

Clinical Photography in Dermatology: Perception and Behavior of Dermatologists – A Pilot Study

Abstract

Background and Aims: Clinical photography is a vital component of patient care in dermatology. Casual sharing of images over social media is a common practice among the clinicians. We performed this study to assess the perception and behavior of dermatologists toward clinical photography. **Materials and Methods:** A questionnaire having 10 questions was prepared using an online survey platform and the link to it was shared in a dermatologists group using the WhatsApp application. Among questions, nine were multiple choice type while the tenth was open ended. Some of the questions allowed multiple responses and answering all the questions was not mandatory. Resultant data was analyzed using Chi-square test for categorical variables and unpaired *t*-test to compare quantitative variables. **Results:** A total of 119 dermatologists participated in the study. Most respondents used personal smartphone (72.9%, 86/118) for imaging followed by digital camera (27.9%, 33/118). Monitoring the disease process (83.9%, 99/118) and research publications (51.6%, 61/118) were the commonest reasons for photography. Except one all participants had shared images and most commonly in professional WhatsApp groups (86.3%, 101/117) and to personal WhatsApp number (31.6%, 37/117). Patient consent for photography was duly recorded by very few (14.4%, 17/118). More than half (52.3%, 56/107) responded monitoring of the disease as the single most important application of clinical photography in dermatology. **Conclusion:** Adequate awareness regarding appropriate usage and safekeeping of gadget meant for imaging and necessity of obtaining written consent for taking as well as sharing the images and secure storage of the images was found to be lacking.

Keywords: *Clinical photography, consent, social media, WhatsApp*

Introduction

Dermatology is a medical specialty where most of the diagnoses are made with visual observation. Like in many other medical specialties, in dermatology too clinical photography has become an integral part of standard care.^[1,2] Australian Medical Association defines clinical image as any photo, video, or audio recording not just restricted to the patient's body but also investigation report, diagnostic image, and prescription of medication.^[3] Recent advances in digital technology including fast and affordable internet, email, and smartphones have revolutionized clinical photography.^[1] It is widely being used for documenting changes in pathology or healing process over time, as an effective communication tool, to make accurate and timely diagnosis, and as the most accurate tool in medical record.^[1,4]

The misuse of clinical photography has become an area of growing concern.^[2] Obtaining valid informed consent from patients, maintaining adequate medical records, and providing secure systems for data storage helps clinicians to ensure patient confidentiality and maintain a sound patient–clinician therapeutic partnership as well as protecting practitioners from possible disciplinary and legal action.^[5] Studies have reported deficiency of knowledge regarding legal and ethical considerations of clinical photography among healthcare professionals.^[1] The present study was undertaken to assess the perception and practices among dermatologists regarding clinical photography during their routine dermatology clinical consultations. The results of the study can help in identifying possible gap in the knowledge and also in planning educational activities if necessary.

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Materials and Methods

Pretested semi-structured questionnaire was used as study tool for data collection. Questionnaire was prepared by researchers after going through extensive review of literature and in consultation with experts. Face validity was checked by statistician before administering the questionnaire. Questionnaire covered various essential domains such as storage, feasibility, frequency, and utility of clinical photography. A questionnaire with ten questions assessing the perception and behavior regarding clinical photography among dermatologists during routine patient care was prepared using the website www.surveymonkey.com, an online survey platform [Table 1]. The link to the questionnaire was shared only with dermatologists from various states of India who were members of a closed dermatology group on “WhatsApp” a widely used multiplatform internet based instant multimedia messaging application. Among these ten questions, nine were multiple choice type while the tenth was an open-ended question. Some of the questions allowed multiple answers and answering all the questions was not mandatory. Data obtained was entered into Microsoft Excel (Windows 7; Version 2007) and analyses were done using the Statistical Package for Social Sciences (SPSS) for Windows software (version 22.0; SPSS Inc, Chicago). Association between variables was analyzed by using Chi-square test for categorical variables and unpaired *t*-test was used to compare mean of quantitative variables after checking the data for normality by using Shapiro-Wilk test. Analysis of variance and Kruskal-Wallis test were used to compare mean of quantitative variables having more than two categories following normal distribution and non-normal distribution, respectively. Level of significance was set at 0.05. Approval from the institutional ethics committee was obtained on 05/02/2020.

Results

A total of 119 dermatologists participated in this study and responded to the questionnaire. Only one question [Q. No. 5, Table 1] was answered by all the participants. Majority of the respondents (72.9%) used their personal smartphone for taking patient photographs followed by digital camera exclusively kept for the purpose (27.9%) [Table 2]. Some of the participants used multiple devices. The most common reason for taking the photos was to monitor the disease process (83.9%) followed by research publications (51.6%) [Table 2] and more than half of the participants (52.1%, 61/117) on an average had more than 100 images stored at any given time. Nearly half (48.7%, 58/119) of the respondents occasionally shared the images seeking opinion or advice from the peers whereas 26% (31/119) did it often, 7.5% (9/119) very often, and 16.8% (20/119) rarely. Only one participant never shared the images. Participants most commonly shared the images in professional WhatsApp groups (86.3%) followed by personal WhatsApp

number (31.6%) and personal e-mail (23.9%) [Table 2] and most of the respondents (81%, 94/116) did not disclose the identity of the third party to the patients with whom the image was shared.

Patient consent for taking images was obtained verbally by about 72% of the participants, 14.4% routinely recorded in the clinical record, and another 14.4% considered implied consent [Table 2]. The photographs were stored most commonly on personal computers (49.1%, 56/114) followed by the clinic/hospital computer (32.4%, 37/114) and external hard drive (18.4%, 21/114). Three (3.42%, 3/114) respondents stored images in their personal smartphone. Majority of the participants stored the images patient-wise (46.2%, 49/106) followed by disease-wise (44.3%, 47/106) and subject-wise (9.4%, 10/106). A large majority of the participants (52.3%, 56/107) responded monitoring of the disease as the single most important application of clinical photography in dermatology.

Discussion

Clinical photography has become an integral part of routine dermatology practice including general dermatology, cosmetic dermatology, and dermatologic surgery.^[4] Its applications can be considered therapeutic and non-therapeutic and include monitoring disease process and response to treatment, surveillance of at-risk patients, maintenance of reliable and objective medical records, and academic purposes such as teaching, presentation in conferences, and publications.^[4-6]

Personal smartphone was the most commonly used gadget for clinical photography among the study participants. It is preferable to use a separate device other than personal smartphone for clinical photography. The main reason for taking the images was for monitoring the disease process. If not used carefully and rationally, clinical photography can create ethical and legal troubles to the clinician and psychological problem to the patient.^[4] Informed written consent, issues related to confidentiality and security while storing the images, and publication and distribution of clinical images are some of the crucial concerns. The digital images tend to be easily and widely distributed through the internet. The de-identification of patient information in writing is extremely easy as physicians may omit the name or use pseudonym and other readily identifiable information whereas visual nature of photographs brings a new level of uncertainty concerning the physicians' ability to protect the patient confidentiality.^[4] Several popular medical mobile applications use patient images and currently such apps are not subject to formal regulation or stringent peer review even in advanced countries.

It was believed that if the patients willingly position themselves for a photograph it can be considered implied consent from the patient and enough for routine treatment.

Table 1: The questionnaire sent to the study participants

Q. No.	Question	Answer
1	What is the equipment used?	Personal smartphone Personal digital camera Smartphone kept exclusively for clinic Digital camera exclusively kept for clinic
2	What is the average number of images stored at any given time?	<10 10-50 51-100 >100
3	What are the main reasons for clinical photography?	To gain advice from peer consultant To share with colleagues For teaching purposes For treatment Disease monitoring purposes For research publications Others
4	How do you share pictures with colleagues for advice or opinion?	WhatsApp group Group e-mail Facebook group Personal Facebook account Personal WhatsApp account Personal e-mail Other
5	How often do you share pictures with colleagues for advice or opinion?	Very often Often Occasionally Rarely Never
6	Do you routinely disclose to the patient the identity of third party with whom the image was shared?	Yes No
7	Consent for photography	Verbally Routinely recorded in the clinical record Written consent Patients sharing images with you that they themselves had taken prior to the consultation Expressed consent Implied consent
8	Where do you store the images?	External hard disk Personal Computer Hospital/Clinic Computer Other
9	How do you store the images?	Subject wise Patient wise Disease specific Other
10	In your opinion what is the one important "Application of clinical photography" in Dermatology?	

With increasing legal and ethical complexities in the medical field it is argued that there is need for consent specifically for clinical photography as well.^[7] Only about 12% of the respondents in our study obtained written consent for clinical photography. Majority (72%) obtained consent verbally while only about 15% routinely recorded the information of consent obtained in the case-sheets.

Obtaining written consent from the patient prior to taking images as well as sharing them with a third party is mandatory. The consent at the least should include details of purpose of photography, disadvantages to the patient related to treatment outcomes if photography not done, and explanation of security and confidentiality. Although it is possible and most practical to include consent for clinical

Table 2: Distribution of participants according to the response given to some of the questions

Question	Answer	Response (Percentage)
What is the equipment used? (<i>n</i> =118)	Personal smartphone	86 (72.8%)
	Personal digital camera	17 (14.4%)
	Smartphone kept exclusively for clinic	9 (7.6%)
	Digital camera exclusively kept for clinic	33 (27.9%)
	Chi-square test, <i>P</i> <0.001, significant	
What are the main reasons for clinical photography? (<i>n</i> =118)	To gain advice from peer consultant	52 (44.07%)
	To share with colleagues	58 (49.1%)
	For teaching purposes	56 (47.4%)
	For treatment	47 (39.8%)
	Disease monitoring purposes	99 (83.9%)
	For research publications	61 (51.6%)
	Others	13 (11.01%)
	Chi-square test, <i>P</i> <0.001, significant	
How do you share pictures with colleagues for advice or opinion? (<i>n</i> =117)	WhatsApp group	101 (86.3%)
	Group e-mail	11 (9.4%)
	Facebook group	8 (6.8%)
	Personal Facebook account	2 (1.7%)
	Personal WhatsApp account	37 (31.6%)
	Personal e-mail	28 (23.9%)
	Other	3 (2.5%)
	Chi-square test, <i>P</i> <0.001, significant	
Consent for photography (<i>n</i> =118)	Verbally	85 (72.03%)
	Routinely recorded in the clinical record	17 (14.4%)
	Written consent	14 (11.8%)
	Patients sharing images with you that they themselves had taken prior to the consultation	3 (2.5%)
	Expressed consent	15 (12.7%)
	Implied consent	17 (14.4%)
	Chi-square test, <i>P</i> <0.001, significant	

photography within the standard clinical consent for a procedure, it is strongly recommended that an independent consent is used.^[4]The patient need to be reassured that the patient care will not be affected by the refusal to consent, the patient may withdraw the consent for any or all use of the images at any time and the patient should be clearly informed that once the images have been published they are a part of the public domain and may be impossible to remove.^[4]

Medical images of patients can usually be taken in such a way as to avoid their identification by others, however in dermatology this is often difficult, for example, skin lesions on the face or unique tattoos, scars, and body piercings.^[5]The minimum possible area of the body required should be photographed and all measures should be taken to de-identify the patient.^[1]In our study 99% of the respondents shared the images with peers seeking advice although with varying frequency. Majority shared the pictures through the WhatsApp application in closed dermatologist groups followed by personal numbers. The Professional Conduct, Etiquette, and Ethics Regulations by erstwhile Medical Council of India (MCI) and followed by the present National Medical Council (NMC) states “A registered medical practitioner shall not publish

photographs or case reports of his/her patients without their permission, in any medical or other journal in a manner by which their identity could be made out. If the identity is not to be disclosed, the consent is not needed.”^[8]These regulations were last amended in October 2016 and do not mention anything about sharing images for other than research purposes such as on social media. The major social media platforms used in India such as WhatsApp, Facebook, Instagram, YouTube, and Twitter also do not have any specific policies concerning the sharing of clinical images.^[9]Most participants (81%) did not share the identity of the third party with whom the image is shared while the rest disclosed it to the patient. The clinicians receiving images for a second opinion are also bound by the same ethical and legal regulations as those taking the images.^[10]

Now more or less all the journal and textbook publishers insist for a patient consent form before accepting images for publication, irrespective of images that identify or de-identify the patient. It is often helpful to show the patient the image that will be used beforehand so that they can see what will actually appear in print. Patient response to photography will inevitably vary depending on their medical condition, age, sex, and the environment in which they are photographed. A large number of patients continue

to give consent for publication of the image despite specific discussion of the potential availability of the image on the internet.^[7,11] It is recommended that a copy of the consent form be given to the patient and that the form include a contact number that can be used in the future, should the patient or family wish to withdraw their consent. Sharing of clinical images without patient consent is professional misconduct and may lead to removal of the clinician's name from the medical registry and permanent ban from practice and in addition may incur imprisonment of two years and fine of up to rupees one lakh.^[8,12]

Nearly half of our study participants stored more than 100 images at any given time. The photographs were stored most commonly in personal computers followed by the clinic/hospital computer and external hard disk drive. Since the clinical images may need to be stored for a long time, precautions should be taken to prevent access by unauthorized individuals to prevent their misuse. The images should be stored for shortest possible duration in the personal mobile devices and should be secured with passwords.^[5] Most digital cameras do not have the option of a password protection and the captured images should be transferred to a safer device at the earliest.^[5] Personal devices with cloud storage abilities should preferably have it turned off or ensure extra security for the cloud storage account to avert unwanted access. Computers and external hard disk drives used for storing the images should also be protected with passwords. Some health-care centers are providing clinicians with work mobile phones to aid in the security of photographs and to ensure correct storage and disposal.^[1] Individual private practitioners should preferably use a separate work phone or digital camera instead of personal phone for clinical photography. The after care, storage, and management of the stored data is best managed by a central unit, such as the medical records or photography department of the hospital.^[13] To avoid unauthorized access it is recommended to store images only when must, delete as and when possible, and always protect the device with a strong security password.

Limitations

A small sample size, lack of compilation of demographic details of the participants, and failure to answer the full questionnaire by all but one of the subjects are limitations of our study.

Conclusion

The participants were found to take and share clinical images through social media applications routinely for different purposes. However, awareness regarding appropriate usage of the gadget for imaging and necessity of obtaining properly documented consent prior to taking as well as sharing the image with a third party was found to be lacking in a large number of the subjects. A

training program within the medical education curriculum and regular sessions as a part of conferences with latest updates will better equip the students and clinicians regarding clinical photography and its medicolegal implications.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Declaration of patient consent statement is not applicable for this study and will not be a part of the text

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Conflicts of interest

There are no conflicts of interest.

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