developing world bioethics

Developing World Bioethics ISSN 1471-8731 (print); 1471-8847 (online)
Volume 13 Number 3 2013 pp 105–110

doi:10.1111/j.1471-8847.2012.00328.x

ARTICLES

ACCEPTANCE AND PERCEPTION OF NIGERIAN PATIENTS TO MEDICAL PHOTOGRAPHY

W.L. ADEYEMO, B.O. MOFIKOYA, O.A. AKADIRI, O. JAMES AND A.A. FASHINA

Keywords
bioethics,
developing world

ABSTRACT

The aim of the study was to determine the acceptance and perception of Nigerian patients to medical photography. A self-administered questionnaire was distributed among Nigerian patients attending oral and maxillofacial surgery and plastic surgery clinics of 3 tertiary health institutions. Information requested included patients' opinion about consent process, capturing equipment, distribution and accessibility of medical photographs. The use of non-identifiable medical photographs was more acceptable than identifiable to respondents for all purposes (P = 0.003). Most respondents were favourably disposed to photographs being taken for inclusion in the case note, but opposed to identifiable photographs being used for other purposes most especially in medical websites and medical journals. Female respondents preferred non-identifiable medical photographs to identifiable ones (P = 0.001). Most respondents (78%) indicated that their consent be sought for each of the outline needs for medical photography. Half of the respondents indicated that identifiable photographs may have a negative effect on their persons; and the most commonly mentioned effects were social stigmatization, bad publicity and emotional/psychological effects. Most of the respondents preferred the use of hospital-owned camera to personal camera/personal camera-phone for their medical photographs. Most respondents (67.8%) indicated that they would like to be informed about the use of their photographs on every occasion, and 74% indicated that they would like to be informed of the specific journal in which their medical photographs are to be published. In conclusion, non-identifiable rather than identifiable medical photography is acceptable to most patients in the studied Nigerian environment. The use of personal camera/personal camera-phone should be discouraged as its acceptance by respondents is very low. Judicious use of medical photography is therefore advocated to avoid breach of principle of privacy and confidentiality in medical practice.

INTRODUCTION

Taking clinical photographs of patients for case presentations, teaching, journal publication and other reasons is a common practice among medical practitioners worldwide. In fact, medical photography forms a vital part of patient records in all specialties of medicine.[1] The use of medical photography is a valuable adjunct to the process of diagnosis, monitoring of disease progression and

[1] S. Prasad & B. Roy. Digital photography in medicine. *J Postgrad Med* 2003; 49: 332–336.

Address for correspondence: Dr W.L. Adeyemo, University of Lagos, Oral and Maxillofacial Surgery, Idi-araba Surulere Lagos 101014, Nigeria, Email: lanreadeyemo@yahoo.com
Conflict of interest statement: No conflicts declared

evaluation of treatment outcome.[2] It is a form of medico-legal document and plays an integral part to both inter- and intra-disciplinary communications.[3] Recent advances in technology have also made possible the sharing of patients' information including photographs across international borders with the aid of telemedicine.[4]

With the advances in information technology and the ease of information sharing, it is opined that a balance between technological possibility and ethical acceptability needs to be struck.[2] In most parts of the developed world, written consent is usually obtained for medico-legal purposes prior to any medical procedures including photography. However, the practice of obtaining consent from patients for medical photography is not well established in Nigeria. Patients need to be informed of the purpose for which their photographs are to be used. In medical practice, privacy of individual patient and confidentiality of patient information should never the violated. Indiscriminate use of patients' photographs violates the ethical principle of 'respect for persons'.[5]

The aim of the study was to determine the acceptability and perception of Nigerian patients to medical photography by surveying patients' opinion and preference on the need for consent process, capturing equipments, distribution and acceptability of their medical photograph.

MATERIALS AND METHODS

A self-administered questionnaire (a modification of questionnaire by Lau et al., 2010)[6] was distributed among patients attending oral and maxillofacial surgery and plastic surgery clinics of 3 tertiary health institutions (Lagos University Teaching Hospital, University of Port-Harcourt Teaching Hospital, and University of Maiduguri Teaching Hospital) in Nigeria. The study was conducted between September 2009 and June 2010 after approval by the Health Research and Ethics Committee. Informed consent was obtained from the participants. Subjects were randomly selected for participation in the study. Participants were instructed to seek clarifications and explanations from the researchers when responding to the questionnaire. Information requested included: patients' acceptance of medical photographs, patients' acceptability of the use of identifiable and non-identifiable photography for different purposes including teaching, presentation, publication and on the internet. Patients' opinions about consent process, capturing equipment, distribution and accessibility of medical photographs were also sought. Patients were also asked about their preference for the use of personal camera-phone, personal camera or hospital camera in taking their photographs. Possible negative effects of the use of identifiable medical photographs were also requested in an open-ended questionnaire. Experience about inappropriate use of medical photographs was requested; and they were also asked to indicate who they wished to have access to their medical photographs. Participation in the survey was voluntary and participants were not compensated for their participation. Data was analyzed using SPSS for Windows version 12.0 (Chicago, IL).

RESULTS

A total of 338 respondents participated in the study. Table 1 shows the characteristics of the respondents. Only 72% (n = 243) agreed to have their photograph taken for medical purposes. Table 2 shows the response of participants to the question: Would you agree to have medical photographs taken for the following purposes?

Table 1. Characteristics of the respondents

Age of respondents	
Mean	32.5 ± 12.2 years
Range	16–79 years
Sex	**Frequency (%)**
Male	142 (42)
Female	196 (58)
Total	338 (100)
Education status	**Frequency (%)**
Primary	27 (8)
Secondary	67 (19.8)
Post-secondary	49 (14.5)
University	195 (57.7)
Total	338 (100)

Table 2. Possible negative effects of identifiable photographs

Negative effects	*Frequency (%)*
Social stigma	69
Unnecessary/bad publicity	25
Psychological/emotional effect	20
Loss of privacy	7
Discrimination	4
Negative effect on career	5
Tool	130 (100)

[2] C.K. Lau, H.H.A. Schumacher & M.S. Irwin. Patient's perception of medical photography. *J Plast Reconstr Aesthet Surg* 2010; 63: e507-e511.

[3] Ibid.

[4] R.B. Karim, J.J. Hage, A.K. Ahmed et al. Digital photography as a means of enhancing interconsultant communication in oncological cutaneous surgery. *Ann Plast Surg* 2002; 48: 180–183.

[5] C.C. Macpherson. Research ethics: beyond the guidelines. *Developing World Bioeth* 2001; 1: 57–68.

[6] Ibid; Lau, Schumacher & Irwin, *op. cit.* note 2.

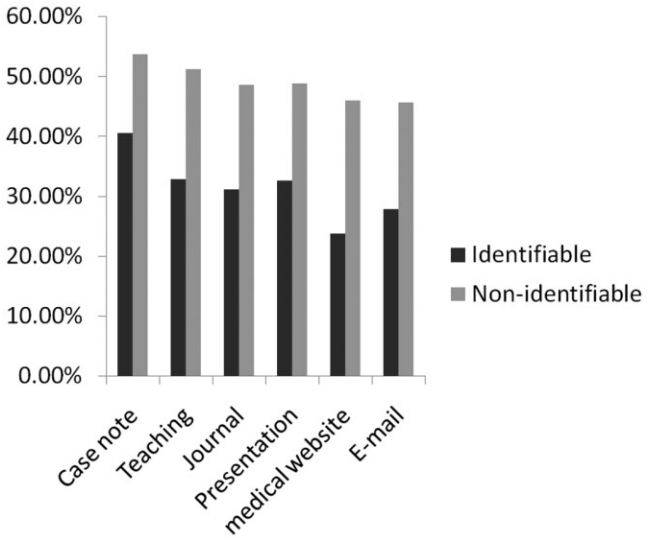

Figure 1. Graph showing differences to respondents' acceptance between identifiable and non-identifiable photographs for all purposes.

The use of non-identifiable photographs was more acceptable for all purposes when compared with identifiable ones (P = 0.003). Overall, 31.5% of respondents approved of identifiable photographs, whereas about half (49.1%) approved of non-identifiable photographs. Female respondents preferred non-identifiable photographs to identifiable ones when compared with male respondents (P = 0.001). Most of the respondents were favourably disposed to their photographs (whether identifiable or non-identifiable) being taken for inclusion in the case notes, but were opposed to their identifiable photographs being used for other purposes, especially in medical websites, medical journals and professional e-mails (Figure 1). In contrast, most of the respondents were in favour of their non-identifiable photographs being used for these purposes (Figure 1).

More than half of the respondents (54.7%) did not want their identifiable photographs in medical websites. An overwhelming majority of the respondents (78%) indicated that their consent should be sought for each of the needs shown in Figure 1. The need for consent was influenced by educational status (P = 0.01), but not by the gender (P = 0.20) of the respondents. Half of the respondents indicated that identifiable photographs may have a negative effect on their persons. Table 2 shows possible negative effects of medical photographs identified by respondents. The most commonly mentioned negative effects were social stigmatization, bad publicity and emotional/psychological effects (Table 2). Most of the respondents preferred the use of hospital-owned camera operated by their doctors to personal camera/personal camera-phone for their medical photographs (Table 3). There was no significant difference in the choice of personal camera and personal camera-phone between males and females (P = 0.84 and P = 0.39 respectively). However, female respondents preferred the use of hospital-owned camera than male respondents (P = 0.033). Regression analysis did not show a significant positive relationship between preferred photographer by the respondents and age (P = 0.07), gender (P = 0.62), and educational status (P = 0.83).

Table 3. Preferred photographic devices and photographers

Preferred device for taking medical photographs*				
	Yes	No	Indifferent	Total
Personal camera phone	21.9	28.7	49.4	100
Personal camera	28.1	23.7	48.2	100
Hospital camera	41.1	18.3	40.6	100
Preferred photographer*				
My attending doctor				56.8
Nursing staff				12.1
Professional photographer				31.1
Total				100

* Values are in percentages.

Most respondents (67.8%) indicated that they would like to be informed about the specific use of their photographs on every occasion, and about three-quarters of respondents (74%) would like to be informed of the specific journal in which their medical photographs are to be published (Table 4). There was no significance difference in the response to the specific use of photographs (P = 0.70) and specific journals in which medical photographs are to be published (P = 0.45) between male and female respondents. Most respondents preferred doctors involved in their care to have access to their photographs, rather than any member of the health team (Table 4). Only about one-tenth of respondents, the majority of whom were females (P = 0.04) have seen medical photographs being used inappropriately. When asked whether they would allow their photographs to be used for illustration purposes to other patients, about 56% indicated 'yes' while 44% indicated 'no'.

DISCUSSION

The art of representing and reproducing medical subjects dates back to 1500 BCE and has encompassed a range of techniques including stone carving, painting, woodwork, copper engraving, sketching, drawing, and anatomical models, photographs, medical imaging and

Table 4. Responses to other questions on medical photography

Should you be informed about the use of your medical photographs on every occasion?		
Yes	No	Indifferent
67.8	18.3	13.9
Would you like to be informed of the specific journal in which your medical photographs are used?		
Yes	No	Indifferent
74.0	10.9	15.1

I prefer the following to have access to my clinical photographs	Yes	No	Indifferent
Doctors involved in my care	83.4	5.3	11.7
Any doctors	28.1	39.1	32.8
Medical students	24.3	41.1	34.6
Other health professionals	24.9	39.3	35.8

Have you ever seen your medical photograph or other patients' medical photographs being used inappropriately?	
Yes	No
10.4	89.6
Would you allow us to use your photographs for illustration purposes to other patients?	
Yes	No
56.2	43.8

computer-generated images.[7] In the 1840's, when photographic technology first became available, a revolutionary change to medical documentation resulted. The earliest surviving clinical photograph was taken by Hill and Adamson in 1847 in Edinburgh.[8] The introduction of photography was intended to add reliability and credibility to the images represented. The use of photography in medicine has a number of benefits. First, medical images can enhance communication between clinicians and their patients, for example to facilitate the process of preoperative counselling, and between medical professionals, in terms of case discussion, teaching, audit and research.[9] Secondly, medical images can improve the patient record with its attendant medico-legal implications.[10]

There is a need to strike a balance between the need for acquisition of medical photographs and protection of patient's privacy and confidentiality. Hence, in most developed nations, guidelines have been developed to guide the process of acquisition, usage and storage of medical photographs.[11] Presently, there are no regulations guiding acquisition, usage and storage of medical photographs in Nigeria. It is hoped that the findings of this survey would help in understanding the perception of Nigerian patients to medical photography; and may also be useful in developing guidelines for the use of medical photography in Nigeria.

Although, more than 70% of respondents agreed to their photographs being taking for medical purposes, less than 50% agreed to medical photographs when specific usage of the photographs was mentioned. The use of non-identifiable photographs was more acceptable for all purposes when compared with identifiable ones. Respondents were more comfortable having their photographs included in their case notes than for any other purposes, especially medical websites, medical journals and professional e-mails. However, more respondents preferred their photographs to be used for other purposes if it was in a non-identifiable format. This finding is similar to that of a survey carried out among plastic surgery outpatients in the United Kingdom.[12] It is important to understand that identifiable photographs do not solely apply to images involving the patient's face, but also applies to images displaying any identifiable features such as jewellery, tattoos, skin lesions and scars.[13] It is human nature to try and preserve our own privacy,[14] therefore not surprisingly patients in the present study much preferred the use of non-identifiable photographs.

A majority of the respondents (78%) in the present study indicated that their consent should be sought for each of the needs for medical photograph. The principle of informed consent is a fundamental rights in both clinical research and clinical practice; and more recently in medical photography, in order to protect patients/research subjects privacy and confidentiality.[15] Current internationally accepted medical publishing practice requires that every effort be made to obtain informed consent and that patient information and pictures that may identify the individual be omitted if the patient has not provided consent, or if it is non-essential for the purpose of the publication.[16] In cases where the identifying information or image is essential, and its publication was not authorized by the patient, every effort should be

[7] J. Tsafir & A. Ohry. Medical illustration: from caves to cybercafé. *Health Info Lib J* 1997; 18: 99–109.

[8] K. Macfall. A notable anniversary in the history of medical illustration. J Audiov Media Med 1997; 20: 5–10.

[9] Ibid; Karim, Hage, & Ahmed AK et al., op. cit. note 3.

[10] Karim, Hage, & Ahmed et al., ibid; D. Taylor, E. Foster, C.S.J. Dunkin & A.M. Fitzgerald. A study of the personal use of digital photography within plastic surgery. *J Plast Reconstr Aesthet Surg* 2008; 61: 37–40.

[11] Ibid; Taylor, Foster, Dunkin & Fitzgerald, *op. cit.* note 7; General Medical Council. Making and using visual and audio recording of patients. London: GMC; 2002.

[12] Ibid; Lau, Schumacher & Irwin, *op. cit.* note 2.

[13] Ibid.

[14] Ibid.

[15] Lau, Schumacher & Irwin, ibid; Taylor, Foster, Dunkin & Fitzgerald, ibid; T. Macintosh. Ethical considerations for clinical photography in the global south. *Developing Worlds Bioeth* 2006; 6: 81–88.

[16] Ibid; Macintosh, *op. cit.* note 15.

made to remove identifiable features.[17] The General Medical Council in United Kingdom published a guideline on visual and audio recording of patients.[18] The guideline stipulates that permission and consent should always be obtained from patients for any use or disclosure. Adequate information for the purpose of the recording must be provided prior to consent. Patients' privacy and dignity should not be compromised under any circumstances. In addition, further consent is required for any use outside the scope of the original consent and patients have the right to withdraw their consent at any time.[19] It is also recommended that the storage of patient's recordings must be well secured.

The fact that educational status affected the need for consent prior to acquisition and use of medical photograph in the present may be due to the fact that respondents with higher education status are more informed and knowledgeable about their rights than those with lower educational status.

Half of the respondents in the present study indicated that the use of their identifiable photograph in the public domain may have a negative effect on their persons; the most commonly indicated effect was 'social stigmatization'. Clinical photography is a form of medical record that produces a recognizable image of a patient that may be instantly recognized by a lay person.[20] Living in a society where individuals with medical conditions are discriminated against, the identities of the subjects in these photographs must be protected. One way of achieving anonymity in facial photography is to place a black bar across the eyes of the subject. It is generally acknowledged that complete anonymity through black bar placement is difficult to guarantee as this method is seldom an effective way to disguise the identity of the subject.[21] Hence, some authorities have advocated that instead of employing this imperfect method of disguising identities, efforts should instead be focused on obtaining the patient's consent for the use of the image in its unedited form.[22]

Recognizing that these images provide valuable educational opportunities, but at the same time that the subjects of the photographs may be disadvantaged precisely because of the focus of the photograph, guidelines for the use of identifiable pictures have been established in North America and Europe and accepted by international medical bodies.[23]

In the present study, most respondents preferred the use of hospital camera, rather than personal camera/personal camera phone for the acquisition of their medical photographs. In addition, they preferred their attending doctors take the photographs rather than professional photographers. These responses may be a reflection of the fact that respondents are confident that their privacy and confidentiality are better protected through acquisition of medical photographs by their attending doctors using hospital camera. With the increased availability of digital cameras there is an increased tendency for clinicians to take digital photographs of patients' themselves.[24] However, the use of personal camera should be discouraged as respondents' acceptance of personal camera is low. Most respondents who participated in a survey by Lau et al.[25] also preferred the use of hospital camera to personal camera. Respondent's lack of acceptance to personal capturing equipment such as cameras and camera-phones indicated their anxiety to the potential unethical use of their medical images.[26] In an ideal situation, all clinical images should preferably be captured via the medical photography department; unfortunately this is not always feasible in clinical practice.[27] This is especially so in an era where individuals can easily acquire and operate digital camera.

Aside from the fact that most respondents in the present study embraced the concept of informed consent in medical photography, most of them wanted to be informed of the use of their photographs on every occasion and also wanted to be informed about the specific journal in which their photographs are to be used. In accordance with the principle of 'respect for persons' in clinical research, some peer-reviewed journals stipulate that clinical pictures must be accompanied by signed informed consent.[28] Although a large number of academic journals do not require informed consent for clinical pictures, they stipulate that all identifiable parts of subjects' body be depicted anonymously.

Only a few respondents claimed to have seen clinical photographs they thought had been used inappropriately. Although specific inappropriate use was not indicated by these respondents, inappropriate use of clinical photographs is both a breach of patients' confidentiality and a violation of patients' privacy, and should be discouraged. Inappropriate usage of clinical photographs

[17] Ibid.
[18] Ibid; General Medical Council, *op. cit.* note 8.
[19] Ibid.
[20] M. Nylenna & P. Riis. Identification of patients in medical publications: need for consent. BMJ 1991; 302: 1182.
[21] W.E. Slue. Unmasking the Lone Ranger. New Eng J Med 1989; 321: 550–551.
[22] Taylor, Foster, Dunkin & Fitzgerald, ibid; Macintosh, ibid; C.C. Gilson. Ethical and legal aspects of illustrative clinical recordings. *Br J Hosp Med* 1994; 52: 225–229.
[23] General Medical Council, ibid; Macintosh, ibid.
[24] Taylor, Foster, Dunkin & Fitzgerald, ibid.
[25] Lau, Schumacher & Irwin, ibid.
[26] Ibid.
[27] Ibid.
[28] Macintosh, ibid.

is more likely to occur with the use of personal camera than hospital-owned camera.[29]

It is noteworthy that most respondents would allow their clinical photographs for illustration purposes to other patients. This observation was also recorded in a previous study in the United Kingdom.[30] The implication of this finding is that respondents appreciate the importance of the incorporation of clinical photographs into patient education.[31]

CONCLUSIONS

Medical photography, especially in non-identifiable format, is acceptable to most patients in the studied environment. The concept of informed consent for every mode of photographic usage is also embraced by the respondents. The use of personal camera/personal camera-phone should be discouraged as its acceptance by respondents is very low. Judicious use of medical photograph is therefore advocated to avoid breach of principle of privacy and confidentiality in medical practice. Efforts must be made to protect the identity of patients especially when using medical photographs for publication purposes. In addition, a specific policy on confidentiality, consent, copyright and storage of medical photographs needs to be formulated in the studied environment.

[29] Taylor, Foster, Dunkin & Fitzgerald, ibid.
[30] Lau, Schumaker & Irwin, ibid.
[31] Ibid.

Biography

W.L. Adeyemo, BDS, FMCDS, FWACS, PhD, FICS, is an Associate Professor in Oral and Maxillofacial Surgery, Faculty of Dental Sciences, College of Medicine, University of Lagos, Nigeria.

B.O. Mofikoya, MBBS, FMCS, FWACS is a Senior Lecturer in Plastic Surgery, Faculty of Clinical Sciences, College of Medicine, University of Lagos, Nigeria.

O.A. Akadiri, BDS, FWACS is a Senior Lecturer in Oral and Maxillofacial Surgery, Faculty of Dentistry, College of Health Sciences, University of Port Harcourt, Nigeria.

O. James, BDS, FMCDS is a Lecturer in Oral and Maxillofacial Surgery, Faculty of Dentistry, University of Maiduguri, Nigeria.

A.A. Fashina, BDS, is Registrar in the Department of Oral and Maxillofacial Surgery, Lagos University Teaching Hospital, Nigeria.