

Doctors in short supply

by Stefanie Petrou Binder, MD, EyeWorld Contributing Writer

Statistics reveal significant differences in ophthalmic care between rural and urban areas of Germany

Germany is facing the increasingly difficult task of maintaining its high healthcare standards amid rising costs in a restructured, more restricted healthcare system. Small town ophthalmologists and conservative practitioners have been closing shop for the greener pastures of the city, leaving their patients in the lurch. The eye doctors left behind to bear the brunt are taxed by long hours of work in caring for a needy, aging population. Ophthalmic patients bear a different burden, waiting longer for appointments, organizing day trips into urban centers for doctor visits, and joining the tail end of months' long waiting lists for cataract surgery.

Limited access to healthcare in rural areas of Germany is likely to have repercussions on cataract patients, according to **Tim Herbst**, project manager, nordBLICK Eye Clinic Bellevue, Kiel, Germany. In a poster presentation he gave at the 21st Winter Meeting of the European Society of Cataract and Refractive Surgeons (ESCRS), Mr. Herbst contrasted the differences in pre- and postoperative quality of care between urban and rural German cataract patients.

"We are confronted with the problem of a short supply of ophthalmologists in peripheral areas in Germany," Mr. Herbst said. "Licenses for eye doctors within Germany's statutory healthcare system are rare. Because urban areas may offer social, lifestyle, and cultural advantages that rural areas cannot offer, eye doctors may be enticed to get licensed in urban as opposed to rural areas, which may be especially true for young ophthalmologists. The greater number of urban-based eye doctors can have consequences for patients in rural areas, as well as be the cause of work-related overload for physicians, especially in the outskirts. We are seeing long waiting times for patients for appointments, sometimes up to 6 months, a poor supply of healthcare services, as well as the obstacle of having to travel long distances for doctor visits."

Type of study	Monocentric study
Time frame	June 2013–December 2016
Data collection	44 local ophthalmologists with the help of documentation software (QNB software)
Included cataract cases	6,452 cataract cases
Target groups	1. Urban region (three areas) 2. Rural region (10 areas)
Number of variables	28 variables (eight finally included)
Statistical procedure	1. Comparison of urban vs. rural region <ul style="list-style-type: none"> • T-test (metric data) • Mann-Whitney U-Test (ordinal data) 2. Comparison of underlying 13 areas <ul style="list-style-type: none"> • Descriptive analysis (mean values) • Kruskal-Wallis test

Mr. Herbst compared rural versus urban patient care by analyzing data from the Quality Net Bellevue (QNB) patient database at nordBLICK Eye Clinic Bellevue. He included information on all cataract patients who were operated on within the time period from June 2013 to December 2016. Patients were divided by zip code into 13 rural and urban areas.

QNB is a cooperation between nordBLICK Eye Clinic Bellevue and 44 local ophthalmologists working out of different towns across the countryside of Schleswig-Holstein. Its main goal is the collection of pre- and postop cataract surgical data using self-developed documentation software that allows doctors and clinics to measure the quality of care in ophthalmology.

In addition to collecting cataract surgical data, Mr. Herbst measured patient satisfaction using the Catquest-9SF questionnaire, a short version of the Catquest, which assesses nine items of patient-reported outcomes relating to their vision and cataract surgery. Questions are scored by patients using a 5-point Likert scale, where a score of 1 corresponds to "no difficulty," 2 indicates "little difficulty," 3 indicates "some difficulty," 4 indicates "a lot of difficulty," and a score of 5 corresponds to "not possible." The Catquest questionnaire was given preop and at 1 month postop. Mr. Herbst also compared the data between urban and rural areas using t-test (metric data) and the Mann-Whitney test, and compared all 13 areas with one another using descriptive analysis (mean values) and the Kruskal-Wallis test for statistical evaluation.

Data on 6,452 cataract cases were incorporated in this analysis. The first target group included patients from three urban areas, and the second target group encompassed patients from 10 rural areas. Out of 28 potential variables associated with cataract surgery, eight were included in the analysis based on their potential relevance in reflecting the level of care observed among urban and rural cataract patients. These variables were patient age at the time of surgery, nucleus grading, effective phaco time, best corrected and uncorrected visual acuities, and patient satisfaction with near, intermediate, and distance vision.

Certain preop variables stood out following the data analysis, such as nucleus grading, which was higher in rural cataract patients. Nucleus grading using the LOCS III grading scale was a mean 2.39 ± 0.67 in 1,601 urban cases compared to 2.44 ± 0.66 in 2,233 rural cases ($P=.032$), suggesting that rural patients had harder cataracts going into surgery, perhaps owing to longer waiting times.

The preop best corrected visual acuity (expressed as a decimal value) was mean 0.54 ± 0.23 in 1,291 urban cases compared to 0.51 ± 0.21 in 2,456 rural cases ($P=.016$). The effective phaco time was mean 6.87 ± 6.70 seconds in 2,098 urban cases, and it was 6.95 ± 6.28 seconds in 3,100 rural cases ($P=.011$).

Visual acuity patient satisfaction scores preoperatively were higher on the Likert scale among rural patients compared to urban patients, indicating greater visual difficulty.

Preoperative patient satisfaction for near vision was mean 2.57 ± 1.43 in 592 urban cases compared to 2.80 ± 1.51 in 805 rural cases ($P=.005$). Patient satisfaction for intermediate vision preoperatively was mean 2.40 ± 1.37 in 590 urban patients and 2.60 ± 1.42 in 803 rural patients ($P=.008$), and for distance vision it was mean 2.15 ± 1.32 in 589 urban cases compared to 2.33 ± 1.36 in 802 rural cases ($P=.007$).

One month postoperatively, the best corrected visual acuity was mean 0.80 ± 0.24 in 934 urban and 0.79 ± 0.22 in 1,508 rural cataract patients ($P=.037$). Patient near visual satisfaction was 2.01 ± 1.58 in 826 urban and 2.32 ± 1.59 in 1,123 rural patients ($P=.000$), and intermediate visual satisfaction was 1.98 ± 1.56 in 817 urban and 2.10 ± 1.47 in 1,115 rural patients ($P=.001$).

"We identified several significant differences between rural and urban regions, in particular regarding the lower nucleus grading, lower effective phaco time, and higher patient satisfaction that were noted in patients from urban areas. Nevertheless, the underlying causes of the identified differences may be multifactorial, and their medical importance seems to be minor. The differences between rural and urban healthcare may be more significant in primary, ambulatory care than in patient care," Mr. Herbst said. **EW**

Editors' note: Mr. Herbst has no financial interests related to his comments.

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