Short Communication

Interventional Cardiology

Bridging knowledge and practice: Lessons from Ghana on advanced life support among nurses

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Description

The ability of nurses to perform effective Cardiopulmonary Resuscitation (CPR) and follow Advanced Life Support (ALS) protocols is critical to patient survival during in-hospital cardiac arrest. Yet, in many Low- and Middle-Income Countries (LMICs), including Ghana, gaps persist between ALS guideline knowledge and actual clinical practice. This commentary reflects on key findings from the study "Nurses' knowledge and self-reported adherence to advanced life support guidelines during in-hospital cardiac arrest in a referral hospital in Ghana" [1]. The discussion explores implications for nursing education, continuous professional development, and health-system preparedness in resource- limited settings.

Cardiac arrest remains a global public-health challenge, claiming an estimated two million lives annually [2]. Although early recognition, high- quality chest compressions, and timely defibrillation improve survival, studies show that healthcare workers in sub-Saharan Africa often lack adequate resuscitation training and confidence [3]. In Ghana, [4] reported that nearly half of healthcare professionals possessed inadequate CPR knowledge, highlighting the need for structured ALS training suited to local health-system realities.

The Ghanaian study adopted a descriptive cross-sectional design involving 138 registered nurses at the New Tafo Government Hospital, a municipal referral facility serving over 90 000 residents. Using a structured questionnaire informed by the 2020 American Heart Association (AHA) guidelines [5], the research examined nurses' knowledge, self-reported adherence, and confidence in managing cardiac arrests.

Results revealed that only 39.9% of respondents demonstrated good knowledge of ALS guidelines, and just 34.8% showed high adherence to recommended practices. Alarmingly,

65.2 % had never performed CPR in a clinical setting, and only 22.5 % had participated in a simulation exercise. These data expose a critical gap between theoretical knowledge and real-world readiness.

Importantly, nurses who had undergone ALS or CPR-related training within the preceding 6-12 months were significantly more likely to exhibit higher knowledge scores than those trained earlier (AOR=2.76, p=0.023). This aligns with evidence that resuscitation skills decay rapidly within a year unless refreshed through simulation-based practice [6,7]. Years of clinical experience (especially 6-10 years) also correlated positively with knowledge levels, suggesting that mid-career nurses may retain and apply guideline content more effectively [8].

Beyond technical competence, the study assessed nurses' confidence in responding to cardiac arrest. Nearly half rated themselves at 5 out of 10, with only 5.8% reporting very

high confidence. Confidence and performance are intertwined: Professionals who lack assurance may delay CPR initiation, reducing patient survival odds [9]. This psychological dimension reinforces the importance of realistic simulation and team-based drills in fostering both competence and self-efficacy.

The low adherence rates observed in Ghana mirror patterns across other African contexts [10,11]. Found that only a minority of nurses in Botswana demonstrated satisfactory CPR knowledge and technique. Likewise, [12] in Ethiopia reported that fewer than 40 % of participants achieved good knowledge levels. Collectively, these findings point to systemic issues: Inadequate refresher courses, lack of simulation infrastructure, and limited monitoring of resuscitation quality during real events.

Bridging the knowledge-practice gap requires multi-level interventions. At the institutional level, hospitals should institutionalize mandatory annual ALS refresher training integrated with low-cost simulation and debriefing sessions. Such programs can be implemented even in resource-constrained environments using locally improvised mannequins and peer-facilitated sessions. At the policy level, the Ghana College of Nurses and Midwives and Nursing and Midwifery Council could include periodic ALS competency assessment as part of license renewal, ensuring sustained competence across facilities.

Furthermore, nursing curricula at diploma and bachelor levels should incorporate experiential learning and scenario-based simulations that replicate in-hospital cardiac emergencies. Embedding these experiences early in professional formation can help normalize evidence- based resuscitation practices. Partnerships with international organizations or local emergency-care networks could also provide mentorship and access to standardized training modules.

From a systems perspective, promoting adherence to ALS guidelines demands more than training alone. It requires adequate equipment, protocol availability, and team coordination mechanisms. As highlighted by adherence to ACLS protocols directly influences survival outcomes. Therefore, institutions should prioritize continuous audit of code-blue responses, use of checklists, and feedback loops to identify gaps in real time.

Finally, cultural and contextual considerations must not be overlooked. In many African hospitals, hierarchical team structures may inhibit junior nurses from initiating resuscitation without explicit instruction from a physician. Empowering nurses through clear institutional policies and inter-professional teamwork training can counteract such delays and foster shared accountability during emergencies.

Conclusion

This article underscores a persistent gap between ALS knowledge and practice among Ghanaian nurses, a microcosm of challenges facing similar LMIC settings. To strengthen the chain of survival, hospitals must implement regular, simulation-based training, promote interdisciplinary collaboration, and institutionalize guideline adherence monitoring. Bridging this gap will not only enhance nurses' confidence and competence but also improve patient outcomes during cardiac emergencies. Ultimately, sustained investment in ALS education is an investment in saving lives.

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