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EDITORIAL

New technologies and diagnostic tools in Optometry

Nuevas tecnologías y herramientas de diagnóstico en Optometría

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According to the European Council of Optometry and Optics (ECOO)[1] Optometry is defined as ''a health care profession that is autonomous educated and regulated (licensed/registered); Optometrists are primary health care practitioners of the eye and visual system who provide comprehensive eye and vision care, which includes refraction and dispensing, detection of disease in the eye, and the rehabilitation of conditions of the visual system''.

It is evident that the quality of service provided by an optometric practice is a function of Optometrist's clinical skills and the provision of state-of-the-art instrumentation facilities. The pace of technological and scientific development is much faster today than it was 50 years ago. In the past, when an innovative idea was proposed by a scientist or clinician it was usually followed by a lengthy period of development before any direct application was attempted. This relatively long transitional period allowed widespread discussion of the idea before any practical application was attempted, so that any outcome could be smoothly integrated into clinical practice. In contrast, today's academic and commercial pressures frequently force premature publication and exploitation of new ideas, methods and therapeutic interventions. Thus, the optometrist should be equipped with cutting-edge technology to diagnose, evaluate and manage any ocular pathologies or approaches that promise to recover visual performance.

Keratoconus management and presbyopia treatment form the most characteristic examples, with a wide choice of surgical and non-surgical approaches available to help the patient. During the last 10–20 years, we have become witnesses of a multiplicity of new surgical procedures/technologies/materials that have been promoted to cease keratoconus progression[2,3] or to correct presbyopia by restoring active accommodation.[4] In order to assess the relative efficacy of each procedure and to establish the best treatment pattern among them, it is important to carry out comparative evaluations of visual performance using standardised behavioural tests, such as visual acuity and contrast sensitivity or other more elaborated psychophysical procedures.[5,6] In addition, various objective computational techniques[7,8] coupled with imaging of the eye[9] have become a rapidly advancing field in ophthalmology, enhancing both clinical practice[10,11] and research. They form a complementary way to assess visual performance since they provide a better insight by distinguishing optical changes (e.g. pupil diameter, lens movement, higher-order aberrations) to other neural/behavioural factors which may also influence ''real-world'' visual experience. Finally, ocular parameters, such as intraocular pressure, can nowadays be monitored by less invasive but precise techniques, which consider the potential influence of corneal biomechanical properties on its measurement.[12]

The wide range of established new technologies for imaging the eye and assessing visual performance can bridge the gap between theoretical/scientific interpretations and patients' needs, satisfaction and complaints, offering to the eye care practitioner an ongoing search for improved methods of rehabilitation and diagnosis.

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