

Value of Personalized Refractive Procedure: A Survey of Perceived Clinical Outcomes, Practice Benefits, and Patient Satisfaction in China

Alcon

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Background and Purpose

- Myopia is projected to affect 50% of the global population by 2050, while astigmatism already impacts 40%.^{1,2} These conditions reduce quality of life and impose significant economic costs, with uncorrected myopia contributing to \$244 billion in lost productivity in 2015. Rising prevalence is driving a 9.6% annual growth in refractive procedures, expected to reach 5.8 million by 2025.^{3,4,5,6}
- PRK, traditional LASIK and lenticule extraction lack the capability of personalization for the individual optical needs of each patient while personalized refractive surgery provides targeted treatment for the unique optical system of each patient.^{7,8,9}
- This study evaluated the perceived clinical outcomes, practice benefits, and patient satisfaction of wavelight plus, a laser vision correction technology using a personalized 3D eye model with streamlined diagnostic and planning capability. It examined its effectiveness in meeting unmet needs, patient outcomes, adoption considerations, patient experience, and economic impact in China.

Methods

- Four highly experienced ophthalmologists from different regions across China, each with extensive expertise in wavelight plus technology and between 10 to 18 years of experience in performing refractive surgeries, were interviewed for this study. These specialists were selected based on their significant contributions to the field and their familiarity with advanced refractive surgical techniques.
- A structured interview guide was developed to ensure a comprehensive exploration of key areas, including effectiveness in meeting unmet needs, patient outcomes, adoption considerations, patient experience, and economic impact. The data included quantitative metrics—such as visual acuity, surgical precision, and patient recovery—and qualitative insights from practitioners on their experiences with wavelight plus technology.
- The discussion guide and interviews were conducted in Chinese using video conferencing and the results were translated into English. The interviewers, translators, and analysts were bilingual (in English and Chinese), and the resulting interpretations in English were confirmed by two analysts.
- Based on physician feedback, the inputs focused on perceived efficacy, safety, patient satisfaction. Each aspect was rated on a 4-point scale based on the number of physician mentions, and the results were visualized in a plot.

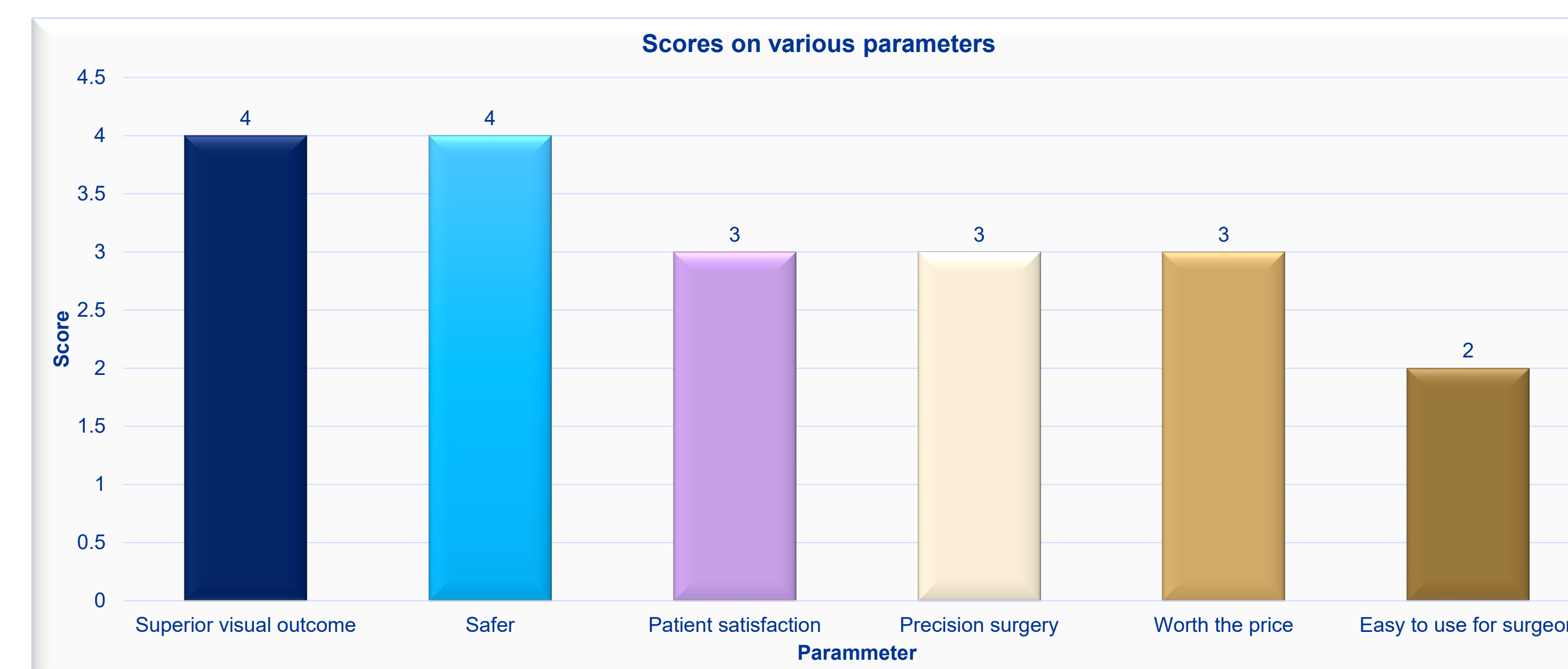
About wavelight plus®

- Wavelight plus is an advanced laser vision correction technology that utilizes a personalized 3D eye model to create patient-specific ablation profiles. Designed to enhance refractive surgery outcomes, it aims to improve visual precision, patient satisfaction, and procedural efficiency.
- By addressing individual eye characteristics, wavelight plus helps optimize treatment accuracy and expand the potential benefits of laser vision correction.
- Based on patient surveys, over 99% were satisfied with the results of their personalized refractive surgery, 94.3% would choose to do the procedure again due to their result, and 100% achieved their goals from surgery either partially or fully.

Results

- All four surgeons agreed that wavelight plus is perceived to deliver superior results, with most patients achieving 20/20 vision or better and 85% reaching 20/16 vision. Patients also reported better night vision, less glare and halos, and quicker recovery than with traditional methods. **Figure 1** shows the number of surgeons mentioning various advantages of wavelight plus.
- All four surgeons reported high patient satisfaction with wavelight plus, noting increased referrals—up to 60% in one clinic. Coupled with the Sightmap diagnostic device that is necessary for the refractive consult, it offers improved precision and with a 0% re-enhancement rate. Despite the wavelight plus technology fee, many patients found the visual benefits worthwhile. Key considerations included patient affordability and training.
- As shown in the word cloud in **Figure 2**, the most frequently mentioned terms in physician feedback were patient satisfaction, improved vision, and safety.

Figure 1: Comparison of the respective score



Results

- Its advanced technology, corneal tomography, and ray-tracing ensure highly personalized treatments, correcting both corneal and internal eye issues. Patients experience faster recovery, greater satisfaction, and strong word-of-mouth referrals.
- Hospitals or clinics that adopt the wavelight plus technology realized a positive practice economic impact, as strong demand and ease of adoption make it attractive for clinics. Additionally, it streamlines patient evaluation and surgical planning. The improved workflow efficiency, higher patient throughput, and potential for premium service offerings contribute to increased revenue and profitability for practices.

Figure 2: Key words and their respective frequency



Conclusions

- The study concluded that wavelight plus is perceived to provide significant improvements in clinical outcomes and enhance patient satisfaction. Its advanced, personalized technology enables tailored treatments that address the unique characteristics of each eye, leading to superior visual acuity and enhanced night vision. These benefits position wavelight plus as a groundbreaking innovation in refractive surgery, offering both improved patient experience and positive economic impacts for the practices.

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Abbreviations: CDVA = corrected distance visual acuity; PRK = Photorefractive Keratectomy; SMILE = small incision lenticular extraction; TG-LASIK = topography-guided LASIK; UDVA = uncorrected distance visual acuity; VA = visual acuity