

Establishing a Student-Led Ophthalmology Interest Group to Increase Early Exposure: A Program Report from Pakistan

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Abstract

Early exposure to surgical subspecialties is often limited in undergraduate medical education, particularly in ophthalmology. In response to this unmet need, three medical students at Aga Khan University established a student-led Ophthalmology Interest Group (OIG) in 2022. We present a descriptive program report of the group's initiative. The group aimed to facilitate mentorship, early skills development, and career exploration through academic, clinical, and community activities. OIG adopted a three-tier leadership structure with faculty and alumni support while maintaining a student-driven approach. Between 2022 and 2024, the group expanded from 9 to 18 leadership positions, conducted 29 events, and recorded 311 cumulative attendances. Annual participation over these three years increased from 41 to 140 attendances, and the number of students pursuing ophthalmology away rotations increased from 1 to 6. Our experience suggests that a low direct-cost, student-led interest group can provide a practical framework for organizing early exposure opportunities and structured activities in ophthalmology. This model may be relevant to other institutions seeking to support student involvement in surgical subspecialties. This report describes the development, structure, activities, descriptive growth indicators, and lessons learned from the OIG.

Keywords: Ophthalmology, Medical students, Student organizations, Mentorship, Surgical education

INTRODUCTION

Undergraduate exposure to ophthalmology at the Aga Khan University (AKU) is limited, with preclinical education primarily focused on basic sciences and formal ophthalmology training consisting of a single four-week rotation in the third year of medical school. The medical school has a total enrollment of approximately 500 students across five years, with around 100 students entering clinical training each year. Clinical years span years three through five, comprising approximately 300 students at any given time. A cross-sectional survey from a South Asian medical school found that only 1.6% of students selected ophthalmology as their first-choice specialty,¹ consistent with findings elsewhere that ophthalmology ranks among the less commonly preferred specialties among medical students.² Nationally and internationally, limited undergraduate exposure to ophthalmology and other surgical subspecialties has been associated with misconceptions about the field and gaps in students' understanding of its distinctive aspects and practical scope, which in turn may affect informed career decision-making.^{3,4} Limited exposure has also been linked to constrained mentorship opportunities.⁵ This gap is particularly relevant for ophthalmology at AKU given its comparatively limited curricular time relative to other specialties.

Specialty interest groups provide opportunities for students to explore academic interests and engage with peers, residents, and faculty in activities such as journal clubs, mentoring sessions, research collaborations, and workshops.⁶ Such groups may offer a low-cost channel for mentorship and specialty exposure in South Asian and other low- and middle-income country settings, where formal mentoring structures within medical education remain comparatively less established.⁷ In ophthalmology, exposure to the specialty and mentorship during medical school have been associated with students' interest in and understanding of the field.³ When choosing a specialty, students consider factors such as personal interest, lifestyle, work-life balance, financial compensation, and skill sets.⁸ Mentorship and role models, particularly in surgical specialties, have similarly been associated with career preferences and specialty choice.⁹

In response to the limited structured ophthalmology exposure at AKU, three medical students established the Ophthalmology Interest Group (OIG) in 2022, and within one month it grew to a group of 9 medical students in leadership roles. The goal was to organize opportunities for early ophthalmology exposure, mentorship, and professional development. This report describes the development, structure, activities, and descriptive growth indicators of OIG between 2022 and 2024, and summarizes lessons learned from its implementation that may help inform similar initiatives at other institutions.

Data Sources and Verification

Event attendance was recorded through registration links (Google Form) circulated ahead of each event; the cumulative attendance figures reported in this manuscript represent the sum of per-event registrations across the study period and may include repeat attendance by the same student. Attendance was cross-verified against an in-event Excel sign-in sheet maintained at each activity. General body membership was tracked through a Google Form sign-up and maintained in an Excel-based membership log, with enrollment in the group's WhatsApp communication channel used as a supplementary indicator of active student engagement. Data on ophthalmology away rotations were obtained through institutional records and verified directly with students.

Our Experience Developing the Ophthalmology Interest Group

We established OIG in response to the limited ophthalmology exposure within the undergraduate curriculum. The group adopted a three-tier leadership structure comprising an executive team, senior leads, and junior leads, alongside a general body of members (Figure 1). The three-member executive team managed group affairs and served as OIG's primary contact and representatives to the department and external collaborators. Senior leads each headed one of three functional wings (media, events and outreach, and research) and oversaw wing operations and cross-wing collaboration. Junior leads managed day-to-day activities within their assigned wing and reported to their respective senior lead. The general body comprised students who attended events and received updates on OIG's activities, offering a low-commitment avenue for students still exploring their interest in ophthalmology without assuming a leadership role. This structure supported continuity across academic years, distributed responsibilities, and encouraged progressive leadership development. Faculty and alumni contributed in advisory roles, while the group remained primarily student-driven. Membership was open to all interested students.

Leadership recruitment followed a stepladder model, in which members were generally promoted to the tier above their current position; this was designed to ensure sustained mentorship, participation, and contribution across tiers. Students who regularly attended events and demonstrated enthusiasm for ophthalmology were invited to join as junior leads. A standardized spreadsheet was maintained throughout the year to track each member's event attendance, contributions to organizing and arranging events, teamwork and collaboration, standing among peers, demonstrated interest in ophthalmology, and willingness to mentor junior members. At the end of each academic year, the outgoing executive team selected its successors from among the applying senior leads. The incoming executive team then interviewed and evaluated candidates for senior- and junior-lead promotions, based on contribution records and interviews. Each leadership term lasted one academic year, and concluded with a structured handover comprising documentation and transition meetings between outgoing and incoming leads. Instances of member inactivity or workload imbalance were addressed informally by leadership, typically through redistribution of responsibilities among active members. To ensure broad availability across the academic calendar, junior leads were recruited from multiple year groups so that at least one member from each tier remained active at any given time.

Activities were planned annually by the executive team; wet lab sessions and community screening camps required departmental approval given their use of specialized equipment and community engagement, while other activities were organized independently by leadership. Academic activities included journal clubs, research mentorship, and workshops focused on critical appraisal, writing skills, and scholarly development. Clinical exposure was supported through simulation-based training and wet labs using microsurgical simulation and suturing models (Figure 2). Efforts were made to hold at least one activity per month, though the exact number of events varied year to year, as detailed in Table 1. Community eye screening camps provided supervised experience in basic ophthalmic assessment, counseling, and data collection; the participant numbers reported for these camps reflect student volunteers only and do not include community members screened. Informal mentorship opportunities were encouraged through interactive sessions with residents and faculty. As detailed in the Data Sources and Verification section, reported attendance figures reflect cumulative

event registrations and may include repeat attendance by the same student, rather than counts of unique individuals. Activities were modified over time based on participant feedback and changing student needs.

Direct cash expenditure was minimal, approximately USD 60–70 annually, used for occasional needs such as souvenirs, refreshments, and event logistics (for example, the annual game night); most activities relied on organizational effort and time. Beyond this direct cost, the group relied substantially on in-kind institutional resources, including departmental provision of event and meeting venues, access to pre-existing wet lab practice instruments and microsurgical simulators (which were not purchased specifically for OIG activities), and volunteered faculty and resident time for teaching, mentorship, and event support. Most other activities required human resource management, including event organization, social media management, poster designing, and invitations. This was carried out by core members and did not involve financial expenditure. This model was deliberate, designed to ensure long-term sustainability without excessive dependence on external funding, though it should be noted that replication at other institutions would similarly depend on access to comparable in-kind institutional resources rather than on direct cash cost alone. By maximizing use of institutional infrastructure and reserving expenditure only for activities that required it, the group remained financially replicable for institutions with comparable existing infrastructure and limited dedicated budgets.

Observed Growth and Participation Trends

For clarity, indicators are defined as follows. Leadership positions are the total executive, senior, and junior lead roles filled each year. General body membership is the number of students enrolled via the group's Google Form sign-up and membership log. Events are distinct organized activities held each year (detailed in Table 1); participation/attendance reflects cumulative event registrations, not unique individuals, and may include repeat attendance by the same student. Away rotation numbers reflect the number of students undertaking an ophthalmology away rotation each year, verified through institutional records. Denominators are reported only where a clearly defined eligible population exists: away rotations are benchmarked against a single graduating batch (100 students), while the remaining indicators lack a comparably well-defined denominator.

Overall OIG membership (including leadership and general body members) increased from 21 students in 2022 to 31 in 2023 and 51 in 2024. General body membership increased from 12 to 33 students over the same period. Leadership positions increased from 9 to 18, primarily through expansion of junior leadership roles as event numbers, participation, and interest in leadership increased. The executive team (3 positions) and senior leads (3 positions) remained unchanged across all three years. The number of students pursuing ophthalmology away rotations increased from 1 to 6 although this cannot be attributed to OIG (1% to 6% of a graduating batch of approximately 100 students; Table 1).

The number of events held annually increased from 5 in 2022 to 13 in 2024, with total participation rising from 41 to 140 attendances per year. Table 2 provides a full breakdown of event types, along with the number of events and attendance figures for each year. Across the three-year period, OIG organized 29 events with a cumulative participation of 311 attendances. The numbers represent total attendance across events rather than the number of unique individuals. Simulation-based activities, such as EyeSi and wet lab sessions, consistently

had high attendance. Although these trends cannot establish causality, they may suggest growing engagement within ophthalmology.

Challenges and Management Strategies

Reaching students and maintaining engagement was an early challenge. To address this, OIG used university-associated social media accounts to share event announcements and recurring educational content, including ophthalmology facts and member spotlights. Campus posters and periodic announcements through the university's Office of Student Experience email distribution provided additional avenues for reaching students. Similar low-cost, social media-based engagement strategies have been described as effective for sustaining medical student interest in other academic contexts.¹⁰ Scheduling events across different academic years required collecting timetables from all year groups to identify common availability.

Securing faculty support required presenting a yearly activity plan with a detailed budget for departmental approval. To sustain this relationship over time, annual update meetings were held with the department, and OIG was featured in the departmental newsletter. Venue access was resolved by utilizing the ophthalmology department's eye teaching room, while financial constraints were managed by prioritizing cost-effective options and maximizing the use of institutionally provided resources.

Maintaining leadership continuity was challenging given the demands of the curriculum and away rotations. The executive team was kept at three members to ensure at least one was always active. A stepladder succession model, as described above, ensured smooth transitions. Workload was distributed across the three tiers, executives overseeing planning, senior leads managing event execution and communication, and junior leads handling logistics and outreach. Junior leads were deliberately recruited from different year groups so that at least one member remained available at any given point, and journal clubs and mentoring sessions were scheduled weeks to months in advance to accommodate faculty availability.

Raising awareness among junior medical students was a persistent challenge. Annual orientation sessions were introduced at the start of each academic year to introduce new medical students to the specialty and encourage early engagement. Table 3 summarizes the key challenges and potential management strategies in an organized format to enhance readability.

Lessons Learned

Implementation enablers and sustainability

In our experience, establishing OIG provided a practical structure for organizing sustained exposure to a surgical specialty with limited opportunities and relatively low baseline interest among medical students.¹¹ The group incorporated a structured, low-risk environment with ongoing mentorship, features previously associated with student interest in specialty exploration.^{3,12} Its leadership model included annual transitions and defined roles across academic years, while allowing activities to be adapted to student needs and institutional constraints.

Mentorship

Beyond participation, the group provided a platform for professional networking. Interaction with residents, faculty, and alumni may help address common barriers to pursuing competitive specialties, including limited exposure and lack of mentorship. We observed an increase in students pursuing ophthalmology-related opportunities, including away rotations. However, OIG's contribution to this trend cannot be determined from this program report, and the observed increase should not be interpreted as a causal effect of the group.

Low-cost replication and future directions

Direct financial costs were low, but OIG relied on substantial existing institutional resources as mentioned above. Institutions seeking to establish a similar group may therefore need comparable resources and support, even if direct financial investment is limited. The OIG model offers one approach to organizing specialty-related activities, early exposure, and mentorship in surgical subspecialties. Developing a structured evaluation framework to assess specialty perception over time is a priority for future iterations of the group.

Comparison with existing literature

Our experience aligns with findings from international models of student interest groups in surgical specialties. In the context of ophthalmology specifically, data from the University of Iowa's Ophthalmology Interest Group show that student volunteering increases networking opportunities for 80% of participants.¹³ The Indiana University Ophthalmology Student Interest Group reported that its student-run clinic influenced many students' decisions to pursue ophthalmology.¹⁴ Similarly, Milner et al. found that participation in orthopedic surgery interest groups was associated with higher residency match rates, with match rates of 82.39% among interest group participants compared to 81.21% overall ($p < 0.05$), underscoring the value of early structured engagement in niche specialties.¹⁵ Sorab et al. found that a single resident-led extracurricular ophthalmology workshop significantly increased preclinical students' interest in the specialty, suggesting that even brief structured exposure beyond the formal curriculum can shift student attitudes.¹⁶ These prior reports are drawn largely from well-resourced, North American academic institutions. Unlike these studies, our findings are based on descriptive indicators of participation and organizational growth rather than direct measures of networking opportunity, specialty interest, or residency match outcomes; these outcomes were not assessed in our study, and the parallels drawn here are therefore observational rather than confirmatory. This report contributes a description of a student-led ophthalmology interest group implemented in a South Asian medical school, demonstrating that a comparable structure can be established and sustained without dedicated funding, paid staff, or formal institutional infrastructure beyond existing departmental resources.

Limitations

Our observations are based on a single institution and descriptive participation trends rather than validated educational outcomes. This report is descriptive in nature and should be interpreted as a program description rather than a formal evaluation study. As such, it does not include assessment of knowledge gain, skill acquisition, or change in career interest among participants. Participation was voluntary and likely subject to self-selection bias. Reported attendance figures reflect cumulative event registrations rather than unique individuals and may therefore include repeat attendance by the same students, and denominator data were not available for most indicators other than away rotations, limiting our ability to contextualize growth relative to the eligible student population. As a result, we cannot determine the direct impact of the group or establish causality

1 on career decisions or skill acquisition. Additionally, while informal feedback was collected from members
2 throughout the group's activities, no formal structured assessment of member experiences was conducted. This
3 represents an area for future evaluation. Similarly, no formal framework was established to evaluate student
4 perceptions of ophthalmology as a specialty. The observed increase in students pursuing ophthalmology away
5 rotations, from 1 in 2022 to 6 in 2024, may serve as an indirect indicator of growing interest, though this cannot
6 be attributed to the group alone. Finally, this model relies on institutional resources, that may not be available
7 elsewhere, limiting the transferability of this approach. Data on students' clinical competency in ophthalmology-
8 related examination stations were not available and represent a further avenue for future evaluation.

9
10 Overall, these findings support the feasibility and sustained growth of a student-led model, but do not
11 demonstrate its direct impact on students' knowledge, skills, or career outcomes.

Accepted, in-press

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1 **FIGURES AND TABLES**

2 **Table 1:** Growth in OIG participation and activities, 2022-2024

Measure	2022	2023	2024
General body members, n	12	19	33
Leadership positions, n	9	12	18
Events held, n	5	11	13
Students completing ophthalmology away rotations, n	1	2	6

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Table 2: Number of OIG Events and Total Participants by Event Type (2022-2024)

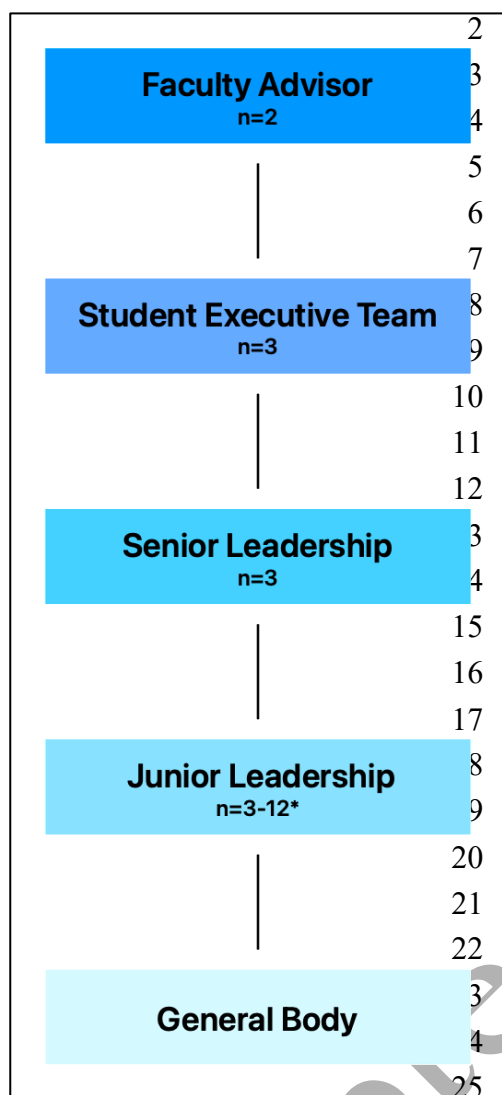
Event Type	2022 E	2022 P	2023 E	2023 P	2024 E	2024 P	Total E	Total P
Mentorship sessions	3	20	4	28	5	31	12	79
Journal club	1	12	2	23	3	26	6	61
EyeSi tournament and wet lab	1	9	2	31	2	36	5	76
Eye health screening camp	0	0	2	4	2	6	4	10
Game night	0	0	1	44	1	41	2	85
Total	5	41	11	130	13	140	29	311

E = number of events. P = cumulative student attendances across events (not unique individuals; students attending multiple events were counted once per event); for community screening camps, P reflects student volunteers only and excludes community members screened

Table 3: Challenges, Management Strategies, and Lessons for Replication

Challenge	Management Strategy	Lesson for Replication
Reaching students and maintaining engagement	Established a presence on Instagram and Facebook, posting both event announcements/highlights and recurring educational content (e.g., ophthalmology facts, member spotlights); supplemented with campus posters and periodic announcements through the university's Office of Student Experience email distribution	Leverage existing university social media channels for low-cost outreach
Scheduling events across academic years with differing timetables	Collected timetables from all year groups to identify common availability	Coordinate across cohort schedules early when planning an annual event calendar
Securing and sustaining faculty support	Presented a yearly activity plan with budget for departmental approval; held annual update meetings; featured in the departmental newsletter	Maintain regular, structured communication with faculty/department leadership to sustain buy-in over time
Venue access	Utilized the ophthalmology department's eye teaching room	Identify and formalize access to existing departmental spaces rather than seeking external venues
Financial constraints	Prioritized cost-effective options and maximized use of institutionally provided resources	Design activities around existing institutional resources to minimize dependence on external funding
Maintaining leadership continuity given curricular demands and away rotations	Kept the executive team at three members to ensure at least one was always active; adopted a stepladder succession model; recruited junior leads from multiple year groups	A multi-tier leadership structure with built-in redundancy helps sustain operations despite members' competing academic commitments

1 **Figure 1: Structure of OIG**



*Junior leadership positions increased from 2022-2024

Figure 2: Fourth-year Medical Students Practicing: A. Capsulorhexis on the EyeSi simulator, B. Corneal Suturing Techniques

