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Risk Management and Patients' Vulnerability to Clinical Risks In Uganda: a Case of Kibuli Police Dental Clinic

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Abstract
Health Professionals world over are expected to operate in a sterile environment but this practice is not observed by all health professionals Kibuli Dental Clinic is not exceptional. This study was therefore aimed at establishing the relationship between risk management and patients' vulnerability to clinical risks in Kibuli Police Dental Clinic. The study objectives were: a) To examine the relationship between risk identification and patients' vulnerability to clinical risks. b) To establish the relationship between risk analysis and patients' vulnerability to clinical risks. c) To identify the relationship between risk response planning and patients' vulnerability to clinical risk and d) To explore the relationship between risk monitoring and control and patients' vulnerability to clinical risks in Kibuli Police Dental Clinic. The study employed across sectional descriptive survey design using both qualitative and quantitative approaches. The study population comprised of key informants from Uganda Police Medical Services Nsambya, health workers and patients who were purposively and conveniently selected respectively. Quantitative data was collected using self-administered questionnaires following a 5-likert scale and qualitative data was collected using interview guide and documentary analysis. A total of 177 respondents participated in the study. Major findings were that risk identification, risk analysis, risk response planning and risk monitoring and control are strong determinants of patients' vulnerability to clinical risks. The Uganda Police Medical Services needs to build a safety culture by carrying out an audit to assess the police team's safety culture, highlight successes and achievements in improving safety, and being open and honest when things go wrong. Adequate budget, provisions for purchase of sufficient supplies and equipment in addition to establishing a physical modern infrastructure in order to manage clinical risks adequately. A modern, responsive practice that encourages feedback using patients' surveys should also be designed and implemented

Keywords: Risk Management, Patients' vulnerability, Uganda, Police, Dental

Introduction

Risk management world over, has become a main part of the organizations' activities and its main aim is to help all other management activities to reach the organization's aims directly and efficiently. According to (Paulsen, 2016; Niven, 2010) the possibility of these outputs occurring determines the risk in the organizations activity and with the move towards improving quality service delivery. (Change, 2012; Ellen & Martin, 2008) suggest that while a broad participation is widely encouraged on risk management the quality of health service delivery has equally become important to ensure that health professionals are effectively equipped to

participate in risk management. The Uganda Police Medical Services also needs to practice risk management since risk is an inherent part of business and public life. Risk covers all aspects of organizational activities and it is included in all management levels. In reality the changes in the environment require continuous attention for the identification and control of risks (Change, 2012).Risk management is a significant factor in the patients' vulnerability to clinical risk (Gold & Simon, 2015) (Steiner, 2016).

An effective risk management structure should effectively address the specific process of risk identification, risk analysis, risk response planning and risk monitoring and control (Marchewka, 2014) A good risk management should be effective and progressive based on its validity. If these factors are built in a risk management structure, then the patients' vulnerability to clinical risk will be low. In the Uganda Police Force particularly Uganda Police Medical Services there is no particular policy put in place to manage clinical risks. Due to inadequate risk management strategies in the Uganda Police Force and inadequacy of aseptic (germ free) procedures, many patients are vulnerable to clinical infections and indeed at a risk of contracting diseases such as Tuberculosis, Hepatitis-B, HIV/AIDS, Alveolitis to mention but a few. In view of these challenges, there is need to investigate the patients' vulnerability to clinical risk arising from inadequate risk management process. However, in Kibuli Police Dental Clinic, patients are exposed to risks associated with inadequate infrastructure, inadequate sterilization equipment, inadequate protective gear, inadequate sterilization methods and inadequate supplies. If the above mentioned problem is not addressed, the likely implication will include increased cost of patient's treatment, increased number of patients and increased number of fatal cases(Huston, 2013). This is a dangerous precedent for the future of the entire Police community and the associated risks may also affect the dentists in such a way that there is demoralization and decay of knowledge due to inability to practice professionally. This study therefore is aimed at investigating risk management and patients' vulnerability to clinical risks in Kibuli Police Dental Clinic.

Methods

Study Design and setting

Across sectional descriptive survey design was used to describe the nature and pattern of the study where both qualitative and quantitative data was collected and analyzed. Across sectional descriptive survey design was used because it sought to describe a unit under study in detail, in context and holistically(Ritchie, Lewis, Lewis, Nicholls, & Ormston, 2013).

Across sectional descriptive survey design helped to investigate the problem more precisely and increased the researchers' familiarity with the topic under study. The study employed both qualitative and quantitative approaches because the use of both approaches enriches the study methods. Quantitative approach was used to generate the empirical statistical data for analyzing the relationship between risk management and patients' vulnerability to clinical risks at Kibuli Police /dental clinic. The qualitative approach was used to explore deeper the feelings and understanding of the respondents on risk management and patients' vulnerability to clinical risks at Kibuli Police dental clinic.

Sample size and study variables

The study population was derived from Kibuli Police Dental Clinic, Makindye East Division located along Kibuli Road, Kampala. The study specifically focused on the medical administrators, patients and clinicians from Kibuli Police Training School and medical employees of Uganda Police Medical Services Nsambya as respondents. The population in focus included (5) top administrators, (10) health professionals and (162) patients. This ensured that the different viewpoints about risk management and patients' vulnerability to clinical risks. The sampled population constituted respondents above 18 because it was proportionate (maturity age) and reliable for giving consistent information based on their independent opinion and experience at Kibuli Police dental clinic. A sample size of 177 respondents was used. Purposive sampling was used to select five medical administrators and (10) Health professionals who were interviewed. The reason why the researchers used this technique was because the respondents were knowledgeable and had long experience at the clinic. Convenience sampling was used to select (162) patients who participated in the research.

The researcher used this sampling technique because it necessitated the researcher to meet the respondents at their own convenience and also to ensure that this sample is an accurate representation of a large group (Creswell, 2013)

The variables were measured using nominal and ordinal types of measurements. The questionnaires specifically for respondents were measured on a five interval Likert Scale, the level of agreement was ranked as strongly agree, which reflected more agreement than just agreement or strongly disagree compared to just disagree. Ordinal Scale as measurement of variables not only categorized the elements being measured but also ranked them into some order.(Cottrell & McKenzie, 2011); (Cottrell & McKenzie, 2011)Therefore the numbers in the ordinal scale represents relative position or order among the variables The nominal scale of measurement was applied to cases which had some common characteristics such as sex, marital status, and employment status among others. In nominal measurement of variables, numbers were assigned only for the purposes of identification but did not allow for comparison of the variables being measured. On the other hand, Interval scales of measurement were used to capture personal data of respondents.

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Data Analysis

Both qualitative and quantitative data was collected and analyzed. Information gathered from the interview schedules and check list was edited for error. Thematic analysis of data was performed by translating the narratives into a set of equivalent statements (themes) paying attention to actual words interviewees had used. Secondary data further provided evidence and clarified the situation on the ground. (Roelen & Camfield, 2015) assert that Triangulation method of analysis is used in research to enable evaluators come up with appropriate conclusions and recommendations. Data collected was carefully cleaned, sorted, categorized, edited to erase errors and put into themes. As the researcher edited, scrutiny was done to check the error, ambiguity and omissions which was vital in securing accuracy and uniformity on respondents. The data was analyzed for accuracy, consistency and completeness of the information.(Abrams & Harpham, 2014) (Wholey, Hatry, & Newcomer, 2010) affirm that Content analysis is done manually and consists of reading and re-reading the

scripts looking for similarities and differences in order to identify themes and categories patterns and trends which was identified and interpreted according to the study objectives. The data coded-attributing to a number of pieces of data, and the data was organized for easy understanding and data was presented using SPSS. The data then was developed into descriptive

statistics with the help of the SPSS. Then the researcher generated percentages and frequencies, which was used to make comparisons from responses. Pearson product Moment correlations were used to determine the relationship. Correlation coefficient analysis was used to test the relationship between the variables.

Results

The respondents were grouped in five categories of age groups to include below 20 years, 21-25years, 26-30 years, 31-35 years and 35 years above. The majority of the respondents range between 26-30 years of age 54 (30.5%), with a relative number of the respondents of 35years 48 (27.1%) and 31-35 years 46 (26.0%). Only five respondents were ranging below 20 years representing (2.8%). This means that the age groups above 20 years and above were represented with age range of 26-30 being dominant as compared to age group below 20 years. This Therefore suggests that views about risk management and patients' vulnerability to clinical risks were generated from varying age groups from below20yrs to above 35 years.

In terms of gender, there were more males than female respondents. As can be seen, slightly more than two thirds of the respondents 120, which are 67.8 per cent (%), were male and 57 were female with only 32 per cent (%). This means that the study covered both males and females. This seems to imply that there were more males compared to females who participated in this study and it also could also reflect that there are more males than females employed not only in the Uganda police medical services but in the Uganda Police Force. Gender was seen to be relevant in this study as every research should be gender sensitive in order to avoid bias. The majority of the respondents were on the permanent terms of employment 128 representing (72.3%), a relative number of the respondents were on the contract term of employment 35 representing (19.8 %) and on the temporal term of employment 14 (7.9%). Since majorities were serving on permanent terms, it is presumed that they are likely to give objective responses since they have served on their jobs for a longer period. It may also imply that the employees serving on permanent basis may have more experience and skill since they have confirmed status and hence their responses to this study are very vital.

Distribution of the education back ground sought to show the level of education the respondents that were being interviewed. Majority (45.2%) were certificate holders, 26% were Diploma holders and 20.3% were degree holders, 6.2% were Post graduate Diploma holders and 2.3 % were master's degree holders. This kind of distribution shows that the majority of the respondents were certificate holders 45.2 % as opposed to the masters' degree respondents 2.3%. This implies that technically, the majority of the clients attending the clinic are police officers of lower ranks compared to senior police officers who could be seeking for dental services elsewhere. Furthermore, the level of education was seen relevant in this study as it can help in determining the knowledge, skills and experiences in risk management and patients' vulnerability to clinical risks. The varying levels of education can also be associated with the varying respondents' attitudes, practices and perceptions towards risk management. this may imply that respondents with higher level of education are more articulate and objective compared to those with lower level of education.

Relationship between risk identification and patients' vulnerability to clinical risks

The results revealed an r 0.225**which is a weak correlation value. The significant value generated is less than the acceptable limit of 0.05 at 95% level of significance which implied statistically significant results. It can be concluded that there is weak positive relationship between risk identification and patients' vulnerability to clinical risks.

The results of the above quantitative data were substantiated by the results from interview guide with one of the top management staff when asked whether risk identification is very important aspect in minimizing risks at the clinic the respondent said, "Yes, it is very important, however, if risk managers do not succeed in identifying possible risk, then the risk becomes unmanageable." This is therefore a clear indication that when the risks are identified earlier at the clinic then patients won't be exposed to clinical risks.

Further interviews with the respondents however revealed that risk identification without action cannot stop patients from being vulnerable to clinical risks but calls for its development of the basis for the next step of analysis of risk management. When one key informant was asked about risk identification and patients' vulnerability to clinical risks, the respondent answered, "the commonest forms of clinical risks in Kibuli Police dental clinic are due to secondary infections due to unsterilized cotton, secondary infections due to poorly sterilized hand pieces" This implied that the personnel in the clinic do not sterilize cotton wool which is used for the patients and hence a source of clinical risks in the clinic. This also could imply that the personnel do not disinfect the hand pieces which are used for preparing dental cavities before conservation of teeth hence making patients vulnerable to clinical risks.

Meanwhile, much as the study was mainly focused on the patients' vulnerability to clinical risks, one respondent strongly pointed out that, "there are other common forms of clinical infections in the clinic such as droplet infections from the patients, exposure to infected blood, cross infections from the clinician to patients, patients to clinician, patient to patient, clinician to clinician and from environment to patient and also from the needle pricks." This implies that there is a problem of infection control in the clinic which doesn't only affect patients but dental workers as well and thus a need to identify the sources of such clinical risks. Evidence from the respondents indicated that much as there is an effort made to identify risks at the Police, there is need to build a safety culture at the clinic by carrying out an audit to assess the police team's safety culture, highlighting successes and achievements in improving safety, and being open and honest when things go wrong. The same level of rigor should be applied to all aspects of safety, including incident reporting and investigation.

Relationship between of risk analysis and patients' vulnerability to clinical risks

The correlation results r 0.390** (significant value of 0.000) revealed statistically significant results indicating a positive moderate relationship between risk analysis and patients' vulnerability to clinical risks was very strong and positive. This implies that there is a moderate significant relationship between risk analysis and patients vulnerability to clinical risks. This result is substantiated with the results from the interviews with key respondents revealed the following: On the issues about the likely causes of the clinical risks in the police dental services. One respondent observed that, "we lack adequate protective gears; we also have poor ergonomic plan and environmental match complex." Further interviews were conducted with some respondents mostly on the benefits of risk analysis in at the clinic, one key informant said, "there would be reduction of injuries, infections to patients and practitioners if risk analysis is carried out regularly" The respondent further revealed that there was need to improve on the ergonomics of both practitioners and patients since the space of the surgery is also narrow and hence stressing. Therefore improving on risk analysis will improve not only patients' vulnerability to clinical risks but also to the practitioners as evidenced by the statistically significant correlation results indicating a moderate and a positive relationship between risk analysis and clinical risks to patients' vulnerability.

In addition when a member of top management team was asked what the benefits of risk analysis are, the member answered, "The clinicians gain the trust of the community and thus increases the clinic attendance." Further interviews with one top medical manager revealed that the dental patients are more vulnerable to clinical risks because of lack of equipment. When a question was asked on risk analysis the respondent answered, "We lack sterilization like autoclaves besides we also lack regular lessons/workshops on risk management." This literally implies that when police personnel are equipment with knowledge and relevant equipment, the health of the patients will improve and vise visa. Therefore improving on risk analysis in the police dental clinic is very important to patients' safety if risks are to be managed in the said Police dental clinic.

Relationship between risk response planning and patients' vulnerability to clinical risks

The correlation results revealed 0.230** (significant value of 0.002). The significant value generated is less than the acceptable limit of 0.05 at 95% level of significance which yielded statistically significant results. Moreover since Pearson's' r generated is greater than r- critical this shows statistically significant results. This implied that there a positive strong relationship between risk response planning and patients' vulnerability to clinical risks was very strong and positive. This implies that risk response planning helps in reducing patients' vulnerability to clinical risks. This result is substantiated with the results from the interview guide. In order to

gain better understanding on the issues about risk response planning and patients' vulnerability to clinical risks in Kibuli police dental clinic, individual interviews were conducted with the staffs of Kibuli police dental clinic. Some of the respondents agreed much as the management of the police puts efforts in risk response planning, to support the practice team by talking about the importance of patients' safety and demonstrate how one is trying to improve it by including an annual patient safety summary in the practice report. However, when the researcher interviewed one of the members of the top medical management team about the impact of risk response planning in Kibuli Police dental clinic the respondent said, "Clinical risk to dental patients is quite low in police dental services thus its impact is rather insignificant. Therefore improving on risk response planning in the police dental clinic is very important to patients' safety if risks are to be managed in the said Police dental clinic

Relationship between risk monitoring, control and patients' vulnerability to clinical risks

The correlation results r 0.456** (significant value of 0.000) revealed statistically significant results indicating the relationship between of risk monitoring and control and patients' vulnerability to clinical risks was very strong and positive. This implies that risk monitoring and control helps in reducing patients' vulnerability to clinical risks. This result is substantiated with the results from the interview guide.

During an interview with some of the respondents they indicated that for the Police dental services to improve there is need to involve and communicate with patients and the public about risk and safety by seeking patient views, especially on what can be done to improve patients safety. When one senior member of the top medical team was during an interview was asked about risk monitoring and planning strategies in the police medical services the key informant responded that, "senior managers in police don't really think that medical department is so important, this is best reflected in the small budget which never meets the clinical needs." Therefore, when the risk monitoring and planning strategy is effective the risks will be managed and hence patients won't be vulnerable to clinical risks in Kibuli Police dental clinic and the reverse is also true. This is best reflected by the interview with the member of top management team who stressed about the assumptions of the top management medical services being irrelevant to police duties hence small budgets being allocated that cannot address clinical needs adequately.

Furthermore, an interview with one respondent revealed that the environment was not ideal for the treatment of patients. When the respondent was asked, whether there were any other issues he thought he could discuss concerning this study. "Yes, he responded, in police; you cannot get the ideal environment for treating patients properly." This implied that the clinic environment was not ideal for the treatment of patients. It further implied that when the environment is improved then the quality of the services will improve and hence vulnerability to clinical risks will be low. Further evidence from the police documents revealed that the medical budget allocation was so small that it could not support the medical activities and thus monitoring and planning the risks was practically impossible. Furthermore, the researcher noted that since the Uganda National Medical Stores (NMS) took over supplying the Uganda Police Medical Services, most of the dental procedures have been compromised as many of the supplies such as essential dental material haven't been supplied hence putting majority of the patients at risk and therefore vulnerable to clinical risks. This means that the supplies received from the National Medical Stores are not able to meet the demands of the dental clinic as many of the materials required cannot be adequately supplied.

An interview with one of the respondents revealed that much as National Medical Stores had managed to supply the dental clinic with a dental chair, there were many other equipment and materials required for the clinic to be fully functional to manage clinical risks. Therefore, for the police to effectively monitor and control risks, they need to be properly facilitated in terms of equipment and daily supplies.

Discussion

The study revealed a weak but positive relationship between risk identification and patients' vulnerability to clinical risks in the clinic. The result of this study is in agreement with (McGeorge & Zou, 2012; Resources, 2016) who pointed out that correct risk identification ensures risk management effectiveness. If risk managers do not succeed in identifying all the possible risks, then they will become non manageable. The study further revealed that much as the management of Police can identify the possible risks, the environment is not favorable to manage them. This is in agreement with (Messenger, 2016);(Lave, 2013) ;(Rees, 2015)

who points out that risk identification are the basic stage of risk management. Furthermore, the results of this study are also in agreement with (Vallero, 2014; Bonita, Beaglehole, Kjellström, & Organization, 2006) who observed that, by identifying risks, the organization could study its activities and ascertain where its resources are exposed to risks. The results from key respondents further revealed that the commonest forms of clinical risks at the clinic were due to secondary infections, unsterilized cotton, and secondary infections were due to poorly sterilized hand pieces.

Results of this study are also in agreement with the findings of Shafer, (2002) who reported that infections in a dental setting may be introduced to the patient through contact with the environment, personnel, or equipment. Whereas the studies of (AORN & Nurses, 2006) states that proper hand washing can be "the single most important measure to reduce the spread of microorganisms." In this study respondents affirm that the practice of hand washing was being practiced by the dental workers. However, the theory of clinical risk that anchored this study agrees that all health activities by its very nature, carries risk, and such risks can be due to a variety of causes whether it is accident or mishap (Inc, 1966;Glendon, Clarke, and McKenna, 2016)

The findings revealed that there was a moderate and a positive relationship between risk analysis and patients' vulnerability to clinical risks. The results were in agreement with (Organization, 2011; Ventola, 2014) who contend that the analysis of clinical risk is a key dental health trust responsibility and is an ongoing process involving and identifying the potential for harm to service users, staff and the public. In addition, (Protection, Munro, & Education, 2011) observed that clinicians make decisions on a daily basis about how to help a service user (patients) manage their potential for vulnerability, self-harm suicide or self-neglect. Assessment of risk should be structured, evidence-based and as consistent as possible across settings and service providers. The results also agree with the studies carried by (Haseltine, 2013; Medicine & Medicine, 2011) who reported that risk analysis provides a single, efficient way for organization to manage occupational health, treatment and rehabilitation, counseling and other care services This is based on the fact that risk assessment per se has a very limited, and short-term, predictive power in ascertaining a person's future risk.

Finally the results of this study strongly agree with findings from Ministry of Health, Uganda, report that urged clinicians and also employing organizations to adopt a more systematic approach to risk assessment and management. The ministry recommends that a local risk assessment tool (together with professional judgment) should be used to assess the risk presented by each individual service user.

The study also concurs with that of (Kendrick, 2009; Buckingham, 2008) who had documented in his studies that risk is an inherent in everything that we do and that risk management is simply helping us to take better decisions. Implying that risk response planning is helping us run projects in the real world. Developing procedures and techniques to enhance opportunities and reduce threats to the project. This step addresses all the strategies made to respond to risks together with the response structures and resources. Furthermore, (Youth, Families, Medicine, & Council, 2014;Waddell, Burton, & Pensions, 2006) highlight that maintaining live organization risk database where risks attributes such as opening date of the risk, title of the risk, short description of the risk, probability and importance of the risks are kept for proper risk resolution and a date by which the risk must be resolved to ensure safety of the patients so that time and money can be saved.

Youngberg 2010:53;Tarantino & Cernauskas,2009) who contend that responsibility of risk management is understood within the organization. In addition, (Greene & Stellman, 2013) pointed out that risk monitoring and control is all about having risk response strategies such as avoid the risk by eliminating the condition causing it, monitor the risk to see the impact it will cause, mitigate the risk, accept the risk and learn from it, transfer the risk and have a contingency budget. (Glendon, Clarke, & McKenna, 2016b) seem to agree with this study that there is a direct link between risk monitoring, control and patients' vulnerability to clinical risk. Finally the results of this study strongly agree with (Wilson, 2006) who affirm that risk monitoring, and control is very crucial in minimizing patients' vulnerability to clinical risks.

Conclusion

The findings of this study showed that there is a relationship between risk identification and patients' vulnerability to clinical risks implying that risk identification is a very important aspect in the management of clinical risks. It also clearly shows that there is a relationship between risk analysis and patients' vulnerability to clinical risks

implying that risk analysis is a critical step in the management of clinical risks. Moreover, there is a relationship between risk response planning and patients' vulnerability to clinical risks implying that risk response planning is a key step in risk management as it contributes positively towards minimizing patients' vulnerability to clinical risks. Hence it is very important to integrate risk management activity by regularly reviewing the patient's records and laying strategies on how best clinical risks can be managed. There is a relationship between risk monitoring and control and patients' vulnerability to clinical risks. Hence risk monitoring and control are quite crucial in the management of clinical risks. The lessons learnt here are that, when the risk monitoring and planning strategy is effective the risks will be managed and hence patients won't be vulnerable to clinical risks. This can be done by reporting and sharing patient's safety incidents.

The study investigated the relationship between risk management and patients' vulnerability to clinical risks. There could be other forms of risks in the Uganda Police Force; these risks could be investigated in other studies. The study was carried out in the Uganda Police Medical Services and yet there are many departments in the Uganda Police Force with different risk factors. A similar study may therefore be undertaken among other departments in the Uganda armed forces let alone Uganda Police Force.

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