Half of online eyeglasses fail Rx or safety specifications

November 9, 2011

People who purchase prescription eyeglasses online, in many cases, are not getting the products they ordered, according to a new study by a panel of eye care researchers and eyewear industry experts.

Nearly half of prescription eyeglasses sold directly to consumers online either do not meet prescription specifications or fail accepted safety standards, according to "Safety and compliance of prescription spectacles ordered by the public via the Internet," a study in the September edition of *Optometry: Journal of the American Optometric Association*.

In many cases, eyewear is shipped with features the purchaser did not want or without features the purchaser ordered, the study finds.

The study, conducted by Karl Citek, O.D., Ph.D., of the Pacific University College of Optometry, with a team representing virtually all major eyewear industry and standards-setting organizations, found:

- More than one in every five pairs of eyeglasses sold online was not delivered as ordered, with features added or omitted.
- In more than one in four (28.6 percent) of the eyeglasses, one or both lenses were out of tolerance with at least one important parameter of an optical prescription.
- In almost a quarter (22.7 percent), one or both lenses failed the U.S. Food and Drug Administration's (FDA) impact-resistance requirement.
- About one in every 16 pairs of eyeglasses sold online failed tests for both adherence to prescription specifications and safety, and
- Overall, some 44.8 percent of spectacles failed to meet either prescriptions specifications or impact-resistance requirements.

The researchers received and evaluated 154 pairs of spectacles, consisting of 308 lenses. The eyewear was obtained when 10 individuals ordered two pairs of spectacles from each of 10 of the nation's most popular Internet vendors, totaling 200 eyewear orders.

Spectacles ordered consisted of ranges of lens and frame materials, lens styles, and refractive corrections reflecting current distributions in the United States.

Evaluations included measurement of sphere power, cylinder power and axis, add power (if indicated on the prescription), horizontal prism imbalance, and impact testing.

Until now, eyeglass wearers have rarely encountered the types of problems found in the survey, thanks to multiple-level product inspections in eyewear production facilities and careful checking of prescriptions in vision care practices prior to dispensing, Dr. Citek and his research team noted.

"For more than a century, the traditional channel for distribution of prescription spectacles to the public has involved trained professionals, such as opticians. Orders could be fulfilled directly, if the (eye care) practice has finishing capability, or forwarded to a manufacturing laboratory. In either scenario, lenses would be manufactured with parameters to meet impact-resistance requirements. The spectacles also would be verified to ensure that their optical properties meet the visual requirements of the prescription and that they are within acceptable tolerances. The patient then would return to the practice to receive the spectacles, where final fit adjustments of the frame could be made. In this manner, the active, personal, "hands-on," dispensing process could protect the patient from spectacles that might not meet applicable requirements," Dr. Citek wrote in his summary of the study.

"From a manufacturing perspective, it can be labor- or cost-prohibitive to create products with 100 percent accuracy or 100 percent quality control pass rate," said Daniel Torgersen, technical director for the Optical Laboratories Association (OLA). "The ophthalmic lens industry includes not only lens and frame manufacturers but also prescribing and dispensing doctors and opticians, who often function in a final quality control capacity before a patient is actually provided with eyewear."

"We believe that the dispensing process remains a vital and necessary step in the manufacture and delivery of eyewear to best ensure the health and safety of patients who wear spectacles. Members of the public who engage in the purchase of eyewear without an active, personal dispensing process by a trained professional might not receive a product of equal performance, value, or safety," the researchers concluded.

Ophthalmic devices, such as lenses, frames or complete pairs of eyeglasses, are manufactured in line with voluntary industry standards for optical parameters and certain physical attributes (such as center thickness and base curve) established by the American National Standards Institute, as well as federal guidelines for impact resistance, notes study co-author Robert Rosenberg, O.D., a State University of New York State College of Optometry professor who, like Torgersen, has helped to develop industry standards as a member of the ANSI Z80 Committee.

A 1999 OLA study found approximately 25 percent of the eyeglasses manufactured by laboratories for the traditional dispensing model fail tolerance for at least one optical parameter, a figure comparable to the failure rate of 28.2 percent found among online eyeglass retailers.

However, a review conducted by the Optical Manufacturing Association and OLA on behalf of an ANSI Z80.1 subcommittee found the majority of optical failures in the traditional model are identified during secondary inspections before they leave the optical laboratory manufacturing site.

As a result, no more than about 2 percent are returned to manufacturers by eye care practices or optical shops after delivery.

Rigorous inspection at both the manufacturer and dispensary level is critical to trouble-free spectacle wearing, according to Jeffrey D. Endres of The Vision Council, the optical industry's dominant trade organization.

The researchers did not investigate the prevalence of secondary inspection among online eyeglass retailers.

They also did not investigate the return policies of online retailers or the amount of expense or time entailed in returning defective eyewear to online vendors.

"The results of this study show that regardless of cost, spectacle eyewear ordered without the benefit of a dispensing process can come with significant risk of error in providing the correct type of lenses needed or ordered," the researchers concluded.

"It is common practice for eye care practitioners to educate their patients as to the need for an accurate prescription and proper fitting, especially with eyewear incorporating progressive addition lenses, safety lenses, or other specialty parameters, and they can advise their patients who are considering purchasing eyewear online to check the vendor's return policy and costs," the researchers note.

Eye care practitioners in the United States are prohibited from placing waivers or disclaimers of liability on the prescriptions they write, which includes making recommendations, both for and against, where a patient should have the prescription fulfilled, the researchers emphasized.

However, doctors can verify the optical properties of eyewear received from another seller, a service the researchers encourage practitioners to continue to provide.

Unfortunately, an optometrist or optician cannot generally assess the impact resistance of the finished lenses purchased online, the researchers noted.

AOA members can conveniently access the complete study through the AOA Web site (www.aoa.org) by clicking on "Journal of AOA" on the navigation bar and entering AOA member number and password when prompted.

AOA members will then be taken, without entering further identification, to the *Optometry* Web site where, under the "Articles and Issues" tab, they can select "Past Issues" and then the September 2011 edition.