of the control group (40%) still require development. Determining the location of the clinical handover was very important because the information which to is handed over was confidential data of patients. The place of clinical handover too must also be ensured free of distractions as possible - e.g., noise pagers, telephones noise and general ward.[14] Minimizing interruptions in conducting clinical shift handover in a designated location are essential. Interruptions disturb the flow of information and reduce concentration, which increases the potential for miscommunication and clinical errors.[15]

Locations for clinical handover were variously listed as: 'in a private area,' 'at the board,' at the nurses' station on the labor ward, in the induction room, in the HDU, in the parenting room.[14] The majority of the control group did the clinical handover in the patient's room with exposing all the information in front of patients and their families even though they are willing to surrender over to the next team. While intervention group did clinical handover at midwifery station and then around to the patient's room to make sure the data which was handed over had been right. Standard location is a policy that is determined by several health departments, i.e., Patient Safety Handover Checklist is completed with the

patient at the bedside, but confidential patient information, e.g., Diagnosis, is encouraged to occur outside the patient room or a secure area.[14]

3.5. Uses a Template

The control group still require supervision (53.3%) in uses a standard template, while all the students of the intervention group (100%) were competent. The control group did not use appropriate template documentation, all about patients written in a paragraph form that includes: identity (name), room, diagnosis, patient's condition, and treatment or prescribed medication. The intervention group used SBAR framework (Situation, Background, Assessment, and Recommendation) in the documentation of clinical handover.

Clinical handover is advisable to use a structured format documentation for efficiency, effectiveness, available to ensure all aspects are covered, ensure consistency, and improve the quality.[16] World Health Organization and others urge the use of common language and a standard communication tool such as SBAR.[17],[18],[19]

SBAR was developed by the Kaiser Permanente in Oakland, CA and provides clinicians with a framework for efficiently communicating with a patient's condition and needs. SBAR involves first clarifying the problem, then giving pertinent background information, followed by an assessment of the situation, and a recommendation.[20] SBAR was recommended as a structured communication tool that could be incorporated into handovers, ward rounds, and emergency situations. The rationale for developing an alternative tool to SBAR was to demonstrate clearly who was leading a professional provided maternity care during the woman's journey.[21]

3.6. Information is Accurate, Concise and Complete

The information was given by the students' control group also still required supervision (46.7%) while the majority of student intervention group (80%) were competent in providing accurate, concise, and complete information. The critical standards of effective professional communication specified that it should be complete, concise, concrete, clear, accurate, current, objective, unambiguous and understood by the recipient.[22] Handover must be understood by staff as an explicit transfer, not just of information, but of clinical accountability and responsibility.[15] Inadequate handover of clinical information carries significant risks for individual clinicians, their organizations and their patients: ineffective delivery of care and patient safety breaches and lead to errors in care.[16],[4]

3.7. Medical Terminology is Appropriately Used

Students in the intervention group were more competent than the control group in using the terminology of medical (p=0.004). Medical terminology is the language used by physicians and other members of health teams. Language differences may interfere with the accurate transfer of information. Using standardized medical terminology avoids errors in communication that may occur when colloquialisms are used. The use of abbreviations, other than those that are well known and widely accepted, should be discouraged. Common terminology for interpretation of the fetal heart rate tracing has been standardized by the National Institute of Child Health and Human Development, the American College of Obstetricians and Gynecologists, and the Society for Maternal-Fetal Medicine. This terminology also has been adopted by the Association of Women's Health, Obstetric, and Neonatal Nurses and the American College of Nurse-Midwives.[23] Medical terminology used in clinical handover should be clear, specific, and precise.

3.8. Delivery of Information is Timely

Intervention group more timely than the control group (p=0.000). The control group just did clinical handover if shift change, while intervention group did every a change happened. Clinical handover is not only at shift change, but every time shift in accountability and responsibility occurs. Timeliness of handover is imperative to ensure a sustainable and effective process. Handover must be timely, or people will just stop attending.[14] Performing of the handoff in a regular time and manner also can improve the sharing information. Patient handoff should take priority over all other duties except for emergencies.[23]

3.9. Demonstrates Ability to Link Theory to Practice

The ability of the intervention group better than the control group in connecting theory into practice (p=0.002). These capabilities can be developed by applying clinical handover during clinical placement. Giving responsibility to the students to conduct clinical handover by themselves under the guidance of clinical instructor encourages students to learn better.

3.10. Students Safety Attitudes

After implementation of clinical handover, students' safety attitude in intervention group better than the control group (p=0.0005). Patient safety attitude consists of teamwork climate, safety climate, job satisfaction, and stress recognition. The fourth item was described how a person has a good attitude patient safety.

Table 3. The Performance of Students Safety Attitudes

Variables	Mean (SD)		p
	Control (n=15)	Intervention (n=15)	
Teamwork Climate (TC)	19.13±2.31	27±1.89	<0.000
Safety Climate (SC)	16.93±2.15	28.73±1.33	<0.000
Job Satisfaction (JS)	18.6±2.59	20.8±1.01	0.0047
Stress Recognition (SR)	10.6±1.50	13±1.89	0.0006

p<0.05, the mean scores between the control group and the intervention group was significantly different by t-test

Communication is primarily clinical handover influences on patient safety. Some research shows that communication is key to minimizing the occurrence of medical errors.[3],[24] Significant increase occurred in the implementation of patient safety after a given intervention on the implementation of clinical handover. The implementation of patient safety was integrated with the application of clinical handover. That ensures that the aspects of safety can be carried out in line with the provision of midwifery care to patients.[25] Standardization of handover as part of a comprehensive system and wide strategy, will aid effective, concise, and inclusive communication in all clinical situations and contribute to improved patient safety.[15]

The clinical setting can be very stressful for the student as they embrace the fear of making a mistake with enthusiasm for beginning the practice of nursing/midwife. Education and training will be essential and need to cover general and local requirements, the use of specific terminology, how to prioritize patients and workers, and training in particular communication techniques and skills. Communication should be taught early to potential health personnel such as midwives. Curriculum-related patient safety has been required to be trained in the institution. However, that is not only be taught in the classroom and lab simulations but also should be taught in the healthcare setting. This process requires monitoring to enable continuous improvement.[8] Nursing/midwifery students should be prepared for and learn the method of effective communication. That promotes patient safety because patient safety is a major priority for all healthcare providers and it is a reasonable expectation that all undergraduate medical students should have the necessary competence to ensure that harm to patients is minimized in their future career as a health worker.[5],[26]

Besides being able to improve the attitude of patient safety, clinical handover implementation could also improve clinical experience. Majority of the students stated that giving responsibility in clinical handover made them learn a lot about: how to communicate between teams, could know what can cause errors in patient care, could create documentation of clinical handover standardized, could identify and study the patient's condition better, and improved sense of responsibility and self-confidence.

4. Conclusion

The majority of students have not been exposed to the clinical handover material so that effect to patient safety. This research showed that the implementation of clinical handover in midwifery students had a significant effect on student's competency of clinical handover, safety attitudes, and clinical experiences. So, it was expected to introduce since the beginning of patient safety materials including clinical handover to midwifery students in

class and lab simulation. Besides that, equally important for health services and clinical instructor to facilitate, guide and provide opportunities to midwifery students in implementing clinical handover standard.

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