



## G10 Evaluating a Selfie Identification App in the Forensic Dental Identification Process

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After attending this presentation, attendees will possess a deeper understanding of how social media and smart phone applications could become a valuable investigative tool in the search for antemortem identifying data.

This presentation will impact the forensic science community by increasing awareness concerning how images of the smile and of anterior teeth could be used in the human identification process.

There are several applications for smart phones that assist in the search for missing persons. Selfie Forensic ID App, developed in 2017 by a forensic odontologist, is the first application developed with the goal of assisting the human identification process using smile photographs archived on the internet, thus increasing the antemortem dental data that can be used in comparison to the postmortem dental data of an unidentified person. Forensic casework portrait photographs are often used in the human identification process using superimposition techniques.

The goal of this presentation is to evaluate the Selfie Forensic ID App by simulating a search of selfie images of potential missing persons taken with the app and that are available on Twitter®, Tumblr®, and Instagram™. The app can be freely downloaded in iOS® and Android™ formats. Selected patients regularly visiting the dentist in Matera and Bari, Italy, were asked to participate voluntarily in this experiment. Fifty patients were selected for their specific and potentially individualizing anterior teeth features that were observable when smiling, such as diastema, rotated or wrongly positioned teeth, fixed prosthetics, or dental crown discolorations. Each of the participants downloaded the app and took a selfie image of the lower third of the face showing the teeth. Registration with name, surname, city, and country is required in order to use the app. Alternatively, users can login via their Facebook® or Google+® profile. Once taken, the selfie images were uploaded to various social networks with the registered names. All patients selected also had a separate portrait photograph taken with a professional camera. After some hours, all selfie pictures taken via the app were available via internet image searches using the names of the persons involved, simulating a missing person search.

The app is able to increase quantity and quality of selfie images of the lower third of the face showing anterior teeth and identifying features combined with the name of the person being searching for. Dental variations and characteristics can become an aid in the comparison process of antemortem and postmortem “matches,” thus confirming or excluding the identity of one or more individuals.

It is believed that this new app will promote, to the public, the importance of storing personal identification data in social media in order to avoid bodies remaining unidentified.

### **Selfie, Identification, Forensic Odontology**