

Psychosocial Occupational Risk Factors amongst Nurses Working at the Maternity Units in Mombasa County

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ABSTRACT

The study was retrospective and cross-sectional study where hospital records were accessed to establish patient-nurse ratio in relation to deliveries conducted monthly between 2011 and 2015 to establish staff workload. 167 nurses were engaged with the aim of determining psychosocial risk factors, prevalence and effects on maternal care outcomes at selected level 4 and 5 private and government health facilities in Mombasa County through a modified Copenhagen Psychosocial questionnaire. Cluster sampling was used to pick hospitals on the basis of levels; stratified sampling to identify the respondents; and systematic sampling to determine every Kth staff involved in the study. Data analysis was done using SPSS package, whose findings indicate that patient/nurse ratio was higher in Government Hospitals compared to private hospitals accounting for approximately 1:4 and 1:3 respectively. Generally, majority of the respondents had a positive perception about their work environment despite 66.9% perceiving to a large extent that their work was emotionally demanding, 80.9% their work exposed them to undue pressure/demands from their patients and relatives and only 58.6% felt somewhat or to a small extent motivated and involved. Due to this perception about current work environment, 70% of the respondents considered looking for work elsewhere with only 22.9% willing to remain working in their respective work places. Further analysis indicated that work environment influenced by 65.8% the decision to change jobs due to lack of motivation and failure to involve them in decision making. This perception, however, differed across private and GoK hospitals, male and female, and across the different age brackets.

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INTRODUCTION

Every day, approximately 830 women die and every minute a woman dies from preventable causes related to pregnancy and childbirth namely postpartum hemorrhage which can kill a healthy woman within hours if she is unattended. Forty-five percent of postpartum deaths occur within the first 24 hours and 66% occur during the first week (Nawal, 2008 and WHO, 2015). 99% of all maternal deaths occur in developing countries Africa having a lifetime risk of 1 in 16 while Western nations have the lowest rates of 1 in 2,800. The global ratio stands at 400 maternal deaths per 100,000 livebirths (WHO, 2015).

Kenya's rates account for 495 maternal deaths per 100,000 live births which have been attributed to "3 delays": delay in deciding to seek care, delay in reaching care in time, and delay in receiving adequate treatment. The focus of this study is on the third delay which occurs at the healthcare facility, where upon arrival women receive inadequate care or inefficient treatment due to fragile health-care facilities with no technology or services necessary to provide critical care to hemorrhaging, infected, or seizing patients. Omissions in treatment, incorrect treatment, and a lack of supplies contribute to maternal mortality as well as psychosocial risk factors at work (aspects of work organization that are of human design and construction) (Nawal, 2008, Dollard *et al.*, 2014, and Susan *et al.*, 2007).

Study Objectives

1. To determine the nurse/patient ratio at delivery room of level 4 and 5 hospitals in Mombasa County
2. To identify psychosocial occupational hazards amongst nurses working at the maternity units of level 4 and 5 hospitals in Mombasa County
3. To establish nurses' perception about their work environment at the maternity units of level 4 and 5 hospitals in Mombasa County.

RELATED LITERATURE

Work Environment

Work environment (Sikorska, 2006) are assumptions about human nature, which ultimately determine how organization members perceive their work, treat their customers and relate to each other which are probably linked to employee morale and performance. Poor organizational climate, work pressure, job insecurity, bullying, violence and work stress in general have been increasingly recognized as threats to workers' psychosocial and physical health and safety, as well to organizational performance and productivity (Pascale, 2012).

Among fulltime employees, excessive workloads are among the most frequently cited occupational stressors that make it difficult for managers to achieve productivity improvements needed to maintain their organization's economic viability, while also maintaining a safe "system of

work” to protect the physical and psychosocial health and safety of their workers. This is because human performance capacities – psychosocial as well as physical – are pegged on limits which when approached or exceeded by the demands of work performance, people are likely to experience high levels of fatigue, and stress is likely to increase (Waldemar, 2006).

Work Climate

Promoting healthcare quality (Widang and Fridlund, 2003) is dependent on how patients are treated by their caregivers. Healthcare givers with strong moral attitude underpinned by values such as respect, honesty, and responsibility; have genuine interest and desire to help patients. Staff behavior that diminishes quality is essentially that which is uncaring, as uncaring behavior from others affects how people feel and whether they feel valued as human beings. Uncaring approach is demonstrated when patients are not viewed as ‘whole human beings’ and caregivers do not recognize their ‘existential suffering’ (Matiti and Baillie, 2011).

Although healthcare personnel are particularly exposed to a variety of risk factors in the workplace, they often are not seen as workers in need of protection and their health and safety are disregarded. With their knowledge of hygienic practices, prevention of injury and disease control, they are somehow considered as being safe from harm, notwithstanding, the enormous and varied potential risk factors in this sector. Physically, healthcare workers are exposed to infectious disease, injuries, musculoskeletal problems, due to bad posture, contact with infectious agents (e.g. bacteria) physical and chemical agents and psychosocial problems caused by stress (Hattingh, 2004). Healthcare workers account for more than 40% of occupationally related adult-onset asthma, tied to exposure to cleaning products (Rosenman, Reilly and Shrill, 2003).

Personal/Individual Attributes

Personal/individual attributes are strongly anchored on mental health conceptualized as: a state of total psychological and social well-being of an individual in a given socio-cultural environment, indicative of positive moods and affects (e.g. pleasure, satisfaction and support) or negative ones (e.g. anxiety, depressive mood and dissatisfaction); a process indicative of coping behavior – example, striving for independence, being autonomous (which are key aspects of mental health) (Boyer, 2008). Mental health may also be associated with personal characteristics like “coping styles” such as competence (including effective coping, environmental mastery and self-efficacy) and aspiration are characteristic of mentally healthy person, who shows interest in the environment, engages in motivational activity and seeks to extend him-or herself in ways that are personally significant. Closely linked to mental health is emotional labor (EL) a key aspect of psychosocial exposure construct that is believed to operate through a scarcity or “Effort Recovery” hypothesis. This is rightly so because mental health is determined by environmental characteristics, both in and out of work station, and individual characteristics. In one theory, this emotional work has been conceptualized as being within the strain-based features of Work-Family Imbalance (Cox *et al.*, 2006).

Emotional labor has also been suggested to be most problematic for those workers in the caring and customer service professions who must constantly control their feelings to present an outward appearance of emotional calm and

acceptance. Moreover, the constructs that operate through scarcity hypothesis may interact with the psychological demands, job control, and social support profile imposed by other work organization stressors and result in increased risk for energy deficit, immune suppression, impaired injury resistance and impaired healing capacity (Teresa *et al.*, 2003).

Staff Perception on Health Care System

Health care management factors can promote task orientation and job performance. Clear job tasks and policies, adequate performance feedback and moderate structure all contribute to satisfaction and effectiveness. In relative absence of these factors (that is ambiguous job roles, sparse feedback, and lax organization policies), staff experience health and morale problems. There is growing recognition of the importance of personal relationships in changing these associations. In general, cohesive coworker and supervisor relationships can amplify the influence of autonomy and task orientation and moderate the problematic consequences of demanding and constrained work settings (Pascale, 2012).

Health care staff frequently cites heavy workload and understaffing as major stressors. Other system stressors arise from scheduling problems, lack of equipment and supplies, and inadequacies in the physical environment, such as too little space and too much noise (Susan *et al.*, 2007). Healthcare organization which is a bureaucratic model characterized by more centralized decision making and formalized jobs associated with lack of support and autonomy, ambiguity about work-related policies, and high work demands and managerial control. This type of model leads to lack of participative leadership which helps to foster a clearer, more tasks focused, and more innovative work climate, consequently resulting to lack of system maintenance dimensions which assess the amount of structure, clarity, and openness to change leading to system stressors related to the management of the work unit or facility and to the resources available to the staff.

MATERIALS AND METHODS

Research Design

This study was retrospective and cross-sectional study which accessed hospital records so as to establish patient-nurse ratio to establish staff workload, as well as response from staff through questionnaires in selected hospitals in Mombasa County. Its aim was to determine psychosocial occupational risk factors of healthcare workers and maternal-care outcomes focus being on quality of healthcare and particularly delivery care within the county. Borrowing from (Kamur, 2008) the researcher analyzed the data and explored the possibility of obtaining relationships between the independent variables: work environment (nurse/patient ratio, work organization and job content, and staff development); social and relational aspects within the workplace (communication, teamwork); perception of healthcare staff/employee towards the employer (involvement in decision making, presence of reward system at workplace), and their influence on the dependent variable (maternal-care outcomes: delivery care - number of maternal deaths and still births) in selected hospitals in Mombasa County.

Population

The study was conducted in selected level 4 and 5 hospitals in Mombasa County with the target being nurses with professional training at hospitals within the county and particularly those involved in maternal deliveries as well as health records officers. Although according to (Linda *et al.*, 2009) healthcare workers are persons including students and

trainees, whose activities involve contact with patients or with blood and other body fluids from patients in a healthcare setting, this study concentrated on employed nurses working in delivery units.

Sampling Frame

Sampling frame was a list of all nurses working in selected hospitals since all are professionally trained to handle deliveries in Mombasa County.

Sample

A sample size of 167 respondents was used to collect data for this study, based on the statistical formula for population of more than 10,000 (Fishers et al., 1998) formula $N = Z^2pq/d^2$

The sample size was arrived at by considering the 43 percent of live births which take place in health facilities available (SPA, 2010) in Kenya.

Hence my $p = 0.43$

Using a level of significance of 95% (alpha level 0.05; two tailed)

My sample size 'n' was:

$$n = 1.96^2(0.43) \times (1-0.43)/0.05^2$$

$$= 377 \text{ nurses}$$

Since the population of nurses working in maternal-care units in level 4 and 5 hospitals is less than 10,000 and on average 300 nurses would be on duty each month, the actual sample then was modified as follows:

$$nf = n/1+(n/N)$$

$$nf = 377/1+(377/300)$$

$$= 167 \text{ nurses}$$

The sample was further distributed as per the ratio of nurse population at selected hospitals in Mombasa County as demonstrated in the table below.

Name of Hospital	Code	Total Number of Nurses per Hospital	Number of Nurses Sampled for the study
Sayyida Fatima	Prv A	22	4
Mewa	Prv B	33	5
Aga Khan	Prv C	146	24
Pandya	Prv D	76	12
Bomu Medical	Prv E	85	14
Alfarooq	Prv F	20	3
Mombasa Hospital	Prv G	170	27
Portrietz	GoV 1	84	14
Coast General	Gov 2	345	56
Jocham	Prv H	53	9
Total		1,034	167

Data Collection Procedure

This study used a modified Copenhagen psychosocial questionnaire. Systematic sampling was employed to arrive at healthcare staff by obtaining a list of all health-care professionals by cadre to determine the K^{th} value so as to pick staffs who were involved in the study. All nurses were given equal chance to be included in the study.

FINDINGS

The overall objective of the study was to determine psychosocial occupational risk factors among nurses working at the maternity units of level 4 and 5 hospitals in Mombasa County. The findings presented in Table 4.3.1 indicates that 62.4% of the respondents were working in private hospitals and 37.6% were from GoK hospitals. Majority of the respondents (68.2%) were female and 78.4% were aged below 40 years.

Table.1. Distribution of Respondents According to the Demographic Characteristics.

		Frequency	Percentage
Hospital Type	Private	98	62.4%
	GoK	59	37.6%
Sex	Female	107	68.2%
	Male	50	31.8%
Age	Under 30 Years	61	38.9%
	30-39 Years	62	39.5%
	40-49 Years	23	14.6%
	50-59 Years	11	7.0%
	60 Years or More	0	0.0%

Nurse/Patient Ratio at Delivery Room of Level 4 and 5 Hospitals in Mombasa County

Figure 1 indicates that at Government Hospitals, the Nurse/Patient ratio per day was higher (approximately 1:4) compared to the ratio at Private Hospitals of approximately 1:3 which is against the WHO recommended ratio of 1 mother 1 nurse. (NB: The ratios are based on the average deliveries made in the two sectors in 2015)

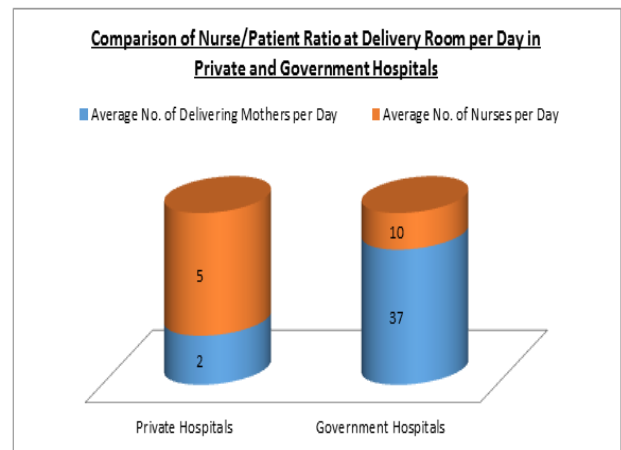


Figure.1. Nurse/Patient Ratio.

Nurses' Perception about their Work Environment

Table 2 below indicate that majority of the respondents had a positive perception about their work environment due to (having large degree of decision making, being part of team, and colleagues willingness to offer an ear to respondent's problems). However, majority (66.9%) of the respondents perceived to a large extent that their work was emotionally demanding and 80.9% felt their work exposes them to undue pressure/demands from their patients and relatives. In addition, it is worth noting that majority of the respondents did not feel highly motivated and involved in their work since 44.6% felt somewhat motivated and involved while 14% felt to a small extent that they were motivated and involved.

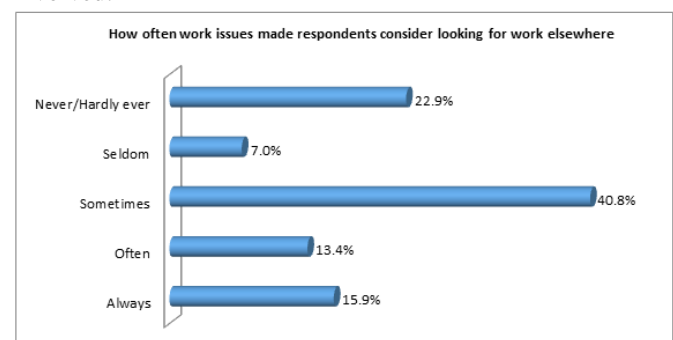


Figure 2. Consideration about Change of Work.

Table 2. Percentage Distribution of Perception about Work Environment.

	Always	Often	Sometimes	Seldom	Never/Hardly ever
Perception on having large degree of decision making concerning work	20.4%	31.2%	48.4%	0.0%	0.0%
Feeling on being part of team at place of work	65.6%	28.7%	5.7%	0.0%	0.0%
Colleagues' willingness to listen to respondents' problems at work	28.0%	39.5%	32.5%	0.0%	0.0%
	To a very large extent	To a large extent	Somewhat	To a small extent	To a very small extent
Work's emotional demand	26.8%	40.1%	10.2%	7.6%	15.3%
Clarity of roles/duties	40.1%	40.8%	13.4%	5.7%	0.0%
Work's exposure to undue pressure/demands from patients and their relatives	49.7%	31.2%	10.8%	5.7%	2.5%
Manager's recognition and appreciation of respondent's work	11.5%	40.8%	33.1%	9.6%	5.1%
Reception of information needed in order to work well	10.8%	59.2%	17.2%	4.5%	8.3%
Feeling on motivation and involvement in work	9.6%	31.8%	44.6%	5.7%	8.3%
Perception about work and opportunity to develop abilities/potentials	14.6%	50.3%	19.1%	7.6%	8.3%
Perception on place of work being of value to respondent	40.8%	43.3%	10.8%	1.9%	3.2%

Despite their positive rating on their perception about their work environment figure 2 below indicates that, about 70% of the respondents considered looking for work elsewhere with 29.3% and 15.9% of the respondents often/always considered to leave. Only 22.9% were willing to remain working in their respective places of work in both government and private hospitals.

On matters distribution about changing work places due to their perception about their work environment the distribution differed across private and GoK hospitals. This is supported by figures in table 3 which indicate 76.3% of respondents from GoK facilities said always, often or sometimes considered changing work places with only 23.7% of them never/hardly considering to change work places. On the other hand, 66.3% of the respondents working in private facilities said always, often or sometimes considered changing work places while 33.6% of them seldom or never/hardly never considered changing work places.

Table 3. Perception about Change of Work Places across Hospital Type.

Frequency of considering looking for work elsewhere	Hospital Type		Total
	Private	GoK	
Always	11.2%	23.7%	15.9%
Often	11.2%	16.9%	13.4%
Sometimes	43.9%	35.6%	40.8%
Seldom	11.2%	0.0%	7.0%
Never/Hardly ever	22.4%	23.7%	22.9%

Hypothesis Test Summary

Null Hypothesis	Test	Sig.	Decision
1 The distribution of How often does the above related issues make you consider looking for work elsewhere? is the same across categories of Hospital Type.	Independent-Samples Mann-Whitney U Test	.050	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Figure 3. Perception about Change of Work Places across Hospital type.

Hypothesis Test Summary

Null Hypothesis	Test	Sig.	Decision
1 The distribution of How often does the above related issues make you consider looking for work elsewhere? is the same across categories of What is your sex?.	Independent-Samples Mann-Whitney U Test	.001	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Figure 4. Perception about Change of Work Places across Gender.

Hypothesis Test Summary

Null Hypothesis	Test	Sig.	Decision
1 The distribution of How often does the above related issues make you consider looking for work elsewhere? is the same across categories of How old are you?.	Independent-Samples Kruskal-Wallis Test	.004	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Figure 5. Perception about Change of Work Places across Age Brackets.

The study further performed the Categorical Regression procedure to determine the amount of variance in the respondents' consideration about changing work places that is explained by their perception about their work environment. The procedure yielded an R² of 0.658, as shown in Table 4 below, indicating that 65.8% of the variance in the respondents' consideration about changing work places is explained by the regression on the optimally transformed predictors (perceptions about their work environment). This therefore means that work environment influences by 65.8% the decision to change jobs for nurses working in maternal units of level 4 and 5 hospitals in Mombasa County.

Table 4. Categorical Regression Procedure of Perceptions about Work Environment on Respondents' Consideration about Changing Work Places.

Model Summary			
Standardized Data	Multiple R	R Square	Adjusted R Square
	0.811	0.658	0.608

DISCUSSION

A total of 157 (94%) respondents out of the proposed 167 respondents from the 10 maternity units of level 4 and 5 hospitals in Mombasa County participated in the study with 62.4% of them working in private hospitals and 37.6% in GoK hospitals. Majority of the respondents (68.2%) were female and 78.4% were aged below 40 years.

The study findings indicate that at Government Hospitals, the Nurse/Patient ratio per day was higher (approximately 1:4) compared to the ratio at Private Hospitals which was approximately 1:3. The findings also indicate that generally, majority of the respondents had a positive perception about their work environment despite 66.9% of them perceiving to a large extent that their work was emotionally demanding, as (Teresia *et al.*, 2003, Cox *et al.*, 2006, Boyer, 2008 and Susan *et al.*, 2007) found out that emotional labour is most problematic for workers in the

caring and customer service professions who must constantly control their feelings to present an outward appearance of emotional calm and acceptance. 80.9% perceived to a large extent that their work exposed them to undue pressure/demands from their patients and relatives and only 58.6% felt somewhat or to a small extent motivated and involved. The study further indicated that based on their perception about their current work environment, about 70% of the respondents considered looking for work elsewhere which is far much higher than 23% (Aiken *et al.*, 2001) and only 22.9% were willing to remain working in their respective places of work. This perception, however, differed across private and GoK hospitals, male and female, and across the different age brackets.

This is supported by 76.3% of respondents from GoK facilities always, often or sometimes considering to change work places with only 23.7% of them never/hardly considering to change work places. On the other hand, 66.3% of the respondents working in private facilities always, often or sometimes considered changing work places while 33.6% of them seldom or never/hardly never considered changing work places. This agrees which (ChildFund, 2014) who states that healthcare workers in Kenya leave Kenya to find posts abroad, leading to a severe shortage of medical workers across the country and is further supported by (WHO, 2015) that Kenya has just one doctor and only 12 nurses/midwives for every 10,000 patients, leading to high cost of healthcare which is a major barrier to accessing quality healthcare, especially for the poor who spend a larger share of their household income to meet their healthcare needs in Kenya. Moreover, the transfer of national revenues to counties has impacted health service delivery, as counties have failed to immediately optimize use of devolved health resources (Kirigia, 2006).

Considering work environment plays a key role on psychosocial occupational risk factors on nurses working in maternal units, the study showed that work environment influences by 65.8% of the nurses consideration of looking for jobs elsewhere due to lack of motivation and failure to involve them in decision making. This agrees with (Aiken *et al.*, 2001, Hofmann *et al.*, 2005, Pascale, 2012) that poor organizational climate, work pressure, job insecurity, bullying, violence and work stress in general have been increasingly recognized as threats to workers' psychosocial and physical health and safety, as well to organizational performance and productivity. In addition, lack of control over work, lack of participation in decision making, poor social support, and ambiguous management and work roles are related to ill health and absenteeism.

In addition, the study sought to determine the psychosocial occupational hazards amongst nurses working at the maternity units of level 4 and 5 hospitals in Mombasa County. The findings indicated that 82% and above of the respondents were not at all exposed to abusive and offensive behaviors at their places of work. However, for those who were exposed to such behaviors 6.4%, 5.1%, 3.4% and 17.9% of the respondents were exposed to undesired sexual attention, threats of violence, physical violence and bullying respectively with Managers/Supervisors being perceived as the major propagators of undesired sexual attention and physical violence, while colleagues were perceived as the major propagators of threats to violence and bullying. The study also established that the distribution of exposure to undesired sexual behavior was the same across private and

GoK hospitals while exposure to other abusive and offensive behaviors was not the same across the two categories of hospitals. The findings further show that exposure to physical violence and bullying had the same distribution across male and female nurses, while exposure to undesired sexual attention and threats of violence differed across gender. Exposure to all the four abusive and offensive behaviors differed across the various age brackets.

On psychosocial health effects amongst nurses working at the maternity units of level 4 and 5 hospitals in Mombasa County. The findings indicate that majority (62%) of the respondents felt a conflict between their work and their private life with 27.4% feeling that their work interferes with their life because of physical fatigue and exhaustion while 20.4% felt that the conflict arose because of time balance. Majority (61.7%) of the respondents reported that they felt physically exhausted a large part of their time which agrees with (Pascale, 2012, Waldemar, 2006 and Birgit *et al.*, 2007) whose work reveals that intensified work performance has led to excessive workloads since managers are more concerned about productivity without maintaining safe "system of work". Despite the work-life conflict majority (86%) of the respondents felt that their health was generally good with majority (92%) saying they were not under any medication. The study also established that the distribution of respondents' perception about their health status across hospital type, gender and age was the same.

The study finally sought to establish whether there was a significant difference in maternal outcomes (live births, maternal deaths and still births) in level 4 and 5 hospitals in Mombasa County before and after the introduction of FMHP and beyond zero campaign. The findings indicate that although the situation in Mombasa County was seen to have worsened after FMHP with an increased percentage of still births being reported, there was no significant statistical difference in the distribution of maternal outcomes across the two periods. In comparison, Kwale and Kilifi Counties reported reduced percentage of maternal deaths and still births but still the findings indicated that there was no significant statistical difference in the distribution of maternal outcomes across the two periods with all the outcomes posting $p > 0.05$. The study therefore, concluded that the distribution of live births, maternal deaths and still births was the same across the two periods, that is, before and after FMHP.

CONCLUSION

In spite of the increased investment in the health sector with the introduction of initiatives like, FMHP and beyond zero campaign, there are still high cases of maternal deaths and still births in health facilities. This could be attributed to several factors including psychosocial occupational risk factors among nurses working at the maternity units that this study sought to determine. Indeed, the findings of the study have clearly indicated that the nurse to patient ratio is still high especially in government hospitals. The study also established that a few nurses are being exposed to abusive and offensive behaviors including undesired sexual attention, threats of violence, physical violence and bullying. In addition, nurses perceive their work to be physically, mentally, emotionally and time demanding with majority feeling that their work exposes them to undue pressure/demands from their patients and relatives. This makes them to consider looking for jobs elsewhere as well as experiencing conflict between their work and private life and

feel lowly motivated to continue working in such environment. The effect then has been healthcare workers leaving Kenya to find jobs abroad (Child Fund, 2014) leading to a severe shortage of medical workers across the country as is the situation in Kenya whereby for every 10,000 patients there is just one doctor and only 12 nurses/midwives (WHO, 2015).

RECOMMENDATIONS

1. There is urgent need for county governments to address psychosocial occupational risk factors experienced by their healthcare workers to avoid mass exodus of the young workforce.

2. There is also need for development of safe “systems of work” before even looking for maximum productivity of county healthcare workforce.

Further research, by the relevant government agencies and other stakeholders in Kenya, is needed to assess the impact of the psychosocial risk factors on maternal-child health care with a view of developing measures and strategies to reduce the risk factors in order to improve the quality of health care provided by the health care givers in our health facilities.

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