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The emotional response of surgeons on collateral damage in Lagos, South-Western Nigeria

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ABSTRACT

Background: The study aimed at investigating the significant complications in the career of surgeons, the effect of major complications on their psychological states, job performance, roles of colleagues, and how surgeons cope with their emotional reactions after a major complication or medical error. **Methods:** This study was a cross-sectional descriptive study that took place at three tertiary hospitals in Lagos State, Nigeria. 77 surgeons were recruited and they were asked to complete a questionnaire on emotional reactions after a major medical error. **Results:** The majority of the participants were males 72 (96%), 54 (68%) were within the age group 35-55 years, and 74 (98%) were married. The time of first emotionally impacting complication was during residency program 47 (62.7%). Only 18 (24%) agreed that it affected their professional functioning while 49 (65%) claimed that it did not impair their professional functioning. Of all the participants, only 2 (2.7%) sought outside professional treatment. A large number of the participants claimed they dealt with their negative emotional reactions by discussing with their surgical colleagues 44 (58.7%). Only 26 (34.7%) drank alcohol and 2 (2.7%) smoked cigarettes. The relationship between the variables and emotional response to surgical complications using Fishers exact test showed that there were no significant relationships. **Conclusions:** The time of first emotionally impacting complication occurred during residency program and as young consultants, and it affected their professional functioning. Hospital managers and policy makers should encourage medical doctors to seek necessary medical help when troubled emotionally. The negative emotional reactions of medical doctors should be given needed urgent attention by providing necessary supports for medical doctors in dire straits.

KEY WORDS: Collateral damage, emotional response, Lagos, Nigeria, surgeons

INTRODUCTION

Medical doctors are trained to recognize, treat, cure, and care for patients with various types of physical disorders from medical schools and during postgraduate training. However, medical doctors' training did not focus on how to cope with negative emotional reactions after a serious complication, medical error or death of patients [1]. However, serious complications and adverse events are unfortunately part of surgical practice [2]. In this light, previous studies have shown that physicians and surgeons experience various degrees of negative psychological reactions due to serious complications and deaths of the patients [1-3]. Therefore, medical doctors who suffer from negative emotional reactions due to complications from their practice may experience symptoms and disorders of mental illness such as general anxiety disorders, phobia, substance abuse, posttraumatic stress disorders, and depression [1-3]. Zambraco *et al*., [4] noted that death and dying are part of surgical practice because surgeons regularly take care of or treat dying patients. Therefore, frequent experience of patients dying may have a lasting negative impact on the emotions of surgeons. One recent study showed that 61% of medical doctors suffered from anticipatory anxiety about future errors, 44% had reduced confidence, 42% had insomnia, and 42% claimed they also experienced poor job satisfaction after major medical errors [5]. When physicians and surgeons lose patients due to major complications or medical errors, they were reported to also suffer from grief, bereavement and posttraumatic stress disorder which manifested as shock, sadness, crying, lack of control, avoidance, guilt, panic and insomnia, some of them may even claim responsibility for the loss of life of the patient [5-7]. Another study indicated that members of surgical teams experienced posttraumatic stress disorder on experiencing patients' death [8]. The inability of surgeons to develop adequate coping mechanisms after serious medical errors or patients death were observed to bring about maladaptive coping patterns that were also found to lead to emotional distress and burnout [9]. However, in order to cope with the psychological distress and burden of medical errors, some surgeons use or abuse alcohol and other substances [10]. In Norway, one study showed that female surgeons had the tendency for more frequent, larger amount and a higher rate of hazardous drinking when compared

to their non-surgeon counterparts [11]. Surgeons were also found to internalize and personalize tragedies associated with patient's death; for this reason they use different types of psychological defense mechanisms such as denial, repression, projection, and suppression which could also increase their emotional vulnerabilities to psychological distress [10]. Prior publications indicated that major complications have unrecognized emotional effects on medical doctors which can lead to negative impact on future patient care [5,10,12].

However, despite this global professional phenomenon, published literature on complications, medical errors and death of patients and surgeons' emotional reactions have not been thoroughly investigated especially in the sub-Saharan countries. Thus, the detrimental effects of emotional reactions of surgeons in Africa may not be adequately understood. Therefore, this study sought out to investigate when the first significant complication occurred in the surgeon's career; the effect of the complications on surgeons' psychological states, job performance, roles of colleagues and how they cope with their emotional reactions in the aftermath of a serious complication or medical error.

METHODS

Design and Setting

The study was prospective, descriptive and cross-sectional survey. It has a convenience purposive sampling. Data were collected from two different teaching hospitals and one specialist tertiary hospital. They are, Lagos State University Teaching Hospital, Ikeja, Lagos University Teaching Hospital, Idiaraba, Lagos and National Orthopaedic Hospital, Igbobi, Lagos all in Lagos State, South-West, Nigeria. All the surgeons working in these three institutions were invited to complete a questionnaire that collected information on demographic variables, substance use, another details about their clinical practice. Of the 120 surgeons working at these tertiary hospitals only 75 returned the questionnaire making a response rate of 63%. The data collection took place in May and June 2014.

Measures

A 26-item questionnaire was designed and used for the study. The questionnaire contained a section that collected data on demographic details of the participants, level of training before experiencing first serious complications, the effect of the complication on their emotions (such as symptoms of anxiety and depression) and how they responded to the complication. There were also some items on alcohol use and other coping strategies [32,3].

Definition of a Complication

For the purpose of this survey, a serious complication was defined as any adverse event experienced by a patient during or after a surgical procedure. The complication could be due to a direct consequence of a medical error by the surgeon or clinical complication due to the surgical procedure.

Table 1: Relationship between emotional responses to surgical complications

Variables	*n* (%)
Time of first emotionally impacting complication	
Medical school	12 (16.0)
Residency	47 (62.7)
After obtaining fellowship	16 (21.3)
Total	75 (100.0)
Sough for professional treatment?	
No	73 (97.3)
Yes	2 (2.7)
Total	75 (100.0)
Emotional response to complication impairs professional functioning?	
Strongly disagree	17 (22.7)
Disagree	32 (42.7)
Neither agree nor disagree	8 (10.6)
Agree	18 (24.0)
Total	75 (100.0)
Discuss complications with whom	
Not with anyone (handle on my own)	10 (13.3)
Discuss with surgical colleagues	44 (58.7)
Discuss with non-surgical physician colleagues	3 (4.0)
Discuss with family member	16 (21.4)
Discuss with others (non-family, non-physician)	1 (1.3)
Discuss with professional counselor	1 (1.3)
Total	75 (100.0)
Awareness of support groups	
No	70 (93.3)
Yes	5 (6.7)
Total	75 (100.0)

Ethical Clearance

The permission to carry out the study was taken from the Research and Ethics Committee of the three hospitals. A written permission was also sought from every participant that took part in this study.

Statistical Analysis

Data collected from each respondent were entered into a computer and analyzed using commercially available Statistical Package for Social Sciences (SPSS, version 24, IL, Chicago, USA). Mean transformed scores were calculated for all domains and expressed as mean ± standard deviation (SD) continuous variables were expressed as means (SD), categorical variables as proportions. Comparisons of categorical variables were done using Chi-square and the means using the Student's *t*-test. A $P < 0.05$ was taken as significant.

RESULTS

(Table 1)The majority of the participants were males 72 (96%) within the age range 35-60 years (mean = 49.96; SD = 8.6), and 74 (98%) were married. The years of practice ranges between 2 and 40 years (mean = 2.53; SD = 10.20). More than half of the participants spent at least 6 years for their residency program 39 (52%) (Mean = 6.67; SD = 1.23, range 5-10) (Table 2). With regards to area of current practice or specialization, 23 (30.7%) were practicing as general surgeons, another 23 (30.7%) were practicing as orthopedic/trauma surgeons and 29 (38.6%)

Table 2: Socio-demographic features and background of participants

Variables	*n* (%)
Age group (years)	
35-45	26 (34.7)
46-55	28 (37.3)
>55	21 (28.0)
Total	75 (100.0)
Mean=49.96 (SD=8.16)	
Median=50	
Range 35-60	
Gender	
Male	72 (96.0)
Female	3 (4.0)
Total	75 (100)
Marital status	
Married	74 (98.7)
Single	1 (1.3)
Total	75 (100.0)
Years of practice	
<10	10 (16.1)
10-20	25 (33.3)
21-30	22 (29.3)
>30	16 (21.3)
Total	75 (100.0)
Mean=20.53 (SD=10.20)	
Median=21	
Range 2-40	
Drink alcohol	
No	49 (65.3)
Yes	26 (34.7)
Total	75 (100.0)
If yes, number of bottles/week	
Nil	49 (65.3)
1-2 bottles	18 (24.1)
>2 bottles	8 (10.6)
Total	75 (100.0)
Smoke cigarette	
No	73 (97.3)
Yes	2 (2.7)
Total	75 (100.0)
If yes, number of sticks per day	
Not applicable (don't smoke)	73 (97.4)
10 sticks/day	1 (1.3)
20 sticks/day	1 (1.3)

SD: Standard deviation

Table 3: Relationship between emotional responses to surgical complications

Variables	*n*=75		Statistics
	Emotional response (*n*=18) (%)	No emotional response (*n*=57)	
Age category (years)			
35-45	6 (23.1)	20	χ^2=0.354, df=2, *P*=0.838
46-65	6 (21.4)	22	
>65	6 (28.6)	15	
Sex			
Male	18 (25.0)	54	χ^2=0.987, df=1, *P*=0.433
Female	0 (0.0)	3	
Marital status			
Married	17 (23.0)	57	χ^2=3.209, df=1, *P*=0.240
Not married	1 (100.0)	0	
Alcohol use			
No	11 (22.4)	38	χ^2=0.186, df=1, *P*=0.435
Yes	7 (26.9)	19	
Cigarette use			
No	17 (23.3)	56	χ^2=0.762, df=1, *P*=0.425
Yes	1 (50.0)	1	
Level during complication			
Medical school	2 (16.7)	10	χ^2=2.377, df=2, *P*=0.305
Residency	14 (29.8)	33	
After fellowship	2 (12.5)	14	

FE=Fishers exact test showed no was variable significantly associated with emotional response to surgical complications

practice in other subspecialty of surgery. With regards to time spent doing clinical work, 32 (42.7%) of the participants claimed they spent more than 70% of their time, while 43 (57.3%) spent <70% of their time carrying out their clinical duties (Mean = 67.25; SD = 15.55). When asked about the time spent in performing surgical procedures, 55 (73%) claimed they spent less that 40% of their professional time, while 20 (26.6%) mentioned that they spent more than 40% of their professional time on surgical procedures.

The time of the first emotionally impacting complication was during residency program 47 (62.7%), 16 (21.3) after obtaining fellowship whilst 12 (16%) mentioned that it was during their training in the medical school. Only 18 (24%) agreed that the emotionally impacting complications affected their professional functioning whilst 49 (65%) claimed that it did not impair their professional functioning. Of all the participants, only 2 (2.7%) sought outside professional treatment for their emotional distress. A large number of the participants claimed they dealt with their negative emotional reactions by discussing it with their surgical colleagues 44 (58.7%), 18 (24%) said they discussed with relations, 9 (12%) claimed they prayed about it whilst 12 (16%) said they researched more into what caused the medical errors. Of all the participants, only 26 (34.7%) drank alcohol and 2 (2.7%) smoked cigarettes. Two (2.7%) participants admitted that their alcohol consumption increased due to the experienced medical errors. When asked about changes in the way complications were handled, a large majority 63 (84%) claimed that with experience on the job, it becomes easier to handle, 10 (13.3%) claimed that it is always difficult to handle no matter the years of practice. A very large majority of the participants 70 (93.3%) mentioned that they were not aware of any support group in their institutions. The relationship between all the variables and emotional response to surgical complications using Fishers exact test showed that there were no significant relationships as reflected in Table 3.

DISCUSSION

This study sought out to investigate when the first significant complication occurred in the surgeon's career; effect of complications on their psychological states, job performance, roles of colleagues and how the cope with their emotional reactions in the aftermath of a serious complication or medical

error. With regards to the first objective of the study, our findings showed that 47 (63%), 16 (21.3%), and 12 (16%) of the participants experienced their first emotionally impacting complications during residency program, after obtaining fellowship and while in medical school respectively. These findings are in agreement with previous studies. Previous publications on surgeons' emotional reactions after major medical errors showed that long working hours, frequent night calls, lack of control over one's time in medical school and during residency period were found to be responsible for the development of symptoms of emotional symptoms such as guilt feelings, self-doubt, anxiety and depression among young medical doctors [1,2,14,15]. The findings of this study showed that only 21.3% of the participants had their first major medical errors after becoming consultants. Among the participants, 24% claimed that the medical errors had significant negative impact on their emotional states. The probable explanation could be due to the observation that consultant surgeons do not get the professional and emotional supports they got during residency training and the potential of possible legal injunctions that may result from such complications [5,16,17]. This observation is also in consonance with the findings of Redinbaugh *et al.* [1] that noted that 31% of their surveyed doctors experienced negative emotional impact and 23% reported that a patients' death was very disturbing to them. In the same vein, 52% of the participants mentioned that the experienced major medical error affected their job performance for a period of 1-4 weeks. Previous studies showed that when surgeons experience frequent psychological distress, physical and emotional exhaustion, it may affect their productivity and effectiveness in discharging their clinical duties [17-20].

With regards to coping after experiencing emotional distress, majority of the participants 58% claimed that they discussed the issue with fellow colleagues, 21.4% with family members while 13.3% said they were able to cope on their own. Published evidence indicated that having someone to talk to and seeking the services of a counselor could be protective in reducing symptoms of psychological distress [21,22]. However, among participants, only 2.7% sought professional help outside the hospital. Again published documents showed that when medical doctors suffer from serious psychological distress, the majority do not have regular sources of healthcare services [22]. This is because medical doctors are reported to be reluctant to ask for psychological or psychiatric help due to fear of stigma, confidentiality, loss of respect and self-esteem [22-24]. This probably explains why clinical depression among medical doctors is reported to be higher than the general population and was found to affect 12% of male physicians and 18% of female physicians [22-24]. Studies also showed that medical doctors have a higher risk of dying from suicide when compared to other professionals and the general population [22-24]. Other coping strategies adopted by the participants include smoking nicotine cigarettes and drinking alcohol. Our findings showed that only 2.7% participants smoked nicotine cigarettes while 34.7% drank alcohol. Previous reports also indicated that job dissatisfaction and long working hours among surgeons may allow for the use of alcohol and other substance as a form of coping skill [13]. Nonetheless, the degree of alcohol and drug abuse among medical doctors was found to be similar to that of the general population [13]. One report, however, showed that problematic alcohol use was observed in 6.8% of surgeons in their survey. While other studies showed that surgical oncologists had more of alcohol and drug use problems [13,25,26]. The majority of participants (93.3%) claimed that they were not aware of any support group in their institution. Studies have also shown that many health institutions do not provide emotional support services for their hospital staff in the aftermath of serious medical complications [27-30]. This may be so because surgeons were observed to be reluctant to disclose medical errors to their colleagues and relations of patients for fear of litigation, being labeled incompetent, stigmatized or punished by management of the hospital [2,22]. In this light, it has been suggested surgeons should undergo medical first aid after a major medical complication to resolve emotional symptoms such as guilt, shame, worry, avoidance that may prevent the surgeon from being effective at work [10].

Nevertheless, in order to prevent serious emotional distress among surgeons in the aftermath of a major medical error, studies have suggested that hospital managers should provide mentors for young consultants, carry out blame-free forums for the discussions of medical errors and encourage teamwork and interpersonal communication skills among the hospital professionals [17,18,28]. The consequences of a surgeon who is emotionally distressed will probably bring about the economic loss to his hospital in terms of absenteeism, reduced effectiveness, productivity and early retirement may ultimately translate to reduced patients' satisfaction. For this reason, it is pertinent for surgeons to acquire personal wellness strategies and programs which include, spiritual practices, work-life balance, healthy relationships with hospital team members, develop exciting hobbies such as playing golf or lawn tennis, cycling or swimming twice weekly in order to promote higher energy and endurance for long working periods; having quiet rest periods, meditation, and carrying out relaxation techniques [30,31]. In the prevention of stress and burnout among surgeons, it has been recommended that hospital managers and policy makers should make it mandatory for surgeons to undergo basic management science programs which should include negotiation, communication, inter-personal relationships skills, leadership, change, time, and stress management [28-30]. Studies have shown that clinicians who were insufficiently trained in communication and management skills had higher levels of stress and burnout compared to those who were sufficiently trained. In this light, the hospital management should include in their continuous medical education training in communication and management skills. In this wise, older colleagues who had acquired such managerial skills were advised to monitor, mentor and frequently evaluate the performances of their younger colleagues [32]. Clearly, this study has its limitations. The small sample size may not allow for generalization of its finding. Specific psychiatric or psychological disorders such as anxiety and depression were not measured with diagnostic tools. Likewise, there could be recall bias of their first significant medical errors from the participants. Nonetheless, since studies on medical doctors' psychological reactions after a major complication are scanty in Africa, there

is a need for additional research to elucidate evidence-based interventions at both the individual and organizational levels. Nevertheless, this study has added to the body of knowledge on medical doctors' emotional reactions to major medical errors in the hospital settings.

CONCLUSION

This study demonstrated that the time of first emotionally impacting complication was during residency program and as young consultants, who also affected their professional functioning. Participants claimed they dealt with their negative emotional reactions by discussing it with their surgical colleagues. Policy makers should make policies to encourage physicians and surgeons to seek for necessary medical help when troubled emotionally and also remove discrimination and punitive actions that may prevent medical doctors from seeking professional help when psychologically ill. The negative emotional reactions of medical doctors should be given needed urgent attention by providing necessary supports for medical doctors in dire straits.

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