EDITORIAL

Surgical Careers and Importance of Dedicated Research Years after Medical School, or During Training

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Research fellowships are short-term academic positions at teaching hospitals wherein fellows work with senior researchers to help in their projects, meanwhile improving their own understanding of research and strengthening their portfolios. This is done through both structured fellowship programmes, or contracts with a model similar to apprenticeships. Research fellowships have shown growing popularity among medical graduates and residents. It is now fairly common for medical graduates to dedicate one or two years to research ahead of joining a residency programme, expecting that it will improve their chances of getting in high-ranking programmes, or high-demand specialties.

Such fellowships are particularly popular among International Medical Graduates (IMGs), applying to competitive programmes in United States, especially for surgical subspecialties like plastics, orthopaedics and neurosurgery.[1] However, it is interesting to note that a study conducted at Mayo Clinic's (Rochester, MN) general surgery residency programme involving IMGs and Programme Directors (PDs), suggested that an overall research experience did not significantly impact an applicant's chances of getting into good programmes. In fact, PDs in North American training programmes advised against taking time off after graduation for research. A similar study covering dermatology concluded no difference in match rates between applicants who dedicated time for research versus those who did not.[2] Others may argue that these years of research have other advantages such as improving ones understanding of research beyond what is taught in medical schools, compensating for low Step scores, adjusting oneself to the North American healthcare culture, opportunities for networking, etc., all of this eventually culminating into a more balanced application and better performance during interviews.[3]

On the other hand, a paper that studied graduates of a university hospital in Pakistan, which matched into surgical residencies over a ten-year period, found better success rate for graduates with a research experience in both securing categorical positions and being able to successfully convert preliminary positions to categorical ones.[4] The authors were also of the opinion that the merits of dedicated research time far outweighed the number of publications, and other factors such as social integration, overcoming cultural and language barriers, better mentorship, and developing faculty contacts, probably contribute to the overall success.[4] This fits in with another study that aimed to uncover the importance of both basic science and clinical research for PDs in surgical residency programmes (it should be noted that this wasn't specific to IMGs).[5] The authors concluded that while research was definitely important and considered during candidate selection, it was mostly secondary to other aspects such as Step scores, the interview itself, LORs, and overall interest in specialty (surgery in this particular case). Again, having research participation in a specific specialty demonstrates an interest in that specialty, which is independently amongst the top considerations for PDs.[5]

Another study tailored to plastic surgery residency applicants concluded that as one of the more competitive specialties, applicants with research fellowships improved their chances of securing integrated plastic surgery residencies.[6] Yet 63% of American Council of Academic Plastic Surgeons members did not encourage medical students to undertake additional research years, simply because it may not be necessary based on the overall strength of the application.[6]

If we look at the official US National Resident Matching Programme (NRMP) data, the 2021 Programme Directors Survey Report suggests that generally across all specialties, "Involvement and Interest in Research" was endorsed by 41.1% of respondents as a consideration for deciding whom to interview, with a mean importance of 3.6 out of 5. LORs in the specialty, personal statement, diversity of characteristics, professionalism and ethics, were all ranked higher.[7] This is reflected in another study that conducted a survey of PDs of surgical residencies across the US and Canada and showed that while the interview, recommendation letters, and exam scores were all rated 4.0 or higher on a 5 point Likert scale of importance, research scored only 2.62.[8] However as noted earlier, it is possible that the experience and time spent during research may indirectly have an effect on these parameters, leading to

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better outcomes.

There is also an assumption that to produce a more holistic academic surgeon, programmes should incorporate dedicated year of research during residency training. Residency training in Pakistan does not allow time off for research although it is not unusual in other countries (including UK and US) to either have inbuilt research modules and dedicated time off clinical work for it, or an option for residents to interrupt their training for a few years to acquire a formal research qualification, including MD or PhD. Dedicated research time during residency will obviously increase the years required to finish training that can be of concern especially since surgical training is typically longer than other specialties to begin with. There is also a concern that residents acquire research qualifications only to be able to get better post-training job opportunities and do not necessarily contribute to research in later years. This would mean that a lot of the time, effort and funds that go into these research programmes, is eventually wasted. Robertson et al., collected data from 1052 trainees, 381 (36%) of who interrupted residency for research and concluded that dedicated research years during residency is not only a common, but also a rather costly practice, as it is unclear to what extent this leads to the development of surgical investigators after post-graduate training.[9]

The advantages of dedicated research time may actually be non-research based. Several studies suggest that time spent in doing research in your area of clinical interest, has a positive association with overall research 'experience' during residency.[10] This is supported by a study that asked general surgery residents who pursued dedicated research years about their reasons for doing so and concluded that – beyond the fairly obvious interest in developing research skills themselves – reasons included the perceived need for publications and networking for career development and securing fellowships, cultivating mentorship, networking, and even personal reasons such as burnout and family planning outside the robust routine of residency.[11] These advantages are obviously difficult to gauge, or monitor.

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