Editorial

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A new role of biometrics in preventing fraudulent clinical effects reporting

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In a recent article, Baik et al.,[1] demonstrated that technologies like Photoshop can be used to fabricate clinical treatment results to sensationalize the results and attract more future patients. With alopecia treatment, for example, the authors revealed various and detailed techniques of how to manipulate photos, especially the photo pairs comparing before and after the hair transplant surgery.[1] I admit that the methods introduced in the article are intriguing; an exposé like this is always intriguing.

I talked to my colleague physicians about this and heard even spicier stories: Although rare, some such pre- and post-treatment photo pairs are taken from different people. One colleague said, "Generally, the treatment effect is defined as the difference in the condition of interest before and after treatment. Using a picture of an alopecia patient for pre-treatment and a person with rich hair for post-treatment photos is blatant but done secretly by a few caregivers to forge impressive results for advertising purposes. In addition, with the use of a 'hair double,' one can see immediate results, unlike with the authentic way that takes months to show the improvement." My colleague did not forget to add that this might be just an urban legend, and I believe so too. However, there is food for thought in this hopefully imaginary semi-criminal scenario. Unfortunately, everything that can happen will happen, and from my experience, anything that is profitable for somebody tends to occur; it is usually only a matter of time.

Such concern led me to ponder a new way to prevent fraudulent clinical effects reporting with bogus patients, and I propose applying biometrics as at least a partial solution to verify that the before and after treatment results are from the same patient.

Originally, biometrics referred to a rather broad concept involving any metrics related to human characteristics and the application of statistics to them. This concept still holds, and will hold, but at this writing, biometrics is often used as a synonym for biometric identification. Fingerprint and DNA for criminal investigation are classic and familiar examples. However, many more personal characteristics are being used as identifiers, such as the voice, iris, retina, and palm veins. Employing these metrics once required huge analysis machines and experts to operate each of them, but that is no longer the case. If you are using a decent smart phone, you can find a fingerprint scanner to gain access and make Internet transactions. Some laptops and tablet PCs already have a built-in facial recognition function and can tell who is using the machine. Thus, the regulars from sci-fi movies now reside in our daily lives. So, why not use them to authenticate treatment effects for patients?

Doing so is completely feasible: As a simple example, we can collect a patient's biometric identifiers when measuring both the before condition and the after-treatment effect. Then, while presenting the effect, we can put forward the biometric authentication result as evidence of truth in the reporting. Since each clinical field has already formed a professional association at the country or regional level, the association can accredit the 'authenticity' of the biometric verification. In addition, guidelines or rules that mandate this biometric identification can be promulgated and enforced, just as some academic journals have developed their own guidelines for submitting photos to prevent manipulation.[2]

Some might argue that those who have already sold their soul will eventually find a blind spot in biometrics and, therefore, such fraud-proofing endeavor is meaningless. The first half is true: People will find a weakness in whatever biometric authentication is in use. However, I do not agree with the last half. The logic in the argument is exactly the same as in "developing a stronger shield is useless because the enemy will eventually develop a sharper spear that can penetrate the shield." Therefore, we must be diligent in continuously evolving our shield and not indulge in learned hopelessness. To me and for now, biometric identification is a great method that can easily be applied to verify treatment effectiveness results with minimum resource investment. There is no reason not to take advantage of it.

I know it is not comfortable to discuss how to surveil our colleague caregivers, most of whom are devoted to providing high-quality care for patients. The feeling of being a suspect is never good. However, such surveillance can help honest care givers avoid unnecessary and groundless accusations and clear their names. Fortunately, we already have ready-to-use biometrics at hand, and thus staying in the status quo might be an abrogation of responsibility. It is time to take action.

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Conflict of interest

None.

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