Factors Associated with Integration of Non-clinicians in the Emergency Obstetric Response System of Bungoma County Referral Hospital, Kenya

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Abstract- *The inclusion of non-clinicians in obstetric emergencies is significant due to its multifaceted advantages including prompt intervention thus addressing urgent situations and leveraging community insights for culturally adept responses. This collaborative effort relieves clinical personnel for effective practice, prioritizes patient preferences, and enhances maternal and infant outcomes, exemplifying a holistic approach to emergency care. The study focused on non-clinicians' role in obstetric emergencies at Bungoma County Referral Hospital. Employing a cross-sectional survey, it quantitatively and qualitatively examined variables, sampling 93 non-clinicians. Data collection conducted using questionnaires and interviews hence yielding insights. Descriptive and inferential statistics aided analysis. Adherence to ethics and Covid-19 protocols was stringent. Triangulation and comprehensiveness were strengths, offering baseline data for policymaking. However, limitations included limited generalizability, dearth literature, and potential bias. Control measures were enacted for rigour. Results showed a 100% response rate, ensuring data sufficiency. Majority of the 93 non-clinicians were female (51.6%), 63.4% were aged 31-45 years, 83.9% married and 45.2% had college-level education. Sensitization training strongly influenced integration (84.4% were in agreement), while length of stay impacted performance (47.3% in agreement). Non-clinicians agreed (44.1%) they have a role in emergency response. Regression analysis indicated capacity (R2 = 0.158) and health system factors (R2 = 0.226) influenced quality. Health system had a 47.5% impact. Moderated multiple regression explored additional influences on integration. Incorporating non-clinicians into obstetric emergencies holds vital benefits, offering prompt and culturally attuned responses. This collaborative approach alleviates clinical burden, prioritizes patient preferences, and improves maternal and infant outcomes. It also underscores the critical role of capacity and health system factors, guiding the integration of non-clinicians for effective obstetric emergency response.*

Indexed Terms- Non-clinician, Obstetrics emergency, Response, Integration.

I. INTRODUCTION

The inclusion of non-clinical personnel in obstetric emergency response systems has gained increasing recognition in recent healthcare discussions. Traditionally, emergency care has primarily focused on the roles of clinical staff, such as doctors and nurses, in responding to critical situations (Nugus et al., 2010). However, a growing body of research and practical experiences has shed light on the multifaceted advantages that can arise from integrating non-clinicians into these emergency care frameworks (Ayatollahi, Bath & Goodacre, 2013; Witgert, Kinsler, Dolatshahi & Hess, 2014). This paradigm shift acknowledges the diverse skills and contributions that individuals from non-clinical backgrounds can bring to emergency response scenarios, enriching the overall effectiveness of healthcare systems (Bleetman, Sanusi, Dale & Brace, 2012).

Collaboration between clinical and non-clinical staff in obstetric emergencies offers several compelling advantages. One of the most significant benefits is the potential for prompt intervention in urgent situations (Siassakos, Draycott, Montague & Harris,

2009). Non-clinicians, such as ambulance drivers and administrative personnel, can play pivotal roles in swiftly transporting patients, managing administrative tasks, and ensuring that resources are readily available. This not only expedites the response time but also alleviates the burden on clinical personnel, allowing them to focus more intently on medical care (Shehata, Zhao & Gill, 2020). Moreover, the inclusion of non-clinicians leverages their deep community insights, enabling culturally sensitive and adept responses to emergency situations (Sanderson & Gruen, 2006). This approach acknowledges the importance of community engagement and respects local norms and practices, thereby enhancing patient trust and overall satisfaction (Allen, Haley, Aarons & Lawrence, 2021).

Despite the evident advantages of involving non-clinicians in obstetric emergency care, a significant gap remains in the actual implementation of such collaboration. While research and anecdotal evidence underscore the importance of their contributions (Carney, 2004), the integration of non-clinical personnel into emergency response systems has not been widely adopted in many healthcare settings. This gap between knowledge and practice highlights the need for systematic changes and policy initiatives to support the meaningful inclusion of non-clinicians. Such measures may involve restructuring leadership frameworks, providing relevant training to non-clinical staff, and ensuring that their roles are clearly defined and integrated into emergency care protocols (Ferlie & Shortell, 2001). Bridging this gap holds the potential to revolutionize emergency care delivery, offering a more comprehensive and patient-centered approach that addresses the holistic needs of individuals during critical medical situations.

II.   STUDY DESIGN, SETTING, AND PERIOD

This study was conducted at Bungoma County Referral Hospital (BCRH), a level five public health facility in Bungoma County, Kenya. The hospital has a bed capacity of 223 and a workforce of about 800 health personnel, including both clinical and non-clinical staff. The study focused on the maternal and newborn departments of the hospital, specifically the Antenatal Clinic (ANC) department, Maternity ward, postnatal ward, and the gynaecological ward.

The study employed a cross-sectional descriptive survey design, aiming to describe, explain, and validate various aspects of the phenomenon under investigation. The research design aimed to capture the prevailing conditions at the time without manipulation of variables. The study investigated independent variables related to the specific objectives, dependent variable included expected outcome which is integration of non-clinicians. The moderating variables involved interventions such as assessments, focused group discussions, and sensitization trainings. Mediating variables like governance, policy guidelines, and government regulations were also considered. The study period was from January to May 2023.

III.   STUDY POPULATION

The study encompassed non-clinical personnel employed in specified departments at BCRH from January to May 2023, including administrators, accountants, registration clerks, gatekeepers, drivers, procurement officers, and cleaners. The study extended to non-clinical staff in the ANC, Maternity, and Newborn departments from January to May 2023, who voluntarily participated. Additionally, healthcare professionals within BCRH during the study period were considered, along with non-clinicians in other hospital departments not associated with Maternal and Newborn units.

IV.   SAMPLE SIZE DETERMINATION AND SAMPLING PROCEDURE

For the quantitative study, the estimated population of non-clinicians was 176. The sample size determination followed Fischer's et al. (1998) formula, where $n = z^2(pq)/e^2$. Here, z represents the standard error associated with a 95% confidence level (1.96), p is the proportion of the population with the desired characteristics (0.5), q is the proportion without the desired characteristics (1-0.44=0.56), and e is the acceptable sample error of 5%. The calculation resulted in a sample size of 93 non-clinicians.

Convenience sampling was employed for participant selection in this study. The sample consisted of 93 non-clinicians who were on duty during data collection. Those non-clinician staff members working in BCRH's ANC, Maternity, and Newborn departments during June to August 2022, and those who voluntarily consented to participate, were included. Additionally, healthcare professionals working at BCRH during the study period were considered, as well as non-clinicians from other departments not affiliated with Maternal and Newborn units.

V.   DATA COLLECTION

Quantitative data collection involved interviewing 93 non-clinicians using a semi-structured open-ended questionnaire, administered with the assistance of research assistants. The questionnaire aimed to identify knowledge, attitude, and practice gaps related to obstetric emergencies, as well as resources and capacity for integrating non-clinicians into the hospital's obstetric emergency response system. The questions were organized into thematic groups to enhance clarity and understanding.

Qualitative data collection encompassed key informant interviews (KII) and focused group discussions (FGD). KII targeted hospital managers, policy makers, and non-clinicians involved in the study. FGDs were employed to validate structured interview outcomes and address nuanced questions. Participants included non-clinicians who hadn't participated in structured interviews, emergency obstetric survivors, and their caregivers.

Conducted between January and May 2023, the study utilized purposive sample selection, with verbal permission from relevant hospital authorities. Interviews were conducted in English and/or Kiswahili by trained research assistants using an interview guide. Consent was obtained, and interviews were audio-recorded and later transcribed for content analysis. The study employed five research assistants and two guides who were trained before commencement of study to facilitate data collection, ensuring independence between roles.

VI.   STUDY VARIABLES

The study encompassed independent variables addressing knowledge, attitude, practice gaps of Non-Clinicians on Obstetric Emergencies, health system factors facilitating or hindering integration. Dependent variables included outcomes like integration of Non-Clinicians. Moderating variables included interventions like assessments, focused group discussions, and sensitization. Mediating variables encompassed governance, policy guidelines, and government regulations related to Non-Clinicians.

VII.   STATISTICAL ANALYSIS

Quantitative data underwent secure storage, coding, and access limited to research purposes. Qualitative data involved recording, transcription, translation, coding, and theme identification. After achieving saturation, qualitative data was checked and cleaned. Descriptive and inferential statistical analyses were conducted using SPSS version 22.0 on the cleaned and entered data stored in an Excel database.

VIII.   ETHICAL ISSUES AND APPROVAL

Ethical approval was acquired from BCRH Ethical Research Review Board, Kenyatta National Hospital/University of Nairobi's Ethics and Research Committee, and a research permit from the National Commission for Science, Technology and Innovation (NACOSTI). Permission was also granted by Bungoma County Hospital, with written informed consent obtained from all participants prior to interviews. Data collection questionnaires used codes , ensuring no personal identifiers were analysed or disclosed, and ethical considerations like informed consent, confidentiality, and voluntary participation were strictly observed.

IX.   RELIABILITY AND VALIDITY OF THE STUDY

The validity of variables in the study was assessed using Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity. KMO values exceeded 0.7, indicating data appropriateness. Bartlett's test was statistically significant, confirming non-correlation of variables

used to measure knowledge gaps. A pilot study of 9 questionnaires (10% of the sample) ensured reliability testing. Internal consistency was evaluated using Cronbach's alpha coefficient, with values above 0.7 indicating acceptable consistency, though it can be sensitive to item count. This study's Cronbach's alpha value, exceeding 0.7, implied adequate internal consistency.

X. SOCIO-DEMOGRAPHIC CHARACTERISTICS OF STUDY POPULATION

The demographic profile of non-clinicians participating in the study highlighted several key characteristics. The majority of the 93 respondents (63.4%), fell within the age range of 31 to 45 years, suggesting a cohort with sufficient life experience to contribute valuable insights into factors influencing the enhancement of obstetric emergency response through non-clinician integration. A significant proportion of participants (45.2%) had attained a college-level education, indicating a well-educated group capable of offering informed opinions on the matter. Gender distribution revealed that 51.6% were female, and a balanced representation of both genders suggested a diverse pool of perspectives. Furthermore, marital status played a role in the composition of the respondents, with a considerable majority (83.9%) being married. This could hold relevance due to the likelihood that married non-clinicians have personal experiences with the obstetric process, potentially influencing their understanding of factors that contribute to effective obstetric emergency response. The distribution across various non-clinical roles illustrated the scope of the study, with the highest proportion (48.4%) being cleaners, followed by gatekeepers and clerks at 15% each. Notably, the inclusion of different non-clinician categories aimed to capture a comprehensive view of the factors impacting obstetric emergency response. Considering employment terms, 65.6% of non-clinicians were on temporary contracts, while 34.4% held permanent positions. This mixture of employment statuses provided a diverse range of perspectives, ensuring that insights from both temporary and permanent staff were considered. Additionally, a substantial percentage (47.3%) of respondents possessed over a year of experience working in Bungoma Referral Hospital, indicating a seasoned cohort capable of providing reliable and well-informed opinions on the elements contributing to the strengthening of obstetric emergency response. Findings on the demographics of the study have been summarised in Table 1 below.

Table 1. Demographics of the study (N=93)

Variable	Categories	Frequency	Percentage
Gender	Male	45	48.4
	Female	48	51.6
Marital Status	Single	15	16.1
	Married	78	83.9
Age	15-30	34	36.6
	31-45	59	63.4
	46-60	0	0
Education	Primary	10	10.8
	Secondary	31	33.3
	Colleges	42	45.2
	University	10	10.8
Type of Non-clinician	Administrator	1	1.07

	Human resource	2	2.2
	Supplies	4	4.3
	Driver	7	7.53
	Clerk	14	15.05
	Gate Keeper	14	15.05
	Cleaners	45	48.4
	Record officer	4	4.3
	Medical engineers	2	2.2
Department	Antenatal Clinic	17	18.3
	Maternity ward	3	3.2
	Post Natal ward	7	7.5
	Theatre	10	10.8
	Administration	9	9.7
	Female ward	2	2.2
	Supplies	1	1.1
	Security	8	8.6
	All the above	36	38.7
Type of Employment	Temporal	61	65.6
	Permanent	32	34.4
Experience	1 -3months	19	20.4
	4 – 6months	30	32.3
	Above 1 year	44	47.3

XI. SATISFACTION RATING ON EMERGENCY OBSTETRIC RESPONSE

Descriptive summary analysis was employed to assess the levels of satisfaction with Obstetric Referral at Bungoma County Referral Hospital. Participants' responses were measured on a Likert scale ranging from 1 to 5, with values representing Strongly Disagree (SD)=1, Disagree (D)=2, Neutral (N)=3, Agree (A)=4, and Strongly Agree (SA)=5. The results were presented in Table 2 below, depicting participants' ratings for specific statements related to emergency obstetric response.

The findings revealed that sensitization training for non-clinicians significantly influenced their integration into the obstetric emergency response system, as over 65% of respondents strongly agreed with this statement. This particular statement obtained the highest mean rating of 4.45, a mode of 5, and a standard deviation of 0.973, signifying strong agreement among participants. Similarly, 47.3% of participants strongly agreed that the length of stay in the hospital affected non-clinicians' performance in the obstetric emergency response system. This statement garnered the second highest mean rating of 4.19, with a mode of 5 and a standard deviation of 0.992.

In contrast, the statement "Non-clinicians have a role to play in Obstetric emergency response system in BCRH" received the lowest satisfaction rate, with

44.1% of respondents strongly agreeing. This statement held the lowest overall mean rating of 4.10, a mode of 5, and a higher standard deviation of 1.189. Overall, the emergency obstetric response received an average rating of 4.22, a mode of 5, and a standard deviation of 0.932, indicating that 84.4% of respondents agreed that non-clinicians significantly contribute to obstetric emergency response in Bungoma County Referral Hospital.

Table 2: Rating on emergency obstetric response at BCRH

Statements	SD	D	N	A	SA	Mean	Mode	Std. Dev
Non-clinicians have a role to play in Obstetric emergency response system in BCRH	9 (9.7%)	2 (2.2%)	1 (1.1%)	40 (43%)	41 (44.1%)	4.1	5	1.19
Sensitization training to Non- clinicians facilitates their integration to obstetric emergency response system in BCRH	3 (3.2%)	4 (4.3%)	2 (2.2%)	23 (24.7%)	61 (65.6%)	4.45	5	0.97
The length of stay in the hospital influences Non-Clinicians performance in the obstetric emergence response system.	2 (2.2%)	6 (6.5%)	8 (8.6%)	33 (35.5%)	44 (47.3%)	4.19	5	0.99
A trained Non- clinicians, have a better understanding in participating in the obstetric emergency response system	5 (5.4%)	8 (8.6%)	6 6.5%	26 (28.0%)	48 (51.6%)	4.12	5	1.19
Average rating						4.22	5	0.93

XII. GAPS IN THE KNOWLEDGE AND PRACTICE OF THE NON-CLINICIANS

A marginal effect model was employed to assess the gaps in knowledge and practice among non-clinicians regarding obstetric emergency response at Bungoma County Referral Hospital (BCRH). The analysis revealed several significant variables. "Source of information," representing where non-clinicians acquired information on managing obstetric emergencies, had a coefficient of 0.412 and a marginal effect of 0.184, with a statistically significant p-value of 0.05. This implied that a unit increase in information acquisition increased the probability of knowledgeable non-clinicians attending to obstetric emergencies by 18.4%.

The "Role of non-clinician" variable had a coefficient of 0.009 and a marginal effect of 0.004, which was statistically insignificant at a p-value of 0.05. The variable "Sensitization training" had a coefficient of 0.381 and a marginal effect of 0.150, statistically significant at a p-value of 0.05. "Length of stay in the hospital" had a coefficient of 0.062 and a marginal effect of 0.025, with a significant p-value of 0.05.

The most influential variable was "A trained non-clinician," with a coefficient of 0.856 and a marginal effect of 0.470, significantly associated with attending to obstetric emergencies (p-value: 0.05). Of the five variables studied (Table 3, below), only "Role of non-clinician" was not statistically significant, leading to the rejection of the null hypothesis. This study concluded that gaps existed in the knowledge and practice of non-clinicians regarding obstetric emergency response at BCRH.

Table 3: Marginal effect output on knowledge gaps

Variable	Estimate	Marginal effect (dy/dx)	P-value
Source of information	0.412	0.184	0.000*
Role of non-clinician	0.009	0.004	0.141
Sensitization training	0.381	0.150	0.007*
Length of stay in hospital	0.062	0.025	0.043*
A trained non-clinician	0.856	0.470	0.000*

Note: Number of observation= 93, LR chi2(5)=62, Prob>chi2=0.000, Pseudo R^2= 0.824, Log likelihood =-345.37, * indicate statistical significance at 5% confidence level.

XIII. CAPACITY NEEDED TO INTEGRATE THE NON-CLINICIAN

Linear regression was employed to assess the capacities necessary to facilitate the integration of non-clinician staff into obstetric emergency response at BCRH. The model summary indicated an R-squared (R2) value of 0.158, signifying that the capacity needed explained approximately 15.8% of the variability in the quality of emergency obstetric response at BCRH. The ANOVA test was statistically significant, with an F-value of 10.465 and a p-value of 0.001, indicating that the linear regression model was fitting and appropriate for determining the association between capacity needs and the quality of emergency obstetric response.

The regression coefficient for "Capacity Needed" was 0.297, with a standardized coefficient of 0.241, and a statistically significant t-value of 3.235 at a 0.05 alpha level as shown in Table 4, below. This implied that a unit change in capacity needed led to a 24.1% increase in the quality of emergency obstetric response at BCRH. The constant coefficient was 3.031, signifying other influencing factors beyond capacity. The null hypothesis was rejected, implying that capacities were indeed required to support the integration of non-clinician staff in obstetric emergency response at BCRH. The study concluded that certain capacities were necessary for this integration process. To predict the quality of emergency obstetric response at BCRH, the linear regression model was as follows: Quality of emergency obstetric response = 3.031 + 0.241(capacity needed).

Table 4: Capacity needed to integrate non-clinicians

Variable	Estimate	t	Sig.
(Constant)		7.545	.000
Capacity Needed	.241	3.235	.001

XIV. HEALTH SYSTEM FACTORS INFLUENCING INTEGRATION OF NON-CLINICIANS

Simple linear regression was employed to examine the third research hypothesis, which postulated that health system factors do not influence the integration of non-clinicians in obstetric emergency response at BCRH.

The model summary yielded an R-squared (R2) value of 0.226, indicating that health system factors accounted for approximately 22.6% of the variability in the quality of emergency obstetric response at BCRH. The ANOVA test exhibited significant results, with an F-value of 51.099 and a p-value of 0.00, demonstrating the suitability of the linear regression model in evaluating the linear association

between health system factors and the quality of emergency obstetric response at BCRH.

Furthermore, and as presented in Table 5 below, the regression coefficient for "Health System Factors" was 0.552, accompanied by a standardized coefficient Beta of 0.475, and a statistically significant t-value of 7.148 at a 0.05 alpha level. This coefficient indicated that a unit change in health system factors led to a 47.5% increase in the quality of emergency obstetric response at BCRH. The constant coefficient was 1.942, signifying the presence of other factors beyond health system factors influencing the quality of emergency obstetric response.

The null hypothesis was rejected, suggesting that health system factors indeed play a role in influencing the integration of non-clinicians in obstetric emergency response at BCRH. The study concluded that health system factors significantly affect the integration of non-clinicians in obstetric emergency response at BCRH. To predict the quality of emergency obstetric response at BCRH, the study employed the following linear regression model: Quality of emergency obstetric response = 1.942 + 0.475(Health System).

Table 5: Health system as a factor influencing integration of non-clinicians

Variable	Estimate	t	Sig.
(Constant)		5.8	<0.0001
Health system factors	0.48	7.15	<0.0001

XV. CORRELATION FACTORS ATTRIBUTABLE TO INTEGRATING NON-CLINICIANS

Multiple linear regressions were employed to assess factors influencing the integration of non-clinicians in the obstetric emergency response system at BCRH in Kenya. Model 1 demonstrated a change in R-squared (R2) of 0.217, signifying that 21.7% of the variance in the integration process could be attributed to capacity needed and health systems. The correlation coefficient (R) for Model 1 was 0.462, indicating a moderate positive correlation between these factors that influence the integration process of non-clinicians into the Emergency Obstetric Response.

Model 1's ANOVA results displayed a significant F-value of 10.668 and a p-value of 0.00, indicating a noteworthy association between the factors that influence the integration process of the non-clinicians into the Emergency Obstetric Response. This led to the conclusion that both capacities needed and health systems indeed impact the integration process. The predictive model derived from this was: Integration of the non-clinicians in the Emergency Obstetric Response = 1.485 + 0.079(Capacity Needed) + 0.380(Health System).

The findings, presented in Table 6, introduced the moderating effects of the length of time non-clinicians worked in BCRH and their type of employment. It revealed an R2 change of 0.219, signifying that 21.9% of the variation in the integration process was accounted for by capacity needed and health systems, moderated by length of time and type of employment. The correlation coefficient (R) for Model 2 was 0.466.

Model 2's ANOVA showed significant results with an F-value of 14.729 and a p-value of 0.00, affirming a substantial relationship among capacity needed, health systems, and the integration of non-clinicians into the Response system, moderated by the length of time and type of employment. The predictive model derived from this was: Integration of the non-clinicians into the Emergency Obstetric Response system = 1.849 + 0.080(Capacity Needed) + 0.442(Health System) + 0.109(Length of Time) + 0.364(Type of Employment).

Table 6: Association between the factors that influence the integration process of the non-clinicians into the emergency obstetric response system

Variable	Estimate	t-value	Significance
Health System	0.44	3.71	0
Length of Time	0.11	2.42	0.01
Type of Employment	0.36	1.98	0.04

In conclusion, incorporating the moderating variables led to a slight shift in correlation coefficients and R2 values. The R value remained at 0.466, while R2 increased from 0.214 to 0.219. The coefficients for capacity needed increased from 0.079 to 0.081, and health system coefficients increased from 0.380 to 0.442. This underscored the significance of the moderating variables on the outcome.

The study inferred that the integration of non-clinicians in obstetric emergency response was influenced by capacity needed and health systems, with the moderating effects of length of time worked and type of employment.

XVI. FOCUS GROUPS

The focus group discussion revealed key insights into participants' views on obstetric emergency response at BCRH. Dissatisfaction with response services was evident in participants' ratings, with delays and administrative hurdles causing frustration. The discussion emphasized the pivotal role of non-clinicians, particularly ambulance drivers, in swift patient transportation when immediate doctor availability is limited. As respondent 1 puts it; "Our ambulance drivers are the backbone for swift patient transportation, especially when doctors might not be available immediately. Their role is crucial in saving lives"

Participants suggested training non-clinicians to improve their response capabilities, highlighting the accessibility and agility they bring to emergency situations. Recommendations included actively recruiting willing non-clinicians for emergency services, recognizing their valuable contributions.

The focus group discussion provided a comprehensive understanding of challenges and opportunities, underlining the need to enhance obstetric emergency care by integrating and empowering non-clinicians in the response system.

XVII. KEY INFORMANT INTERVIEWS

Key informant interviews revealed insights into supporting non-clinician integration for obstetric emergency response at Bungoma County Referral Hospital. Resource availability and basic emergency training were highlighted as essential components. Practical tools like stretchers, wheelchairs, and PPE were deemed crucial for efficient response and safety. Strategies included seeking funds, collaborating with entities like St. John's ambulance, and hiring more non-clinicians for stronger integration.

Participants emphasized the gap in the current healthcare structure and the need for foundational policies to integrate non-clinicians effectively. Non-clinicians' roles in patient movement, cleanliness, and communication were stressed, with recommendations for policy recognition, training, and collaboration.

Non-clinicians are strategically placed across departments for a comprehensive response system. Health Information Systems were discussed for record maintenance, and accessing essential commodities during emergencies was addressed through proactive approaches.

Financing involves collaboration among governmental bodies, programs, NGOs, and FBOs. Non-clinicians are actively engaged in leadership roles during emergencies, and policy guidelines align with national standards. Recommendations encompassed training, political support, orientation, and community communication.

The interviews highlighted the importance of training, resource provisioning, collaboration, and policy alignment to strengthen obstetric emergency response through non-clinician integration at BCRH.

XVIII. DISCUSSION

The demographic characteristics of non-clinician participants in our study align with existing research

trends. This convergence is particularly evident in the age distribution, as observed by Singer et al., (2003) and Dobalian and friends (2020), highlighting the inclusion of experienced individuals capable of offering valuable insights into healthcare systems. Similarly, the prevalence of college-educated participants reinforces the notion that informed perspectives are crucial in discussions on healthcare matters (Lin, Schillinger & Irby, 2015; Xia, Sesto & Zern, 2021). Gender distribution findings, as Aufegger and friends (2020) report, emphasize balanced representation, indicative of diverse viewpoints necessary for comprehensive healthcare analyses. Furthermore, the impact of marital status on understanding healthcare processes underscores the significance of personal experiences in shaping participants' perceptions of effective healthcare response (Lepore et al., 2018).

The evaluation of satisfaction ratings in our study aligns with findings by Vimalananda et al., (2018) and Witgert and friends (2014), emphasizing the pivotal role of sensitization training for successful non-clinician integration. Correspondingly, the significance of the length of stay reaffirms the influence of institutional experience on non-clinician performance in healthcare emergencies (Sanders, 2015; Delaney, 2018). Nevertheless, the variability across satisfaction ratings, as captured by Ngure (2018), underscores the differential importance participants attribute to specific factors, shaping their levels of agreement and contentment. Knowledge gaps in our study stresses the pivotal role of training and information sources in augmenting non-clinician effectiveness during emergencies (Tierney, 2001). Moreover, the association between trained non-clinicians and enhanced emergency response highlights the critical role of structured training programs (Shehata, Zhao & Gill, 2020).

The examination of capacities required for non-clinician integration resonates with findings by Ayatollahi and friends (2013, which elaborates the significance of capacity-building in fortifying healthcare response systems. Likewise, the emphasis on health system factors underscores the integral influence of well-structured health systems on effective emergency response (Smith et al., 2022). The incorporation of moderating variables into our study's linear regression echoes research by Penney & Spector (2005), recognizing the moderating role of employment type and tenure in complex healthcare response dynamics.

Qualitative findings from our study converge with research by Buetow (2016) and Witgert and colleagues (2014), advocating for resource availability, collaboration, and policy recognition to bolster non-clinician integration. This alignment emphasizes the necessity of a comprehensive approach to enhance healthcare systems. The interplay of factors such as resource provisioning, collaboration, and policy alignment, as discussed in our study, and which is a comprehensive perspectives highlighted as reiterating the multifaceted nature of healthcare improvement efforts (Gruen et al., 2008).

CONCLUSION

The integration of non-clinicians in obstetric emergency response at BCRH is a multifaceted endeavour. The alignment of our findings with existing research underscores the significance of factors such as training, resource availability, and collaboration in fostering effective integration. The correlation between participant demographics and satisfaction ratings, as well as the influence of capacities and health system factors, emphasizes the interplay of various components in shaping healthcare response. These insights collectively provide a roadmap for healthcare administrators and policymakers to strengthen emergency response systems by recognizing the vital role of non-clinician integration and implementing targeted strategies for enhancement.

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