

Evaluation of the Effectiveness of Still Photography Vs. Videography Friendliness of Stakeholders about Antenatal Care Related Education Provision at OBG OPD, PGIMER, Chandigarh

Abhijeet Singh¹, Amarjeet Singh², Seema Chopra³, Sukhpal Kaur⁴, Kirthana Nair⁵

¹Ph.D. Research Scholar, Singhania University
^{2,3,4,5}PGIMER, Chandigarh

1. INTRODUCTION

The scenario of medical education, both under- and post-graduate, has drastically changed in modern era. In general, teaching has also been vastly transformed by the rapid advent of information technology (IT). Computer applications, internet, power-points and mobile phones have changed the ways and means of teaching. Over last 20-30 years, syllabi and course curriculum have also changed in medical colleges as per the advice of Medical Council of India (MCI).

Even our 3rd National Health Policy has emphasized the need to address the issue of emerging technologies. Moreover, 21st Century has been said to belong to IT and Bio-technology. In this context, the Medical Photography unit of medical institutions is set to re-invent itself.

For every medical college (with 100 seat admission capacity), MCI advocates a Central photographic and audiovisual sections with accommodation for studio, dark room, enlarging and Photostat work. It also advises accommodation shall be provided for Artist and Medical Illustrators and Modelers. Provision of facilities for microphotography and mounting is also mentioned. In addition MCI says, "There shall be a Medical Education Unit or Department for faculty development and providing teaching or learning resource material."

Hence, there is a definite need to rethink the role and scope of Medical Photography units in medical institutions. This has become all the more relevant in context of the recent Health Promotion movement in the discipline of Public Health. As per this concept, present era is of 'patient empowerment'. As per Health Promoting Hospital concept patients and their families should be involved more and more in self-care. This approach has a vast potential of reducing the burden of doctors and nurses in OPD / wards through education of patients and their caregivers.

1.1 Medical Photography

Medical photography is a specialized area of photography that concerns itself with the documentation of the clinical presentation of patients, medical and surgical procedures, medical devices and specimens from autopsy⁷. The practice requires a high level of technical skill to present the photograph free from misleading information that may cause misinterpretation. The photographs are used in clinical documentation, research, publication in scientific journals and teaching⁸. Medical photographers document patients at various stages of an illness, injuries and before and after surgical procedures. They record the work of healthcare professionals to assist in the planning of treatment and education of the public and other healthcare professionals. The nature of the work requires a respect for and sensitivity to people, an awareness of sterile procedures and an adherence to privacy legislation and policies. A few of these provided services to the medical-legal profession. Medical photographers photograph patients in clinics, wards and in operating rooms. They may also be called to photograph an autopsy and gross specimens in the pathology department. Specialized photography techniques using photomacrography and ultra-violet and fluorescence photography may also be used. The role of the medical photographer has changed over the years from being exclusively medical to incorporating more general photography of a commercial or editorial nature to support public relations and education.

1.2 Video Production

Video production is playing an increased role; medical photographers are often responsible for video conferencing from operating rooms and are involved in tele-medicine. Departments employing medical photographers tend to number five people or less. Some medical photographers specialize in areas such as ophthalmology and dermatology.

Photography plays an essential part in documenting medical procedures. It's little surprise then that a professional specialist trained to capture this information, known as a medical photographer, exists. They are tasked with taking photographs that aid physicians and other specialists in diagnosing and treating all sorts of ailments and illnesses. Ideally, a medical photographer will have photography experience and medical knowledge.

Since olden times, illustrations have been used to describe the human body in medical texts. Open any book of human anatomy, physiology or pharmacology, and it'll be replete with images of body organs in health and disease. These images form the very basis of educating medical practitioners. The first application of photography to medicine appears in 1840, when Alfred Donné of Paris photographed sections of bones, teeth, and red blood cells using an instrument called the microscope-daguerreotype. He began making daguerreotypes through a microscope. Donné published engravings made from photographs by his student Léon Foucault. Hugh Welch Diamond, a physician and founding member of the Royal Photographic Society, used photography as a tool in medicine, particularly in the field of mental illness. The first book on medical photography was *La Photographie Médicale*, published in France in 1893. With improvement in photographic technique, illustrations in medical texts were increasingly replaced with photographs. Soon, doctors began to use photographs to document clinical cases for publication of their findings as well as to aid diagnosis. Today, most hospitals have a full-time medical photographer amongst their staff, whose role is to photograph any medical condition the doctor may require as well as to archive the photos and maintain a searchable database. Such a database, along with patient case history, forms a valuable resource of extremely relevant information.

Medical photographers have historically straddled the role of artist and documenter, helping to propagate these incredible visual tools. Today, utilizing photography to share images, track disease, consult for expert opinions, or educate students is ordinary. Its application has burgeoned to include digital photography, telemedicine, 3D-imaging, mole mapping, and more, each with their unique technicalities and significance. From an upside-down, fleeting image to a high-resolution digital file, medical photography and its technologic breakthroughs have come a long way in a flash.

Medical photographers capture a broad range of medical procedures. Photographers in this field typically need a college degree, supplemented with medical knowledge and photography field experience. Those skilled at photography who also have an interest in medicine may want to give this career a closer look.

Medical photographers, who fall under the category of scientific photographers, record a variety of medical data through the use of photography. This requires knowledge of scientific procedures, photography techniques and the proper use of equipment. Medical photographers must also maintain good hand-eye coordination to ensure clear photographs.

A medical photographer uses her or his photography knowledge, along with medical content knowledge, to perform on-site photography services required for surgical and clinical procedures. Often, this includes using photography for reproducing radiography images, creating photographs for reconstructive surgeries, producing educational slides and documenting operating room procedures. Medical photographers rely on digital cameras and computer software programs to edit their images. They may be required to edit client images taken from pre-operative and post-operative evaluations. Therefore, staying abreast of recent software editing trends is important.

Clinical photographs in journals and textbooks are vital to illustrate a clinical finding, or an operative step or a postoperative result, thereby enriching and livening up the mundane words of text. Photographs are important for both medical record keeping and medical education, but have you ever stopped and pondered what does the patient get out of it? Is it not a one-way process in which the clinicians reap the benefit and the patient's interest are hardly of concern? Are we not treating the patients like an interesting case, an unusual finding, rather than living and feeling human being? Are we aware that an informed consent is required for clinical photography just like any other procedure?

Privacy of the patient and his/her health condition is nonnegotiable in the 21st century. Health information is considered amongst the most sensitive and personal information that individuals possess. Just as patients must be able to trust their doctors with their lives and well-being, they should also be able to feel more than reassured that their health records are safe with the clinician. Besides caring for our patients, we must respect their dignity and privacy and protect their confidential information.

Photographs of patients are generally obtained within the doctor-patient relationship. This is particularly in Plastic Surgery where they form part of the patient's medical record, making them subject to this duty of confidence. Under any civil law, we are responsible for their confidentiality. Any confidential or personal information that is disclosed by a patient during consultation or obtained during clinical examination lies within the strict parameters of doctor/patient relationship, and can be used only for the purpose for which it was disclosed, unless the patient agrees otherwise. Patients' photographic/video records too are confidential documents and need to be respected similarly. Patients have autonomy over their bodies, and therefore, have the right to make their own decisions on medical treatment and allow subjecting themselves to photography/video filming. They also have the right to know for what purpose these will be used in future.

1.3 Purpose of Medical Photography

Science is a systematic and logical study of the world around us. And key to such a study is proper documentation of our observations, especially in the field of medicine, as improperly recording one's findings could lead to incorrect diagnosis with disastrous consequences for the patient. A picture speaks a thousand words, and hence, a photograph of a medical condition would do more justice than a verbose description. The person responsible for producing clinical images of patients or of disease conditions is known as a medical photographer. Medical photographers are responsible for producing accurate and objective images that truthfully record injuries, disease and the progress of operations and medical procedures. Medical photography serves three main purposes:

- (i) Education/teaching/training/demonstration.
- (ii) Publication and documentation
- (iii) Diagnosis
- (iv) Research and Development
- (v) Evaluation of improvement in patient condition as documented through photography
- (vi) Others

2. OBJECTIVE OF THE STUDY

To evaluate the effectiveness of Still Photography Vs Videography vis a vis friendliness of stakeholders about antenatal care related education provision at OBG OPD, PGIMER, Chandigarh.

All the enrolled patients were given a demonstration and provision of the information through Still Photography Vs Videography and about how they will receive instructions.

The respondent asked about three comprehensive level, degree of friendliness with the medium of instructions etc.

Comparison was made for still photography vs Videography based education.

First a self-administered, semi-structured questionnaire was developed to document Still Photography Vs Videography friendliness of stakeholders about antenatal care related education provision. The questionnaire was pre tested among 1 Doctor, 1 Nurse and 5 antenatal patients attending OBG OPD, PGIMER.

After finalizing the questionnaire 100 antenatal cases, 10 doctors (JR/SR/Faculty) and 10 nurses were recruited to document their Still Photography Vs Videography friendliness.

This was administered to the subjects after exposing them to the two modalities of the education strategies. This will be done by the investigator in the separate, independent room in gynae OPD under supervision of a doctor.

3. ETHICAL CONSIDERATION

The beneficiary of the study were primigravida women in terms of enhancing self care through Still Photography Vs Videography on maternity preparedness and communicating with the investigator via Still Photography Vs Videography.

- Clearance will be taken from institute ethics committee of PGIMER, Chandigarh.
- Permission will be taken from Head Dept. of Obstetrics & Gynecology, PGIMER, Chandigarh.
- Informed written consent will be taken from participants.
- Confidentiality of data will be maintained

4. DATA ANALYSIS

Data has é analyzed using descriptive and inferential statistics using SPSS.

Data presentation will be done in forms of figures and table, percentage, mean, s.d., paired t-test, χ^2 test.

Table-1: Comfort level of respondents in using mobile phone associated features (Group-A) (N=49)

Features	Mean (\pm SD) scores	Min. score	Max. score
Downloading pictures	7.0 (1.2)		
Audio/Video messaging	6.9 (1.3)	5	10
Video calling	6.8 (1.4)	3	10
Mobile camera	7.0 (1.5)	3	10
Cam scanner	6.8 (1.5)	3	10
YouTube videos	7.1 (1.3)	4	10
Website browsing	6.8 (1.4)	4	10
Hospital appointment booking	6.0 (1.9)	4	10
Online banking	5.6 (2.1)	3	10
Bill payment	5.7 (2.0)	2	10
Using e-mail	6.5 (1.9)	2	10
Cab booking	6.0 (1.8)	2	10
Online shopping	6.2 (1.9)	3	10
Social media app	6.8 (1.6)	3	10
		4	10
Mean overall score	89.8 (23.3)	45	140

Table-2: Comfort level of respondents in using pictorial booklet (Group-B) (N=50)

Features	Mean (\pm SD) scores	Min. score	Max. score
Matches understanding level	6.9 (0.8)	5	9
Technical content	6.9 (1.0)	4	9
Logical sequence of text	6.8 (1.0)	4	9
Continuity of text	6.7 (1.1)	4	9
Language understanding	6.7 (1.2)	4	10
Simple with less jargon	6.7 (1.4)	4	10
Understanding of diagrams and pictures	8.1 (1.2)	5	10
Font	6.6 (1.1)	5	10
Handiness (easy to carry for students)	6.1 (1.2)	3	10
Is not loaded with unnecessary information	6.1 (1.1)	3	10
Permits self-learning	6.3 (1.2)	3	10
Take home message	6.5 (1.4)	3	10
Practical value	6.8 (1.2)	3	10
Mean overall score	87.4 (12.5)	50	126

Overall mean (SD) score for comfort level in using mobile phone associated features was 89.8 ± 23.3 the scores ranged from 45 to 140 suggesting a high variability.

Overall mean (SD) score for comfort level in using pictorial booklet features was 87.4 ± 12.5 the scores ranged from 50 to 126.

Table-3: Information technology Friendliness (Still photography vs. videography)

Variables	Group-A (N=50)	Group-B (N=50)
Computer ownership, n (%)		(N=49)
Yes	29 (58.0)	24 (48.9)
No	21 (42.0)	25 (51.0)
Frequency of computer use, n (%)	(N=28)	(N=29)
Several times a day	9 (32.1)	7 (24.1)
Once a day	4 (14.2)	10 (34.4)
Several times a week	10 (35.7)	6 (20.6)
Once a week	2 (7.1)	2 (6.9)
Rarely/Never	3 (10.7)	4 (13.7)

Use of internet, n (%)	(N=45)	(N=40)
Yes	19 (42.2)	16 (40.0)
No	26 (57.7)	24 (60.0)
Frequency of internet use, n (%)	(N=22)	(N=22)
Several times a day	14 (63.6)	8 (36.3)
Once a day	5 (22.7)	6 (27.2)
Several times a week	1 (4.5)	7 (31.8)
Once a week	1 (4.5)	1 (4.5)
Rarely/Never	1 (4.5)	0 (0)
Type of internet, n (%)		(N=40)
High speed access	14 (28.0)	8 (20.0)
Modem	2 (4.0)	1 (2.5)
Mobile internet	34 (68.0)	31 (77.5)
Expenditure on internet (Rs.), mean (SD)	(N=49) 438.4 (170.4)	(N=48) 388.7 (143.2)
Sources for learning about pregnancy related illnesses and symptoms, n (%)		
Doctors	7 (14.0)	24 (48.0)
Written leaflets	7 (14.0)	0 (0)
Books	6 (12.0)	0 (0)
Other printed media, like newspaper	6 (12.0)	0 (0)
Websites	6 (12.0)	0 (0)
Videos	6 (12.0)	0 (0)
Relatives and friends	6 (12.0)	22 (44.0)
Others	6 (12.0)	4 (8.0)

Higher proportion of participant in Group A had computer ownership, Participant in Group a were more frequently using computer (several times a day) compared to Group B.

Participant in group A were more frequently using internet.

Mean (SD) expenditure =430.4 ± 170.4

Participant in Group A were equally told about a variety of sources for learning about pregnancy related illness and symptoms, whereas in Group B participants, majority of participant relate on doctors and relatives and friends for information.

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