

Assessing anxiety levels amongst surgeons during covid-19 pandemic

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Background: The novel Corona Virus disease (COVID-19) originated from Wuhan in china. This virus has rapidly spread across the borders to several countries in the world affecting many people both young and old, making the spread pandemic. This pandemic has led to a massive public reaction, with the social media creating so much awareness to keep people informed about the situation. The pandemic, with the social media is creating a lot of concern for people leading to some level of heightened anxiety and stressful response. The pandemic has also necessitated some measures by the countries with the disease to control the spread which included locking down of borders and restrictions of human movements and traffic of nonessential goods, closure of places of worship and learning for several weeks to months. The effects have ranged from social impacts to economic affectation of individuals, families and organizations. It has led to overwhelming impact on healthcare workers, making them change their work pattern, increased demand and unavailability of working materials to combat the increased workload and loss of lives. Amongst specialists, surgeons are known to be involved in work related activities that expose them significantly to infection with COVID-19.

Objective: This study assessed the level of anxiety in a group of healthcare providers (surgeons) in a tertiary institution in Nigeria during the period of COVID-19 pandemic.

Method: This is an observational study. A non-probability snowball sampling technique was used. Consented participants were assessed with an online sociodemographic/clinical and Generalized Anxiety Disorder (GAD) questionnaires. Participants with ages ranging from 21-60 years who gave consent were included. The anxiety level was graded using the GADs score.

Results: A total of 76 responses were received. All the participants were surgeons of Nigerian origin practicing in Alex-Ekwueme Federal University Teaching Hospital Abakaliki, with 56 males and 20 females. Of all respondents, consultants were made up of 59.2%, senior registrars :21.1%, registrars:7.9% and post MBBS were 11.8%. Department respondents are surgery: 26.3%, dental/maxillofacial:26.3%, ophthalmology:21.1%, obstetrics and gynaecology:18.4%, and otorhinlaryngology:7.9%. Amongst all the surgeons, 94.7% are anxious of infecting their loved ones with COVID-19.

Conclusion: Epidemics and pandemics of community infections periodically occur and the challenges abound ranging from health workers to non-health workers.

Key Words: Anxiety; Covid-19 pandemic; Surgeons

INTRODUCTION

In December 2019, the outbreak of the novel coronavirus disease (COVID-19) emerged from Wuhan China and since then the disease has spread globally and was declared pandemic by the World Health Organization [1,2]. Coronavirus disease is caused by a newly discovered coronavirus. Most people infected with COVID-19 virus experienced mild to moderate respiratory illness and recover without requiring special treatment. Older people and those with underlying medical problems like cardiovascular disease, diabetes mellitus, chronic respiratory disease and cancer are more likely to develop serious illness. The best way to prevent and slow down transmission is to be well informed about COVID-19 virus, the disease it causes and how it spreads [3]. The similarity between COVID-19 and SARS Coronavirus in posing global threat has led to creation of awareness on social media, online courses for healthcare workers around the world, global fundraising and Strategic Preparedness Response Plan (SPRP) that were set up to limit transmission to provide early care and minimize social and economic impacts globally [2].

Psychological impact on health care professional

The general population is at high risk of psychological impact of this pandemic on both the health care and non-health care workers. On the side of the healthcare workers, there is increased fear of contacting the virus, there is worry of bringing the virus home and infecting loved ones especially in homes with elderly and young children [4,5]. Experience from previous epidemic (SARS AND HINI) has shown same psychological strain on health care professionals who find themselves at the frontline of the outbreak [4].

Impact of Covid-19 pandemic on surgeons

The pandemic has led to absence of appropriate protective measures for healthcare workers due to increased demand. This has affected the involved countries globally with Nigeria not left out. The Nigeria Centre for Disease Control (NCDC) as of 11th May 2020, has recorded a total of 4641 cases (3589 active cases,902 discharged and 150 deaths) due to COVID-19 infection [6]. This as well has increased the anxiety and concerns of healthcare workers. Amongst specialists, surgeons are known to be involved in work related activities that expose them significantly to infection with COVID-19. The occasional disruption of surgical care and cancellation of surgery do occur, but the current pandemic has unplanned implication for surgical services for patients due to lack of availability of Personal Protective Equipment (PPE) from high demand. Supply of surgical resources for surgical patients are down played, rather the increase demand for ventilators, hospital space and personnel are depriving surgical capacity to a point that important essential surgical delivery is at a halt [7].

The latter with unavailable Personal Protective Equipment (PPE) has increased the risk of exposure and this amounts to some level of anxiety while discharging their professional duties.

MATERIALS AND METHOD

This is an observational study conducted in a tertiary hospital (Alex-Ekwueme Federal Teaching Hospital Abakaliki Ebonyi State, Nigeria). A non-probability snowball sampling technique was used. Participants were assessed with an online sociodemographic/clinical and Generalized Anxiety Disorder (GAD) questionnaires, with a consent form appended to it. The link to the questionnaire was sent through WhatsApp and other social media to the contacts of various surgeons' groups. On clicking on the link,

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there was an auto direction to study, informed consent and questions. Following agreement to participate on the study, the sociodemographic questions were taken and a sequential set of questions on career and GADs after which the participant clicks on submit button at the end. The socio-demographic questions included; age, sex, marital status, number of dependants, co-morbidity, and residence. The clinical questions included; department, cadre, attitude to COVID-19 Virus, effect of COVID-19 on work and personal life. While the GADs questionnaire comprised of seven questions on the level of anxiety score on the participant, which scored each answer from 0 to 3 (option A scores 0 and D scores 3). A score of 5 grades mild anxiety, a score of 10 grades moderate anxiety while a score of 15 grades severe anxiety. Participants with ages ranging from 21-60 years who gave consent were included. Data collection lasted for one week. The anxiety scores were calculated using GADS score. Mean and standard deviation and proportions were used to estimate the results of the study.

RESULTS

This study was conducted online to assess the level of anxiety related to COVID-19 pandemic amongst surgeons in Alex-Ekwueme Federal University Teaching Hospital Abakaliki, Ebonyi State, Nigeria. Table 1 shows the socio-demographic/clinical findings.

A total of 76 responses were received. All the participants were surgeons of Nigerian origin practicing in Alex-Ekwueme Federal University Teaching Hospital Abakaliki, between the ages of 21-60 years with 56 males and 20 females. Sixty respondents were married while 16 were single, 50 of them are residential within the hospital while 26 of them resides outside the hospital. Forty-six respondents have <4 dependants while 30 of them have >4 dependants. Of all respondents, consultants were made up of 59.2%, senior registrars :21.1%, registrars:7.9% and post MBBS were 11.8%. Department respondents are surgery: 26.3%, dental/maxillofacial:26.3%, ophthalmology:21.1%, obstetrics and gynaecology:18.4%, and otolaryngology:7.9%.

TABLE 1: Socio-demographic and clinical features of the participants.

Variables	N (%)
Age (years) M ± SD	40.1
	Male 56 (65.5%)
Gender	Female 20 (24.5%)
	Married 60 (78.9%)
Marital status	Single 16 (21.1%)
Place of residence	Inside hospital 50 (65.8%)
	Outside hospital 26 (34.2%)
No of dependent	Less than 4 46 (60.5%)
	More than 4 30 (39.5%)
Presence of co-morbidity	Yes 42 (55.3%)
	No 34 (44.7%)
Status	Consultant 45 (59.2%)
	Senior Reg 16 (21.1%)
	Reg 6 (7.9%)
	Post MBBS 9 (11.8%)
Department	Surgery 20 (26.3%)
	Dental/Max 20 (26.3%)
	Ophthalmology 16 (21.1%)
	Obs and Gynae 14 (18.4%)

	Otolaryngology	6 (7.9%)
Are you anxious your loved ones might be infected with coronavirus?	Yes	72 (94.7%)
	NO	4 (5.3%)

In comparing the age range of the participants with the level of anxiety in getting their loved ones infected, it was noted that the ages between 31-40 years were more anxious of infecting their loved ones than the rest of the age group (Table 2). These are young surgeons, majority at this age are full of life with and optimistic of future. The next in the table are those above 60 years. This group may have impending or controlled co-morbidity and are at higher risk of mortality if infected by the virus. rest of the age group (Table 2).

TABLE 2: Age versus anxiety distribution.

Age (years)	Anxiety level	Percentage (%)
21-30	12	15.8
31-40	22	28.9
41-50	11	14.5
51-60	15	19.7
>60	16	21.1
Total	76	100

Effect of COVID-19 on clinical duties/personal life

From the results shown in figure 1 more than half of the participants (58%) are anxious of contacting the covid-19 virus. For this reason, their clinical duties have been affected by the pandemic. This has been reflected as 52% of the participants and have lost interest in operating as a surgeon since the pandemic. However, there is no regret of being a surgeon and 88% of surgeons are not directly involved in the treatment of COVID-19 patients. As shown in table 1, 94.7% of the surgeons are worried of infecting their loved ones with covid-19 virus. Of all respondents, 55.3% are living with co-morbidity in the form of hypertension, diabetes, cardiac diseases, chronic obstructive airway diseases, and chronic renal diseases while 44.7% are without co-morbidity.

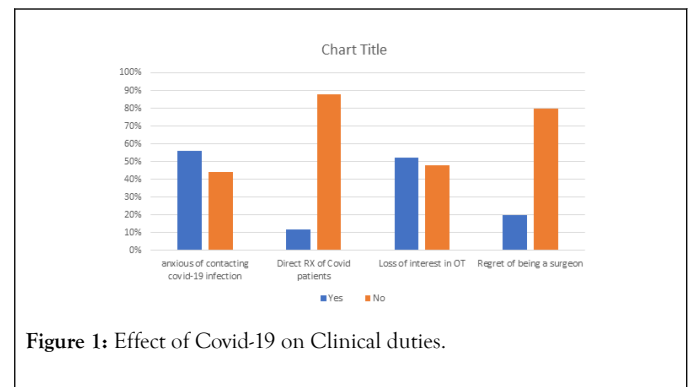


Figure 1: Effect of Covid-19 on Clinical duties.

Anxiety levels towards COVID-19

As shown in table 3, there is evidence of anxiety of covid-18 pandemic amongst the surgeons. Using generalised anxiety disorder score, this ranges from mild, moderate and severe anxiety levels and has been demonstrated across the results obtained. Participants with mild anxiety ranges from 10.5-26.3%, those with moderate anxiety ranges from 5.3-26.3% while participants with severe anxiety ranges from 5.3-21.1%. In summary 51.4% of the participants were reported to have feeling of anxiety or on edge. Approximately 52.7% were not able to stop worrying too much about the pandemic. A total of 46.1% of the participants were feeling afraid they might get infected with Covid-19 virus. This study has also shown that

anxiety was more amongst female surgeons than their male counterparts. Hundred percent of all female surgeons are anxious of getting their loved ones infected with COVID-19 while 96.4% of male surgeons have same feeling (Table 4). It was also observed amongst the sub specialties that surgeons in the department of surgery have more anxiety compared to the others (Table 4).

Over the last two weeks, how often have you been bothered by the following problems

TABLE 3: Generalized anxiety disorder score result.

	Not at all sure (score 0)	several days (score 1)	Over half the day (score 2)	Nearly Everyday (score 3)	% of Anxiety
Feeling anxious or on edge	37	18	5 (10)	16(48)	51.4
Not being able to stop or control worrying	42	13	10(20)	11(33)	44.8
Worrying too much about the pandemic	36	17	12(24)	11(33)	52.7
Trouble relaxing	43	20	8(16)	5 (15)	43.4
Being so restless that its hard to sit at all	40	20	8 (16)	8 (24)	47.3
Being easily annoyed or irritable	44	8	17 (34)	7 (21)	42.1
Feeling afraid you may get covid-19	41	19	4 (8)	12 (36)	46.1
Total score	0	115	128S	214	

TABLE 4: Comparing level of anxiety in different Subspecialty/Sex.

Department	Sex		Anxious of infecting loved ones
	Male	Female	
Surgery	18	2	20 (27.8%)
Obstetrics and Gynae	10	4	14 (19.4%)
Ophthalmology	10	6	16 (22.2%)
Otolaryngology	5	1	6 (8.3%)
Dent/Max	13	7	16 (22.2%)
Total	56	20	72
Anxious of infecting loved ones	54 (96.4%)	20 -(100%)	

DISCUSSION

Individuals experience varying levels of psychological distress during pandemics. A so-called low level of anxiety in health may result in a devastating effect in such individual’s life.

Impact of epidemic and pandemic are often intense and the fear with anxiety levels related to them also influence peoples’ behaviour generally with healthcare providers including surgeons.

Benjamin et al. [8] in their work on the psychological impact of COVID-19 workers in Singapore has demonstrated less psychological impact of the pandemic on healthcare workers and attributed this to possibility of more information about the virus amongst healthcare workers. This is similar to what is shown in this study as those with anxiety level are less than those without any anxiety. However, amongst those with anxiety, there is so much anxiety on the surgeons concerning infecting their loved ones at home with Covid-19 virus infection. This is in keeping with the report of Tsamakis et al [5]. Another study from a tertiary institution in China has also reported a high incidence of anxiety amongst other healthcare workers but not doctors [9].

Presence of co-morbidity and advanced age have been shown to increase the risk of mortality due to COVID-19 infection [10]. Elderly and individual

with chronic diseases have an increased risk of contracting COVID-19 infection [11]. In this study the level of anxiety increased in our patients older than 60years because of the presence of co-morbidity identified in this age group. The study also noted increased anxiety in younger surgeons of 31-40years of age. This could be explained by the fear of loss of a loved member of the family who could be infected by the surgeon.

In this study, greater number of surgeons had not been involved in the treatment of Covid-19 virus positive patients in the institution. The reasons are not far-fetched as many of them are anxious of getting infected by the virus, or infecting their loved ones because of fewer number of personal protective equipment (PPE) available and increased number of surgeons living with some co-morbid conditions. These as well have led to decreased interest in operating as a surgeon though has not affected their career choice. Some surgeons are involved in procedures that increase the risk of infection with COVID-19 virus especially the ENT surgeons that are involved in all procedures of aerodigestive secretions [12]. Worthy to note that the first reported physician mortality related to Covid-19 in Wuhan, China on 25th January 2020 was an ENT physician [13]. However, comparing the level of anxiety amongst the surgical sub specialty has shown the surgeons in surgery department as more worried. This could be

explained by the number that participated in the study as surgery has higher number compared to others.

The impact of a psychological distress from health pandemic can hit some group of individuals more than others. The study has shown that females are more anxious than the males. Ozdin et al noted same [14] in their work on the level and predictors of anxiety, depression and health anxiety during COVID-19 pandemic in Turkish society. Other predictors they mentioned are individuals with chronic health diseases which correlates with our finding.

Although COVID-19 patients are not primarily surgical patients, they can develop surgical pathologies which can present as emergency or elective [15]. The pandemic has affected surgical practice in multiple ways identifying these risks mentioned above, can enable the surgeons to strategize and develop a guideline to help them deliver clinical services adequately without extensive adverse effect on their duties and personal lives [15]. The guideline requires operating room team members incorporating current data about COVID-19 transmission in hospital and non-hospital settings and operating room risk during outbreaks like COVID-19 and Ebola [16]. The guideline aims to create an algorithm that will protect operating room team members who perform urgent and emergency operations for both the COVID-19 and non-COVID-19 patients [17].

LIMITATIONS

The limitations of this study are that it's an online study, therefore participants must be computer and smart phone conversant to actively participate. It is a one centred study and need to be expanded to get adequate assessment and be able to derive a quantitative conclusion. Also, findings cannot be generalized for entire population of surgeons in Nigeria. However, this forms a baseline for further research.

CONCLUSION

Epidemics and pandemics of community infections periodically occur and the challenges abound ranging from health workers to non-health workers. On the part of surgeons, the effects range from disruption of clinical services to personal risks, all amounting to generation of anxiety at work and home. Provision of adequate work resources and development of a working guide can help alleviate such tension and enable them/surgeons discharge their duties close to optimal levels amidst a pandemic.

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