



Ergonomic and design evaluation of face shields manufactured by 3d printing

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The fourth industrial revolution presents a set of technologies that are significantly changing the way individuals and organizations develop their activities on a daily basis. Popularly known as 3D printing, additive manufacturing has been widely used worldwide for the manufacture of face shields against COVID-19. This project aims to evaluate aspects of ergonomics and design in facial protectors from the variation of 3D printing parameters (printing speed, extrusion temperature, filling density and 3D printer filament properties). To this end, combinations of variations between the 3D printing parameters will be defined, afterwards the face shields will be manufactured and assembled in the ISECENSA makerspace. A sample composed of health professionals who will use face shields daily will be defined and, after construction of the data collection instrument, these professionals will be responsible for answering the survey. As a result, it is expected (i) to identify whether the 3D printing parameters variation is perceived by health professionals from aspects of aesthetics and comfort, and (ii) to verify if such variations interfere in the productivity and daily performance of these professionals. Personal protective equipment is proven to be effective in coping with COVID-19. The impact of the protection actions will be greater as these equipments becomes more comfortable and has a pleasant aesthetic.

Palavras-chave: [3D printing], [Face shield], [Ergonomics].

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