

Social media utilisation by ophthalmic and non-ophthalmic resident doctors in Nigeria

*Kolawole O.U.¹, Isawumi M.A.²

Abstract

Objectives: The use of social media (SM) in medical specialties has not been well studied in Nigeria. Thus, this study compared utilisation of social media between Ophthalmologists-in-training and trainees in other medical specialties.

Methods: Semi-structured self-administered questionnaire was used to collect information on SM use from the participants. Descriptive and inferential statistics (Chi-squared and t-test) were used to analyse the data.

Results: Almost all the respondents had at least one active social media account. WhatsApp and Facebook were the preferred SM platforms among the respondents. Ophthalmologists-in-training usually used SM to access academic resources (77.8%) while other trainees used SM to share information on difficult clinical cases (80.2%). Both groups found WhatsApp and YouTube very useful in their practice. Impediments to realizing the potentials of SM in medical practice included poor internet services (85.5%), poor electricity supply (55.4%), privacy and ethical issues (36.2%).

Conclusion: Most resident doctors in Nigeria are actively using SM for social interactions, professional development and academic pursuits. Its full potentials in medical practice are yet to be utilized. Resolution of crisis in the power sector in Nigeria and provision of internet services in tertiary hospitals in Nigeria would enhance the realization of full benefits of SM in healthcare delivery.

Key-words: Social media, WhatsApp, YouTube, Resident Doctors, Nigeria

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Utilisation des médias sociaux par les médecins résidents ophtalmiques et non ophtalmiques au Nigeria

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Resume

Objectifs: L'utilisation des médias sociaux (MS) dans les spécialités médicales n'a pas été bien étudiée au Nigéria. Ainsi, cette étude a comparé l'utilisation des médias sociaux entre les ophtalmologistes en formation et les stagiaires dans d'autres spécialités médicales.

Méthodes: Un questionnaire semi-structuré, administré par un interviewer, a été utilisé pour collecter des informations sur l'utilisation de la SM par les participants. Des statistiques descriptives et inférentielles (test du chi carré et test t) ont été utilisées pour analyser les données.

Résultats: Presque tous les répondants avaient au moins un compte de réseau social actif. WhatsApp et Facebook étaient les plates-formes SM préférées parmi les répondants. Les ophtalmologistes en formation utilisaient généralement le MS pour accéder aux ressources universitaires (77,8%), tandis que les autres stagiaires utilisaient le SM pour partager des informations sur des cas cliniques difficiles (80,2%). Les deux groupes ont trouvé WhatsApp et YouTube très utiles dans leur pratique. Parmi les obstacles à la réalisation du potentiel de MS dans la pratique médicale figurent les services Internet médiocres (85,5%), le manque d'approvisionnement en électricité (55,4%), le respect de la vie privée et les questions éthiques (36,2%).

Conclusion: La plupart des médecins résidents au Nigéria utilisent activement le MS pour des interactions sociales, un développement professionnel et des activités académiques. Ses potentiels dans la pratique médicale doivent encore être utilisés. La résolution de la crise dans le secteur de l'électricité au Nigéria et la fourniture de services Internet dans des hôpitaux tertiaires au Nigéria permettraient de mieux tirer parti des avantages du MS dans la prestation des soins de santé.

Mots-clés: médias sociaux, WhatsApp, YouTube, médecins résidents, Nigéria

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INTRODUCTION

With increasing penetration of internet and mobile technology, there has been astronomical increase in the use of Social Media (SM) in virtually all spheres of human endeavours ranging from journalism, politics, business, sports to medicine and research. SM platforms have transformed the ways physicians communicate with themselves, and with the public (1). It has been observed that the reach and potential uses of SM in the healthcare sector are enormous if properly harnessed (2). Klee *et al* (3) have also noted that patients' use of SM networking sites for medical information is expanding.

Physicians are increasingly counted among over 1 billion SM users, and Nigerian doctors are not left out. Facebook, the largest SM website has about 1.86 billion monthly active users and 1.74 billion mobile monthly active users at the end of 2016 (4). As at June 2016, there were about 147m active Facebook subscribers in Africa, and 16m Nigerians (second only to Egypt in Africa) were active on Facebook (5). WhatsApp, the second most popular SM networking site also has over 1 billion active users in about 180 countries (6). Twitter ranked 9th among commonly used SM with about 317,000 active users worldwide at the beginning of 2017 (7).

Reports have shown that many physicians, including Ophthalmologists, and their organisations have been taken advantage of novel uses of SM in communication, education, social marketing, advocacy and research. Twitter, for example, has transformed interactions at medical conferences through creation of conference-specific hashtags that allows conference participants to interact and share information on workshops, research presentations and other events at the conferences (8). Participations at such conferences have, thus, been extended beyond those who are physically present at those conferences (9). In the 2012 International Conference on Emergency Medicine (ICEM), for example, about 75% of the tweets were related to clinical and research presentations at the meeting, and only 34% of those who produced the tweets were physically present at the meeting (10). Furthermore, SM are complementing existing traditional training methods for Ophthalmologists. Facebook, Twitter and WhatsApp have been used by some Ophthalmologists to discuss clinical cases while preparing for examinations (11). Social media use in medical practice has inherent dangers

despite the numerous advantages. Many physicians using social media in the US have been accused of professional violations which ranged from inappropriate postings to privacy control problems (12,13). In attempt to prevent this backlash, guidelines for appropriate use of social media by health care professionals have been released by various medical regulating agencies in the US, and trainings on social media use included in the medical curricula of various institutions (14).

The use of social media in Ophthalmology and other medical specialties has not been well studied in Nigeria. A recent study suggested that more than 90% of Ophthalmologists and Ophthalmologists-in-training were active on social media. However, they mainly used the social media for social interactions with friends and relations (15). Are Ophthalmology residents utilizing social media in their practice more than resident physicians in other medical specialties in Nigeria? This study compared the utilization of social media between Ophthalmology resident physicians and residents in other medical specialties. It also described impediments to realization of full potentials of social media in medical practice in Nigeria.

Materials and Methods

Study settings

The West African College of Surgeons and the National Postgraduate Medical College of Nigeria organize annual Clinical Ophthalmology course for resident doctors in Ophthalmology. The Colleges also conduct health resources and management, and research methodology courses for senior residents and other doctors twice a year. Resident doctors who participated in these courses which held in March and July 2015 in Lagos, Nigeria were included in this cross-sectional study. Other non-resident physicians who participated in the courses were excluded. These participants were resident doctors who were undergoing postgraduate medical training in Ophthalmology and other medical specialties in teaching and specialist hospitals in Nigeria. Convenient sampling technique was used in selecting the resident doctors who participated in this study. Consenting resident doctors were recruited into this study after the intent and purpose of the study were explained to them. The study was conducted in accordance with the tenets of 1964 declaration of Helsinki.

Study tool

A semi-structured questionnaire was designed by the investigators for data collection. The questionnaire has four sub-sections dealing with (a) participants' demographic characteristics, (b) social media activities of the subjects, (c) use of social media in medical practice and (d) barriers to realization of full potentials of social media in medical practice. Participants were asked whether they have active social media accounts. Their attitude towards the use of social media in their areas of specialization was also assessed by determining the extent to which respondents agreed with various uses of social media in medicine cited in current literature on a Likert scale (Strongly disagree=1; Disagree=2; Not sure=0; Agree=3; Strongly agree=4). We summed up the responses from each respondent as a surrogate for attitude score. In addition, they were asked about the perceived barriers hampering the realization of the full potential of social media in their practice.

Data collection

Participants were briefed about the purpose and objectives of the study before taking consent from them. The pre-designed questionnaires were distributed among consenting resident doctors and collected back before the end of the respective courses.

Data analysis

Data were entered into Personal Computer and analysed with Statistical Package for Social Sciences (SPSS) software version 20 (IBM SPSS Statistics for Windows, Armonk, NY: IBM Corp.). They were cleaned and subsequently analysed. Descriptive statistics and inferential statistics (Chi squared test and Student's t-test) were done to compare demographic and social media related characteristics of Ophthalmic and non-ophthalmic resident doctors. The significance level was considered as $P < 0.05$.

RESULTS

Characteristics of respondents

One hundred and eighty-seven resident doctors from 37 training centres across Nigeria participated in this study. They comprised 84 Ophthalmology resident doctors and 103 resident physicians from other medical specialties. There were 89 males and 98 female resident doctors. One resident doctor did not disclose his/her gender. The mean age of respondents was 35.0 ± 4.6 S.D. The respondents have been practising medicine for a median period of 8.0

years post-graduation, and they have been in the residency programme for a median period of 3.0 years. They had access to internet for a median period of 5 hours per day. Majority (71.8%) of respondents were Senior Specialist Registrars who had passed Part 1 Fellowship examinations of either or both the National Postgraduate Medical College of Nigeria and the West African Postgraduate Medical College. Most (68.3%) of the respondents accessed the internet through their smartphone wi-fi. Only 40 (21.5%) accessed the internet through their institution or local wi-fi.

There were statistically significant differences between Ophthalmology resident doctors and resident doctors from other specialties in terms of mean age, median year post-graduation, median years in residency and route of access of internet. Ophthalmology residents tend to be younger, spent lesser years post-MBBS, spent lesser years in residency and preferred to access internet through the smartphones compared to resident doctors in other specialties ($p < 0.05$). Resident doctors in other specialties tend to access the internet through modems and cybercafé compared with their Ophthalmic counterparts ($p < 0.05$). However, there was no statistically significant differences in gender and median hours of internet access between Ophthalmology residents and other resident doctors (Table 1).

Social media activities of respondents

All the Ophthalmology residents (100.0%) in the sample had at least one SM account while 98.2% of other resident doctors had signed into at least one SM account. This difference was not statistically significant ($p = 0.50$). A higher proportion of non-ophthalmic resident doctors (63.1%) than ophthalmic resident doctors (59.0%) were accessing their SM accounts on personal computers. Similarly, higher proportions of non-ophthalmic resident doctors than ophthalmic resident doctors were accessing SM accounts on their iPad (30.1% vs. 19.3%) and tablets (48.5% vs. 37.3%). However, a higher proportion of ophthalmic resident doctors (79.5%) than non-ophthalmic resident doctors (67.0%) were accessing their SM accounts on their smartphones. All the differences were not statistically significant ($p > 0.05$) (Table 2).

One hundred and one respondents (53.7%) accessed their SM accounts for at least 5 hours per day. A significantly higher proportion of ophthalmology residents (70.5%) than non-

ophthalmology resident doctors (46.0%) were accessing their SM accounts for more than 5 hours per day ($p=0.001$). The three preferred SM platforms among the ophthalmic resident doctors were WhatsApp (91.6%), Facebook (86.7%) and YouTube (55.4%) while the three preferred SM networks among non-ophthalmic residents were Facebook (89.3%), WhatsApp (87.5%) and Google plus (45.6%) (Table 2). The most important initial reason for opening SM accounts by the respondents was to connect and chat with friends. Although a higher proportion of non-ophthalmic residents (78.6%) than ophthalmology residents (75.9%) initially opened SM accounts to connect and chat with friends, the difference was not statistically significant. Less than a quarter of all respondents initially opened SM accounts for academic or research pursuit (Table 2).

With respect to medical practice, ophthalmology residents most commonly used SM to establish link with journals, textbooks and videos (77.8%), communicate and seek information on difficult cases (72.8%), discuss management of clinical cases (58.0%) and exchange materials to prepare for their examinations (54.3%). On the other hand, non-ophthalmology residents used SM to share information on difficult clinical cases (80.2%), link up with journals, textbooks and videos (60.4%), discuss management of difficult cases (57.0%) and share health information with the public (55.4%). Social media were less used for teaching, social marketing, communicating referrals, participating in conference and collaborating with other researchers in the two groups of resident doctors. The observed differences in the use of SM between ophthalmology and non-ophthalmology residents were not statistically significant. Table 3 shows how the respondents use SM in their practice.

Perception of respondents towards social media

Majority of the respondents (96.3%) felt that SM play some roles in their specialties, and more than 90% of them found SM useful in studying and practicing their specialties. Ophthalmology residents found WhatsApp (44.1%), YouTube (41.2%) and Google plus (36.8%) very useful in their study and practice, while the non-ophthalmology residents found YouTube (40.4%), WhatsApp (39.3%) and Facebook (25.8%) useful in their practice. A higher proportion of ophthalmology residents

(59.8%) compared with non-ophthalmology residents (46.0%) perceived that SM helped them to achieve academic excellence and acquire skills in their training. However, this difference was not statistically significant ($p=0.07$).

Conversely, a statistically significant higher proportion of non-ophthalmology residents (42.0%) than ophthalmology residents (26.8%) perceived that SM reduced their study time ($p=0.03$) (Table 4).

Attitude of respondents towards the use of social media in medical practice

The mean attitude score for all the respondents was 30.3 ± 9.2 SD. Female respondents had slightly greater but statistically insignificant mean attitude score (30.6 ± 9.1) compared to their male counterparts (30.0 ± 9.3); ($t=-0.46$; $p=0.64$). Similarly, younger respondents had higher mean attitude score compared to older resident doctors but the differences were not statistically significant ($p=0.51$). Surprisingly, resident doctors who accessed SM for less than 5 hours per day had higher mean attitude score (31.7 ± 9.1) than those who spent more than 5 hours per day on the SM (29.4 ± 8.7). This difference was also statistically insignificant ($p=0.08$). Resident doctors in other faculties had a slightly higher but statistically insignificant mean attitude score than Ophthalmology resident doctors ($p=0.37$). Senior resident doctors across all faculties had higher mean attitude score (31.2 ± 8.3) than the junior resident doctors (28.2 ± 10.8); ($p=0.05$) (Table 5).

Impediments to realizing the full potential of social media in medical practice

Impediments to realizing the full potentials of SM in medical practice included poor internet services (85.5%), poor electricity supply (55.4%), privacy and ethical issues (36.2%) and lack of alternative electricity supply (33.9%). Other less common barriers were inappropriate use of medical information (26.9%), scarcity of image acquisition devices (19.4%) and lack of policy regulating the use of SM in medicine in Nigeria (16.1%).

A statistically significant higher proportion of non-ophthalmology residents (33.0%) than ophthalmology residents (19.3%) believed that inappropriate use of medical information constituted a barrier to effective use of SM in medicine ($p=0.04$). Similarly, the proportion of non-ophthalmology residents who believed that lack of alternative power supply

was an impediment to realizing the full potential of SM in medical practice was significantly higher than those in ophthalmology ($p=0.01$). However, a significantly higher proportion of ophthalmology residents (27.7%) than non-ophthalmology residents (12.6%) opined that lack of image acquisition devices such as fundus camera, optical coherence tomography constituted a barrier to fully realizing the full potential of SM in their practice ($p=0.01$). Table 6 shows the barriers to realization of the full potentials of SM in medical practice according to the respondents.

DISCUSSION

Nigerian resident doctors were active on the SM platforms, and they were using the platforms to improve their medical practice. The level of SM utilization among Nigerian resident doctors was similar to that reported in a study among family medicine resident doctors in Michigan, United States (3). Although few studies have explored how physicians use the SM platforms in medical practice in Nigeria, the proportion of Ophthalmologists with active accounts on SM platforms in this study was similar to that reported in a study carried out among participants of 2015 Ophthalmological Society of Nigeria annual conference. In that study, Nathaniel and Adio (15), reported that 82 (94.2%) of respondents used SM. However, only 26.5% of the respondents in that study were Ophthalmology resident doctors, the rest were Consultant and Diplomates. Nigerian physicians seemed to prefer WhatsApp and Facebook among the available SM. These SM were the most popular among Nigerians. The initial reason for opening a SM account was similar to that reported by Nathaniel and Adio (15), which was to facilitate social interaction and collaboration with friends. However, the proportion of physicians in this study who found SM useful in their professional activities was higher than that reported by Nathaniel and Adio (59.8%) (15) and Househ (65%) (16).

Digital photography using smartphone camera has made it possible and easy to share clinical cases and discuss them on SM (17). Although this has attendant privacy and ethical issues, it could explain the relatively higher proportion of ophthalmology residents who access the SM on their smartphones compared to other residents. Recently, Ophthalmologists have developed interest in using smartphone applications in conjunction with cell phone cameras and +20-dioptre lens to capture high

definition images of the ocular fundus (18-20). Smartphone technology has helped the ophthalmologists in solving the dearth of image acquisition devices, one of the barriers to realizing the full potentials of SM in medical practice identified by the respondents.

The most important initial reason why Zuckerberg founded Facebook was social interaction among college students. This was why majority in this study initially signed up for SM networking sites. The proportion of respondents who used SM for social interaction and collaboration in this study were higher than 43% reported among participants of 2015 Ophthalmological Society of Nigeria Conference (15). Although, the sampling in the two studies were convenient sampling, findings in this study could be closer to the true situation concerning the use of SM among resident doctors in Nigeria because more Ophthalmology and non-Ophthalmology resident doctors attended the revision courses than the annual conference.

Although very few Ophthalmology and non-ophthalmology resident doctors initially signed up for Facebook, WhatsApp and other SM for academic, professional and research pursuits, majority of the resident doctors later discovered that SM could play vital roles in their academic and professional endeavours. Worldwide, physicians in different medical specialties have discovered that SM would serve as a vehicle for personal and specialty development (21).

It is apparent from this study that Nigerian physicians, particularly the resident doctors have not harnessed the full potentials of SM platforms for professional and academic pursuits. The use of SM for research collaboration, teaching, conference participation and social marketing is not yet very strong. This observation was also noted by Nathaniel and Adio (15). In their study, only one respondent (0.7%) had ever used SM for teleconferencing with professional colleagues. The situation was quite different among their European and American counterparts. Recent studies have demonstrated that SM platforms such as twitter have contributed immensely in communicating research findings and clinical teachings (17,22).

It is gratifying that significant proportion of Ophthalmology residents were using SM while preparing for their examinations. Oliver Findl (11) rightly observed that SM was fast becoming a means of quick exchanges of ophthalmic information and informal telemedicine. It was also a good tool for residents in preparing for examinations as it afforded them

opportunities to exchange images of clinical cases, and allowed online discussion of such cases. Probably, this was why more Ophthalmology residents than their non-Ophthalmic counterpart believed SM has helped them to achieve academic and professional excellence.

Respondents across all specialties had fairly good attitude towards the use of SM in medical practice. Senior residents were probably more experienced and more exposed professionally than junior residents who were still struggling to understand the rudiments of their specialties. This could probably explain why the senior residents had significantly higher attitude score towards use of SM in medicine.

In Nigeria, negative effects of poor power supply on the different facets of her socio-economic development could not be over-emphasized. The energy crisis in Nigeria is the major cause of poor and expensive internet access which respondents observed as barrier to full exploitation of potentials of SM in medicine. Currently, there are no guidelines or policy from the Medical and Dental Council of Nigeria, or any of the postgraduate medical colleges so developed to regulate the use of SM in medical practice in Nigeria. Social media will continue to play active roles in interactions among physicians, and between physicians and their patients as younger generations of doctors who are internet and social media savvy emerge.

Limitations

The setting of this study and convenient sampling approach could prevent the participants and their responses from being true representatives of the resident doctors in Nigeria. This definitely posed a threat to the external validity of the findings of this study.

CONCLUSION

Majority of ophthalmology and non-ophthalmology resident doctors in Nigeria were actively using SM for social interactions, professional development and academic pursuits. Further, there were no significant differences between Ophthalmic and non-ophthalmic resident doctors in the use of SM for these purposes. The potentials of SM in medical practice were yet to be fully harnessed owing to impediments such as erratic power supply and poor internet services in the country. Resolution of crisis in the power sector in Nigeria and provision of internet services in tertiary hospitals in Nigeria would enhance the realization of full benefits of SM in healthcare delivery.

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Conflict of interest: The authors declare no competing interest.

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Table 1: Socio-demographic characteristics of respondents

Variables	Faculty of Ophthalmology No (%)	Other faculties No (%)	P-value
Mean age ±SD (years)	34.3±3.9	37.2±4.7	<0.05
Median years post-MBBS	7.0	8.0	0.03
Median years in residency	2.0	4.0	<0.05
Median hours of internet access	5.0	4.0	0.68
Gender	35 (41.7)	54 (52.4)	0.14
Male	49 (58.3)	49 (47.6)	
Female			
Most frequently used route of Internet access	20 (23.8)	20 (19.6)	0.49
Institutional/Local Wi-Fi	46 (54.8)	72 (70.6)	0.03
Modems	65 (77.4)	62 (60.8)	0.02
Smartphone Wi-Fi	4 (4.8)	19 (18.6)	0.04
Cybercafé			

Table 2: Social media related characteristics of respondents

Variables	Faculty of Ophthalmology No (%)	Other faculties No (%)	P-value
Ownership of Social media account	84 (100.0)	102 (98.1)	0.50
Device used to access Social media			
Personal computers/Laptops	49 (59.0)	65 (63.1)	0.57
Smartphones	66 (79.5)	69 (67.0)	0.06
Ipads	16 (19.3)	31 (30.1)	0.09
Tablets	31 (37.3)	50 (48.5)	0.13
Access to Social media	55 (70.5)	46 (46.0)	0.01
>5hours a day	23 (29.5)	54 (54.0)	
<5hours a day	76 (91.6)	91 (87.5)	0.47
Preferred social media platform	72 (86.7)	92 (89.3)	0.59
WhatsApp	46 (55.4)	45 (43.7)	0.11
Facebook	39 (47.0)	47 (45.6)	0.85
YouTube	33 (39.8)	44 (42.7)	0.68
Googleplus			
Twitter			
Initial reasons for opening a social media account	63 (75.9)	81 (78.6)	
Connect and chat with friends	12 (14.3)	13 (12.6)	
Academic pursuit/skill acquisition	3 (3.6)	4 (3.8)	
News, movie and music	3 (3.6)	-	
Fun and relaxation	2 (2.4)	2 (1.9)	
Promotion of business	1 (1.2)	1 (1.9)	
Research			

Table 3: Use of social media by respondents in their practice

Variables	Faculty of Ophthalmology No (%)	Other faculties No (%)	P-value
Link to journals, textbooks and videos	63 (77.8)	61 (60.4)	0.01
Information on difficult cases	59 (72.8)	81 (80.2)	0.24
Discussion on management of cases	47 (58.0)	57 (57.0)	0.89
Exchange of examination materials	44 (54.3)	54 (53.5)	0.91
Sharing health information with the public	36 (45.0)	56 (55.4)	0.16
Teaching platform	21 (25.9)	37 (36.6)	0.12
Conference participation	19 (23.5)	29 (28.7)	0.42
Research collaboration	17 (21.0)	31 (30.7)	0.14
Communicating referrals	16 (19.8)	28 (27.7)	0.21
Telemedicine	9 (11.1)	14 (13.9)	0.58
Social marketing	4 (4.9)	5 (5.0)	1.00

Table 4: Perception of respondents regarding use of social media

Variables	Faculty of Ophthalmology No (%)	Other faculties No (%)	P-value
Useful in my specialty	76 (90.5)	95 (91.3)	0.74
Positive influence on practice	65 (79.3)	84 (84.8)	0.33
Achievement of academic excellence	49 (59.8)	46 (46.0)	0.07
Reduced study time	22 (26.8)	42 (42.0)	0.03
Negative influence on practice	8 (9.8)	5 (5.0)	0.22
Useless in my practice	3 (3.6)	5 (5.0)	0.65

Table 5: Attitude of respondents towards potential uses of social media in medical practice

Variables	Mean Attitude score (SD)	P-value
Sex		
Male	30.0 ±9.3	0.64
Female	30.6 ±9.1	
Age-groups (years)		
25-34	30.8 ±10.0	0.51
35-44	30.3 ±8.8	
45-54	27.1 ±9.6	
Number of hours of social media access		
<5 hours	31.7 ±9.1	0.08
>5 hours	29.4 ±8.7	
Faculties		
Ophthalmology	29.6 ±10.2	0.37
Others	30.6 ±8.3	
Stage of residency		
Junior	28.2 ±10.8	0.05
Senior	31.2 ±8.3	

Table 6: Barriers to realizing the full potential of Social media in Medical practice in Nigeria

Variables	Faculty of Ophthalmology No (%)	Other faculties No (%)	P-value
Poor internet services	74 (89.2)	85 (81.7)	0.20
Privacy and ethical issues	24 (28.9)	43 (42.2)	0.06
Inappropriate use of medical information	16 (19.3)	34 (33.0)	0.04
Dearth of image acquisition devices	23 (27.7)	13 (12.6)	0.01
Poor power supply	50 (60.2)	53 (51.5)	0.23
No alternative power supply	20 (24.1)	43 (41.7)	0.01
Lack of policy regulating social media use in medicine	13 (15.7)	17 (16.5)	0.88