Bayero Journal of Nursing and Health Care
bjnhc.nur@buk.edu.ng
Volume 5, Issue 1, June 2023 ISSN: 2756-6501
Pages 1108-1114

Health Care Providers' Factors Influencing the Effectiveness of Handover of Critically Ill Patients in Intensive Care Units in the Western Region of Kenya

Judith Seka Odhiambo[1], Damaris A. Ochanda[1], & John M. Okoth[1]

[1]Department of Nursing Research, Education and Management
School of Nursing, Midwifery and Paramedical Sciences
Masinde Muliro University of Science and Technology, Kenya.

Corresponding Author: Judith Seka Odhiambo
Corresponding Email: odhisjudith63@gmail.com

Abstract

Background: Handover involves the transfer of health care providers' responsibility and accountability for some or all aspects of care for a patient, or groups of patients, to another clinician or nurse on a temporary or permanent basis with communication being a major factor for the transfers. Effective handover is essential for safe health care and should used in all clinical situations. In Western Kenya, there is little evidence of studies carried out on the effective handover of critically ill patients in ICUs.

Material and Methods: A cross-sectional mixed method was adopted and administered to the selected study participants from the selected hospitals using a self-administered questionnaire and KII tool. The purposive sampling method was used to select the institutions while convenient sampling was used to pick 80 study participants. Quantitative data was collected by use of questionnaires and observation checklist while qualitative data was collected through key informant interviews and analysis was done thematically.

Findings: Health Care Provider variables including gender, age group, cadre, level of education and years of experience in working in the ICU showed no statistically significant association with the handover of critically ill patients. The mean age of the study participants was 34 years. In addition, the handover performance of Health care providers (p=0.3) and those with higher diploma qualifications (p=0.2) was up to 11.8 and 18 times more likely to be effective in clinical handover.

Recommendation/Conclusion: While the identified health care provider factors have no statistical significance to clinical handing over, having a higher diploma, being a nurse, having less than or equal to seven years of working experience and receiving formal training on clinical handover have been shown by this study to be beneficial for clinical handover. The study recommends further investigation into these factors through rigorous studies involving a larger sample size. The lack of formal standardized guidelines for clinical handover and training calls for the urgent need to establish standard guidelines and processes that can support clinical handover.

Keywords: *Handover, Health Care Provider Factors, Critically Ill Patients, Health Care Providers*

https://dx.doi.org/10.4314/bjnhc.v5i1.15

1.0 Introduction

As patients are moved into and out of critical care units (ICU), different nursing specializations must communicate with one another. Communication breakdowns are particularly frequent as a result of the obvious differences between the two situations (Horwitz et al., 2009). When high-acuity

patients are taken from the ED to an ICU, they may be critically ill. A seamless transition from one provider to another is necessary for continuity and quality of care to prevent negative effects (McFetridge et al., 2007). A smooth handover promotes communication, understanding, and a pleasant work environment (Manser et al., 2010). The information transmission includes all pertinent facts, thorough documentation, and options for subsequent medical care. [3]. The handover, which comprises more than just conveying specific, comprehensive information, provides a clear clinical image of the patient (Manser et al 2013). It also entails evaluating, making forecasts, and looking ahead to problems and uncertainties.

According to the sequential conversational analysis, verbal handoff promotes interactions between healthcare workers, allowing for inquiries and explanations while repeatedly going back to the paperwork, maintaining mutual understanding or common ground (Abraham et al., 2016). According to Mukhopadhyay et al. (2015), verbal handover fosters a clear mental and emotional picture of the patient, which is associated with higher satisfaction during handover.

The architecture of specialized units is unique and includes a wide range of technologies and structures. Unit boundaries, interactions between different specialists, and changes in therapy led to specific negotiation and teamwork challenges when patients were transferred from one unit to another (Hilligoss et al., 2013). Mistakes and procedural errors can result in negative impacts, delays in diagnosis and treatment, and omission of care due to insufficient and inadequate interpersonal communication during handover across several disciplines (Rabol et al., 2011). Communication during patient handover is one of the patient safety strategies, according to the World Health Organization (WHO) (WHO, 2007).

Interdepartmental collaborative transfers, which encourage mutual assessment of priorities and day-to-day departmental experiences, reduce interdepartmental disputes caused by limited knowledge and ambiguous diagnoses changes in patient condition (Abraham & Reddy, 2010). However, because transfers have a variety of causes, handover may not necessarily promote cooperation. There is currently a lack of trust between these other units and the ICU, which could result in ineffective coordination and jeopardize future contact. This lack of trust is a result of the trade-off delays experienced by healthcare providers and the possibility of sending patients to the incorrect specialist unit on purpose (Sujan et al., 2015).

The shift between the casualty departments and the ICU departments is unpredictable and unexpected because the casualty (Emergency Departments) accepts walk-in patients and cannot predict when to expect patients. A lack of knowledge about training and skills between emergency care providers in the pre-hospital setting and in-hospital staff has been identified as a barrier to effective communication during handover (Makkin et al., 2021). The handover procedures between the emergency department and intensive care unit have not been studied in Africa.

Because there aren't enough ICU beds available in the research context, patients are detained in the casualty area, which slows down patient flow. Patients are treated quickly in the casualty areas with the objective of dischargeing them immediately following complete treatment. The delay prevents information from flowing, which reduces the effectiveness of the handover (Rabol et al., 2011). Although standardized handover is recommended, there is no such mechanism between casualty sections and ICUs in the study's context. A structured approach aids in providing a shared library of content items that can help lay the groundwork for effective communication (Toccafondi et al., 2012); this will lessen inconsistency and the absence of significant data that may affect the consistency and efficacy of treatment. To better understand

the characteristics that affect how effectively critically ill patients are transferred between healthcare providers in intensive care units in Kenya's Western region, this study was conducted.

3.0 Methodology

3.1 Study Design

In the ICUs of four teaching hospitals—Moi Teaching and Referral Hospital (M.T.R.H.), Mediheal, Jaramogi Oginga Odinga Teaching and Referral Hospital, and Aga Khan Hospital—this study was carried out between December 2019 and December 2020. These four healthcare facilities have intensive care units and accept critically ill patients.

3.2 Study Design

A cross-sectional mixed-method research design was adopted which is a type of observational study that analyses both qualitative and quantitative data collected from a population or a representative subject at a specific point in time (Wang & Cheng, 2020). The ICU at Moi Teaching and Referral Hospital can accommodate 17 patients, whereas the ICUs at Mediheal Hospital, JOOTRH, and Aga Khan Hospitals can accommodate 5 patients apiece. A multi-stage sampling approach was used (it was done in two stages) whereby purposive sampling was used to select the healthcare facilities and convenience sampling technique was used to select the study participants. Due to the few number of healthcare providers working in the intensive care units in the study area, using a census approach, all health clinicians who provide direct care to the critically ill patients were selected to participate in the study. They included; 40 participants from MTRH, 15 from JOOTRH, 10 from Mediheal and 15 participants from Aga Khan Hospital.

Five healthcare professionals, including the heads of departments, were specifically chosen for the qualitative interviews (KII) out of the 80 healthcare providers who completed the questionnaire in order to fairly reflect a range of perspectives. Ethical approval and written consents were obtained from the relevant bodies and parties. Data analysis was done using the SPSS version 28. Quantitative data was analyzed using descriptive and inferential statistics. Qualitative data was analyzed through thematic content analysis. Significance was set at $p < 0.05$.

Results

4.1 Socio-demographic Characteristics of Respondents

Table 1 presents the socio-demographic characteristics of the 80 health workers who were interviewed. Nearly two-thirds (66.2%) were females compared to 33.8% males. Over one-half (56.2%) were in the age group of 30 – 39 years with an average age of 35.4 (±8.3 SD) and ranged from 23 to 55 years. Nine out of ten (90%) were health care providers. Slightly more than half (51.2%) had attained higher diplomas while one-quarter (26.2%) had bachelor's degrees. Sixty-two percent had work experience of between 0 – 9 years with a mean of 9.5 and SD of ± 7.9. The minimum number of years worked was one and a maximum of 30.

Table 1: Socio-demographic Characteristics

Variable	Response	N	%
Gender	Male	27	33.8
	Female	53	66.2
Age groups in years	20 – 29	15	18.8
	30 – 39	45	56.2
	40 – 49	10	12.5
	≥ 55	10	12.5
Mean age ± SD (Range)		35.4 ± 8.3 (23.0 – 55.0)	
Cadre	Doctors	6	7.5
	Nurses	72	90.0
	Clinical Officers	2	2.5

Level of education	Certificate	1	1.3
	Diploma	13	16.3
	Higher Diploma	41	51.2
	Bachelor's degree	21	26.2
	Masters	4	5.0
Years of experience	0 – 9	50	62.5
	10 – 19	20	25.0
	20 – 29	8	10.0
	≥ 30	2	2.5
Mean years of experience ± SD (Range)		9.5 ± 7.9 (1.0 – 30.0)	

4.2 Health Care Provider Factors Influencing Clinical Handover of Critically Ill Patients

Table 2 shows healthcare provider factors that are associated with clinical handover. Healthcare provider independent variables that were considered included gender, age group, cadre, level of education and years of experience working in the ICU. None of these variables were statistically significantly associated with effective handover within the ICU. However, the handover performance of nurses (p = 0.3) and staff with higher diplomas (p = 0.2) was up to 11.8 and 18 times more likely to have been effective from the data collected. The clinical handover was mainly face-to-face and written. The clinical handover process was not guided by any tool apart from one health facility which used situation background assessment and recommendation (SBAR). The majority of the respondents (82.5%) had been trained on patient handover.

Table 2: Health Care Provider Factors Influencing Clinical Handover

Independent variable	Categories	Total (n)	Evaluation of the Handover Process		OR	95% CI	p-value
			Effective (%)	Non-effective (%)			
Gender	Male	27	55.6	44.4	0.8	0.3 – 2.1	0.7
	Female	53	60.4	39.6			
Age group (years)	≤ 33	43	55.8	44.2	0.8	0.3 – 1.9	0.6
	> 33	37	62.2	37.8			
Cadre of staff	Nurse	72	61.1	38.9	2.6	0.6 – 11.8	0.3
	Doctor/CO	8	37.5	62.5			
Level of education	Higher Diploma	74	60.8	39.2	3.1	0.5 – 18.0	0.2
	Others	6	33.3	66.7			
Works experience in year	≤ 7	41	65.9	34.1	1.8	0.7 – 4.5	0.2
	> 7	39	51.3	48.7			
Trained on handover	Yes	66	59.1	40.9	1.1	0.3 – 3.5	0.9
	No	14	57.1	42.9			

According to key informant interview results, it was noted that the ICU clinical handover process is done differently according to various cadres in the different health institutions. Nurses, doctors, and clinicians have their unique ways of handing over their patients to corresponding staff.

> *"ok...the policies in clinical handover entails that you first of*

all...Aaah you need to be conversant with what to receive and how to receive especially things affecting safety checks of the client, that is the patient and then the cadre of a person you are handing over and it must be between activities. Nursing, a nurse should hand over to another nurse. A nurse cannot hand it over to the support staff. But also handing over happens at the level of the doctors, that is medicine now. And even at the level of the support staff, there is also handover. So this is just to ensure effective communication and actually, it is one way of ensuring that there is safety, because if you don't hand over properly information is likely to miss so you have missed out what we call continuum".Respondent; KII 05

"Unless there is something, it is for the nurses or the physiotherapists but not the doctors. The doctors are...There is those junior doctors' workflow. Now their practice is different from the consultants. The consultants when they are on call, the juniors will brief them about the patients. Part of it is on the plan for future management". Respondent; KII 03

Discussion

The study sought to determine how healthcare provider factors influenced the clinical handover of critically ill patients in intensive care. years of experience (P=0.2) was seen to play a major role in the handover process as supported by a study that says more experienced healthcare workers were reported to be more likely to double-check received information and generally relatively healthcare providers with less experience are unlikely to double-check that the receiver interprets the information correctly. The more experience a health care provider has, the more likely they are to be accurate and responsible. During the study, staff gender, age group, cadre, level of education and years of experience in working in the ICU were not statistically significantly associated with handover.

According to the study despite the years of experience having a P-Value of 0.2, it is seen to play a major role in the handover process as supported by a study that says more experienced healthcare workers were reported to be more likely to double-check received information while relatively health care providers with less experience are unlikely to double-check that the receiver interprets the information correctly. Another study concurs with this and states that junior healthcare workers are likely to feel fear from lack of knowledge about a new situation that may lead them to miss important information which can lead to overwork or affect patient condition(Mcmurray, *et al.,* 2010). Variation in experience levels between health care providers might lead to weak consequences as well, such as not understanding, or difficulty in delivering patient information. Currently, many hospitals and healthcare facilities across the world recommend the use of ISBAR during handovers. ISBAR is a communication tool that was developed to provide a guideline for healthcare professionals to communicate with each other during consultations and transfer of care for patients (Munro, 2016).

Conclusion

The study aimed to identify healthcare provider factors that influenced effective clinical handover. This study found no statistically significant relationship between these factors and effective clinical handover. Despite this finding, being a nurse, having seven or fewer years of experience, having a higher diploma, and receiving formal clinical handover training was beneficial for effective clinical handover.

There needs to be standard guidelines or tools to support clinical handover in health facilities. Only one health facility used the Situation Background Analysis and Recommendation (SBAR) Tool. The study concludes that the

lack of a standardized tool for clinical handover across the board, which allows the process to be done differently across health facilities and cadres, is a potential risk to effective handover and a potential roadblock to effective optimum patient care.

Recommendation

The study recommends that more rigorous studies with large sample sizes be done to investigate the possible benefits of the nursing cadre, formal clinical handover training, higher diploma training, and healthcare workers with less than or equal to seven years of experience for effective clinical handover. These additional studies may point to aspects that health policymakers can use to strengthen the clinical handover process in the ICU. In addition to further investigating these factors, health policymakers should consider developing standard clinical handover tools or guidelines to enhance the quality of handover and thus improve continuity of care. Supporting healthcare workers with these tools will also allow for frequent reference, learning, and strengthening of the process.

Limitation

The sample size was small and therefore could not be generalized. To address this limitation the researcher adopted the census method.

Acknowledgement

I wish to sincerely thank my supervisors Prof. John Okoth and Dr. Damaris Ochanda for guiding me through my research by offering invaluable suggestions and support. The MTRH, Mediheal Hospital, JOOTRH, Aga Khan and St. Lukes's professionals working in this hospital for their assistance and cooperation during the research project.

My special appreciation to my employer Moi Teaching and referral hospital for permitting me to study. My appreciation to my classmates who encouraged and supported me through this whole journey.

Finally, my special thanks to my family members for their support encouragement and patience during the study period. Special thanks to my husband for his financial support. There are many others I would have wished to mention by name who contributed in one way or another towards the accomplishment of this project. Please accept my gratitude.

References

Horwitz, L. I., Meredith, T., Schuur, J. D., Shah, N. R., Kulkarni, R. G., & Jenq, G. Y. (2009). Dropping the baton: a qualitative analysis of failures during the transition from emergency department to inpatient care. *Annals of emergency medicine*, *53*(6), 701-710.

McFetridge, B., Gillespie, M., Goode, D., & Melby, V. (2007). An exploration of the handover process of critically ill patients between nursing staff from the emergency department and the intensive care unit. *Nursing in critical care*, *12*(6), 261-269.

Manser, T., Foster, S., Gisin, S., Jaeckel, D., & Ummenhofer, W. (2010). Assessing the quality of patient handoffs at care transitions. *Quality and Safety in Health Care*, *19*(6), e44-e44.

Manser, T., Foster, S., Flin, R., & Patey, R. (2013). Team communication during patient handover from the operating room: more than facts and figures. *Human factors*, *55*(1), 138-156.

Abraham, J., Kannampallil, T., Brenner, C., Lopez, K. D., Almoosa, K. F., Patel, B., & Patel, V. L. (2016). Characterizing the structure and content of nurse handoffs: a sequential conversational analysis approach. *Journal of biomedical informatics*, *59*, 76-88.

Mukhopadhyay, A., Leong, B. S., Lua, A., Aroos, R., Wong, J. J., Koh, N., ... & Kowitlawakul, Y. (2015). Differences in the handover process and perception between nurses and residents in a critical care setting. *Journal of clinical nursing*, *24*(5-6), 778-785.

Hilligoss, B., & Cohen, M. D. (2013). The

unappreciated challenges of between-unit handoffs: negotiating and coordinating across boundaries. *Annals of emergency medicine*, *61*(2), 155-160.

Rabol, L. I., Andersen, M. L., Østergaard, D., Bjørn, B., Lilja, B., & Mogensen, T. (2011). Descriptions of verbal communication errors between staff. An analysis of 84 root cause analysis reports from Danish hospitals. *BMJ quality & safety*, *20*(3), 268-274.

World Health Organization. (2007). Communication during patient Hand-Overs. who collaborating centres for patient safety solutions. *WHO Library. Geneva. Switzerland*.

Abraham, J., & Reddy, M. C. (2010). Challenges to inter-departmental coordination of patient transfers: a workflow perspective. *International Journal of medical informatics*, *79*(2), 112-122.

Sujan, M. A., Chessum, P., Rudd, M., Fitton, L., Inada-Kim, M., Cooke, M. W., & Spurgeon, P. (2015). Managing competing organizational priorities in clinical handover across organizational boundaries. *Journal of health services research & policy*, *20*(1_suppl), 17-25.

Makkin, A. W., Stein, C. O. A., & Bruijns, S. R. (2021). The process of handover in the busy emergency centre: A pre-hospital perspective from Johannesburg, South Africa. *Australasian Journal of Paramedicine*, *18*.

Toccafondi, G., Albolino, S., Tartaglia, R., Guidi, S., Molisso, A., Venneri, F., ... & Barach, P. (2012). The collaborative communication model for patient handover at the interface between high-acuity and low-acuity care. *BMJ quality & safety*, *21*(Suppl 1), i58-i66.

Wang, X., & Cheng, Z. (2020). Cross-sectional studies: strengths, weaknesses, and recommendations. Chest, 158(1), S65-S71.

McMurray, A., Chaboyer, W., Wallis, M., &Fetherston, C. (2010). Implementing bedside handover: strategies for change management. *Journal of Clinical Health Professionals*, *19*, 2580- 2589.

Munro, D. 2016. Clinical handover: Clear communication protects all. *World of Irish Nursing & Midwifery, 23*(10), 58–59.