

Clinical Images in Dermatology Manuscripts — A Study of Journal Submission Guidelines

Abstract

Background: Images are an important element of any scientific publication, more so for a very visual specialty such as dermatology. Dermatology journals generally include detailed instructions related to images submitted with the manuscripts, including technical aspects such as file format, resolution, and editing. We aimed to review and critically analyze instructions for images in the top 50 dermatology journals [as per the latest Clarivate journal citation report (JCR) ranking]. **Methods:** The top 50 journals as per the latest Clarivate JCR were included in the study. Instructions for images were reviewed for each of the journals. The main points analyzed included file type, resolution, size limits, editing limits, support for post-processing of images and details regarding patient consent. **Results:** Only half the journals (25) had clear, detailed, and specific instructions for the images. Only one journal specifically mentioned pixels per inch (PPI) as the descriptive term, and the remaining used dots per inch (DPI), whereas 6 did not mention either. Twenty-three journals did not mention the recommended size of the image. The most common minimum resolution mentioned was 300 DPI (41 journals). Although 24 of the journals mentioned editing limits, none of the journals elaborated on image plagiarism in the instructions. Twenty-one of the fifty did not mention a clear policy on patient consent. **Conclusions:** Image submission guidelines for dermatology journals need to be made more elaborate yet easier to understand. Developing a consensus, followed by standardization of these submission guidelines, can help both authors and journals.

Keywords: *Clinical images, consent, dermatology images, journal instructions, resolution, scientific publication*

Introduction

Images are a crucial part of dermatological publications. Manuscripts can get rejected based on the quality of images alone. A general assumption for resolution is that a minimum of 300 dots per inch (DPI) is sufficient for publication purposes. However, more often than not, journal instructions do not elaborate on this concept in sufficient detail. Authors sometimes need more clarity regarding some of the related aspects—DPI vs pixels per inch (PPI)—are these the same? Other questions which need to be addressed include the following: is it acceptable to change the resolution? How to change to the recommended DPI? How to factor in the image size when changing the resolution?

Other issues authors need to consider include limits of ethical editing and improving parameters such as exposure, sharpness, contrast, and editing

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backgrounds. Some journals do give generic advice regarding these points but it is debatable if these instructions are really useful to the submitting authors. Patient consent is another area which suffers from a lack of uniformity. Whereas some journals require consent irrespective of whether or not patient identity is compromised, some journals require explicit consent only if there are identifying features.^[1,2]

This study aimed to review instructions for images in the top fifty dermatology journals indexed, and having an impact factor, as per the 2020 Clarivate journal citation report (JCR).

Materials and Methods

We examined the guidelines for images in the top 50 dermatology journals having an impact factor in detail as per the Clarivate JCR 2020. The instructions were obtained from the respective journal websites. Some

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journals which gave links for general image guidelines from their publishing group were also analyzed.

The instructions were reviewed for the following points:

1. Recommended file type
2. Minimum resolution (in DPI/PPI)
3. Detailed explanation regarding the minimum resolution
4. Specification of size (inch/cm, width/height)
5. Mention on limits of editing/unethical editing/image plagiarism
6. Samples of what constitutes a “good” publication - quality image
7. Useful links regarding imaging quality and how to improve the same within the limits of acceptable post-processing
8. Image processing support offered by the journal
9. Details regarding patient consent for images
10. Any specifications regarding maximum file size.

Results

Of the 50 journals included in the study, half (25) had dedicated, specific instructions and guidelines for image submission. Eleven (22%) had specific instructions and an additional link to the general instructions from the publisher. The remaining 14 (28%) only had general instructions from the publisher site.

Only one journal specifically mentioned PPI as the descriptive term. Of the remaining, 43 (86%) mentioned DPI, whereas 6 (12%) did not mention either. Forty-one (82%) of the journals mentioned 300 DPI as the minimum resolution, whereas two journals mentioned 350 DPI, and one as 300 PPI. The rest did not specifically mention resolution. Only 7 (14%) of the journals elaborated on what exactly DPI/PPI means. Twenty-three (46%) journals did not mention anything specific with regards to image size/dimensions.

For the file types, the most commonly recommended types were tagged image file format (TIFF) (46, 92%) and joint photographic expert group (JPEG) (39, 78%) format. Of these, 6 (12%) insisted on TIFF only. Three (6%) of the journals did not mention any specific file type. Three (6%) accepted portable network graphics (PNG) and bitmap (BMP) formats, and 2 (4%) accepted graphic interchange format (GIF) and RAW formats also.

Twenty-four (48%) mentioned editing limits, whereas the rest did not elaborate on this aspect. None of the journals elaborated on image plagiarism in the instructions.

Only two journals had useful links related to imaging/clinical photography. Twenty-one (42%) gave links for image processing support (paid services from the publisher), and 14 (28%) gave sample images for better understanding of ideal image quality.

Regarding patient consent, 21 (42%) did not have clarity on explicit consent requirements. Five (10%) journals

mandated consent for all images, irrespective of the presence or absence of identifying features. The remaining 24 (48%) required explicit consent in case of recognizable images.

Eighteen journals (36%) mentioned specific size limits for the image file, of which 12 mentioned a limit of 10 MB for each file and a total limit of 500 MB for all the images. Two of the journals specified the need for separate source files for images more than 10 MB.

Discussion

Images are an essential part of dermatological publications. Key factors determining image quality, in the context of publication, include resolution, exposure, focus, zoom, color, and distractions.

The default output in most point-and-shoot digital cameras, including smartphone cameras, is JPEG. As long as the other parameters, such as resolution, are sufficient, good-quality JPEG images should be sufficient for both online and print formats. It would be easier from the authors' perspective if the requirement across journals could be standardized to just high-quality JPEG images.

As far as resolution is concerned, the digital camera output basically gives a fixed set of pixels. Therefore, in effect, what is more important is the PPI. The image resolution basically refers to how much detail an image has. Resolution may be measured in different ways, the most popular ones being PPI and DPI. Although DPI and PPI both describe resolution, DPI refers to print density on paper, whereas PPI describes pixel density on the screen.^[3] The number of original pixels is fixed. If we increase the screen size or printing size, the resolution will go down and vice versa. It is therefore important to understand that although DPI and PPI are often used interchangeably, in reality, they are not the same. The ideal usage in journal instructions should be PPI and not DPI, but in our study, only a single journal used this terminology. This would especially be important as most of the readerships these days use a soft copy and not the actual printed version.

The PPI can be changed using any image editing software. However, it is important to not change the number of actual pixels in the image (something referred to as “resampling”). Therefore, if we change an image which is originally 72 PPI to 300 PPI, the number of actual pixels remains the same, so the image size will be reduced (in terms of width/height) to accommodate the higher density of pixels. However, if we choose to resample, the software will change the number of pixels itself (although now we have a 300 PPI image with a larger height/width; this might actually affect the quality of the clinical image, and hence, resampling has to be avoided for clinical images). Increasing the resolution after the picture has been taken may result in a loss of image quality and may constitute unacceptable image alteration.^[3]

What does all of this mean for the authors submitting their images? The total pixel count in the images depends on the capacity of their camera (and settings). It is difficult to find a camera nowadays with a resolution of less than 10 megapixels, so discussions related to lower megapixels are moot. A megapixel is a million pixels. For example, an image from a camera taken with dimensions of 3600 (w) × 2400 (h) = 8,640,000 pixels, that is, 8.6 megapixels. Now, this total pixel count will be the same, no matter what the PPI is. The only difference is that with 72 PPI, this will translate into an image size of 127 cm × 84 cm, whereas at 300 PPI, this translates into 30.4 cm × 20.3 cm. We can retain the higher height/width dimensions by resampling, but this will affect the quality of the final image.

As seen in our results, most journals require submission at 300 DPI. Ideally, all journals should specify not just resolution but also the size of the image (that the image should not show significant pixelation at 300 PPI at a certain standard size—like a width of 5 inches) and that the original resolution must not be increased digitally to achieve 300 PPI. The majority of the journals in our study however did not specify this. Also, the issue that probably needs to be stressed is not only the process of changing to 300 PPI but also the need to avoid resampling. Although close to half the journals in our study did mention general ethical limits of image editing, none actually specifically mentioned resampling. Also, 46% did not mention anything regarding the image size itself. Some journals which did mention size required sending images at 300 DPI at a 100% print size. Here, the problem is that the authors are usually not really sure of what the final print size is going to be, and therefore, it would be pertinent to specifically mention the ideal size along with the resolution.

Authors would also find it useful to have examples of what constitutes a “good” image (and possible “poor” images too), along with the instructions. In addition, links to useful resources with details regarding image quality would be helpful. Similar to services for improving language, image-related services would be a valuable add-on that journals could provide, especially for some edits such as removing background distractions (again what are the limits of ethical editing need to be laid out clearly as is the need to mention what constitutes image plagiarism and consequences of the same).^[4]

Patient consent for photography is another area that needs standardization, especially for dermatological images. Medico-legal regulations related to patient autonomy are also important in clinical photography, especially in the context of teledermatology.^[5] The safest way forward would be to ensure consent for all clinical images. However, this begets the question of consent for other images—such as dermoscopy, histopathology, or radiology images. A middle path would be mandatory consent in the case of any

identifiable feature (with a recommendation to err to the side of caution when in doubt).

Another area, which needs addressing is the number of images. Some journals still seem to be imposing a rather harsh limit on the size of the files (in terms of MB). Considering the very high resolution and corresponding larger file sizes offered by cameras these days, it might be prudent to be a bit more generous in this regard. The restriction in images for print journals is understandable, while online journals ideally should have no reason to restrict the number of images. Also, instead of insisting on composites or collages, it might make more sense to just send individual images initially and then choose and finalize formatting later if and when the manuscript is accepted.

Our suggestion is to use a standard guideline for clinical images in dermatological journals. Important aspects would be clear, specific statements on resolution, also specifying the minimum image dimension for that particular resolution (we would suggest high-quality JPEG at 300 PPI, without any significant pixelation at a minimum width of 5 inches), consent requirements (we would suggest explicit consent for any image with identifying features), and image samples (good and bad).

To conclude, imaging is key in dermatology in general and more so in the context of scientific publication. Our study indicates a lack of clarity and standardization with respect to image quality parameters as indicated in the submission guidelines of various journals. Developing a consensus, followed by standardization of these submission guidelines can help both authors and journals.

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Conflicts of interest

There are no conflicts of interest.

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