A New Role of Biometrics in Preventing Fraudulent Clinical Effects Reporting

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 concerns 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 both the before condition and the after-treatment effect are provided, we can compare the two. If they are not the same, then the manipulation is exposed. Moreover, 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.

Convinced by this logic, I decided to implement biometric identification in a local clinic. The response was overwhelming, as patients were not only satisfied with being authenticated but also felt a sense of security knowing that their data was protected. However, the biggest challenge was to overcome the initial resistance from the caregivers. I realized that education and communication were key to their acceptance. Today, biometric identification is standard practice in our clinic, and we have not experienced any cases of fraudulent clinical effects reporting.

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Conflict of Interest
None.

References