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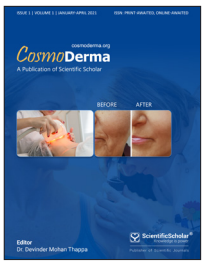

Editorial

Tips and tricks in clinical photography in dermatology

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Photography means "drawing with light." It came into existence in the early 19th century. Subsequently, three advances in photography were of color photography, portable camera, and digital camera. The incorporation of digital photography in the cellular phone (2000–2010) dramatically advanced photography further. Digital photography has really changed the way images can be taken and stored in clinical dermatology.

A digital camera has a set of lenses that focus light to make an image of an object which is stored on a semiconductor device in the form of electrical charges. In conventional cameras, it is captured on a film which is being processed later on. The resolution of the camera (details captured on camera) is measured in pixels. Regarding the quality of photos, the digital "Single-lens reflex" (SLR) cameras (costly and bulky) are better than the typical compact ("point-and-shoot" at the cost of lack of manual adjustments for aperture size, shutter speed, and flash intensity) cameras. Available these days with functional capabilities between a simple, compact camera, and a digital SLR are intermediate (bridging) cameras which are affordable.

Digital photography is primarily obtained with digital cameras, smartphones with digital cameras, or the video dermatoscope in dermatology. It is the visual nature of dermatological conditions that make photography so valuable for the dermatology practice. A right digital photograph brings into focus the skin and a good history is generally sufficient for a dermatologist to make a correct diagnosis.

Why do we need photography in dermatology? It is necessary for record purposes, maintenance of a registry of cases for future reference, for teaching purposes, to obtain the second opinion, to share with the pathologist, to measure treatment outcome, for diagnosing and monitoring cases in follow-up, to determine patterns, for research, and publication, rare diseases can be captured, for teledermatology in COVID-19 pandemic, and for creating diagnostic tools under artificial intelligence.

Before taking a photo, take first permission and consent of the patient, take a picture in a deidentified manner, if not possible, cover eyes, hide identifying elements such as glasses, jewelry, and hairstyle, and take signed consent of the case.

Ideally, broad daylight or natural light in the room would be the best. Flash or other light sources may be required for our indoor photography. Other tips for creating images of lasting quality are:

1. Two key elements in any photography are correct exposure, and accurate focus
2. By placing the patient in front of a plain wall or cloth sheet (black, sky blue or green), we may remove background distractions
3. Elimination of distractions from the patient also results in a better quality photograph
4. The vertical or horizontal orientation of the picture in relation to the affected body part is another critical aspect

5. Avoid distortion in photographs taken by zoom in and then going back to bring the object in focus in the digital cameras
6. Avoid zooming in beyond the halfway point on the slider; otherwise, the image will disintegrate in digital cameras
7. A suitable background for a fair-colored patient is black and for dark skin, sky blue, or green
8. Before and after photographs should be taken in the same settings. Patient sitting and posture, background, lighting, and camera settings should be kept the same
9. Select the "macro" mode for close-up shots. Put a measuring tape in the frame for the size of the lesion
10. Try to have distinctive elements of skin lesions, patterns, and distribution from a typical representative lesion
11. To improve diagnostic yield and to enhance the quality of the photo, use dermatoscopy to capture images
12. Remember, several reasons compromise the quality of the image, and they are underexposure, if distortion occurs, lesion not framed correctly, and there are background distractions
13. A dedicated room with set lighting and background adds to the excellent quality images
14. If possible, a professional photographer in teaching and research institutions is an asset.

In most journals, online submissions of photos are in the Joint Photographic Expert Group (JPEG) format as the standard. The clear benefit of the JPEG format is that the image size can be compressed considerably. The drawback of tagged image file format files, a default industry standard vis-à-vis JPEG, is bigger file size. Other standard formats used for storage include the Portable Network Graphics, BMP (windows bitmap), and Graphics Interchange Format.

We need to standardize imaging acquisition techniques in dermatology in terms of camera orientation, patient positioning, and image requirements (such as lighting, background, field of view, focus, resolution, and image orientation) to conform to international standards and thus will increase the clinical and research value of digital photographs.

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