Medical Undergraduate Research-The Game is Worth the Candle!

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Research-mindedness, like the ability to write verse or compose music, is an inner, indefinable quality, one of the free gifts of the gods, unevenly distributed, not bestowed on all, or on all in equal proportions. Some are born with it; some are reared into it by the environmental contact, whilst others acquire it by diligent endeavour.\[1\]

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Medical undergraduate research, be it the “intellectual bottle-washing” in an ongoing project or designing one’s own projects and publishing the results, is much more than an exploratory enterprise - it is an activity that enables students to channelize their youthful energies towards worthwhile pursuits.\[2\] Here is a cogent elaboration as to how sustained academic enquiry into important intellectual questions serves to add tangible dimensions to one’s personality.

Research as a stress-buster

Medical schools always pride themselves for attracting the creme-de-la-creme of society. However, these bright students also have to cope with the heavy burden of expectations of the society, perhaps as a premium. Besides, medical education itself can be a trifle stressful \[3\] considering that one may fail to realize the relevance of knowledge that he is being made to pack into his gray cells. The highs and lows of medical training can dent the confidence of students, especially those who are normally “used to” doing exceptionally well in academics. Without effective interventions, stress is bound to result in impairment over a period of time.\[4\]

Engaging into worthwhile research during the undergraduate period, while not a panacea to the situation, is one of the positive means to beat the stress. For instance, achieving small daily goals around project work reaffirms one’s self-belief in being able to complete tasks independently and efficiently.\[5\] Besides, playing a part in an institution’s central mission of scientific accomplishments imparts a worthwhile purpose to otherwise mundane campus life - one feels an integral component of something consequential.

Group research projects inculcate into medical students the spirit to work in collaboration with their peers in a very stimulating environment. In addition to making the process of learning more effective, such an intellectual bonding creates a platform where one can freely express one’s doubts and anxieties, not to mention the benefits accrued in terms of interpersonal skills. This helps to diffuse the tension that creeps in due to performance pressure Moreover, interaction with the research mentor proves a timely succour to a student who is clueless about the new milieu. This helps the student demystify the aura around the profession and thus, alleviate the student’s stress.\[6\] Thus, an alternate yet a very academic exercise of research does the psyche of medical students a world of good. However, it is obligatory to stress that upliftment of science should be the cardinal purpose of any research enterprise. No research work should, therefore, be undertaken solely to reap its byproducts like stress busting.

Transcending the classroom teaching - Learning the soft skills

Quite a lot of time one has to obtain permission from different authorities before one can initiate the activity. Such conditioning early in career adds to the soft skills in communication and problem solving.\[7\] Research provides the opportunity to learn through enquiry rather than through simple transmission of knowledge. During the course of any research project one frequently encounters situations that demand out-of-the-box and objective thinking. One also develops the knack of using common sense during the course of simple things like staining a smear in a microbiology lab or running a gel in a genetics lab. And for those with an artistic bend of mind, showcasing your work gives ample opportunities to unleash one’s dormant ideas and presentation skills.\[8\]

One may argue against research at undergraduate level by pointing at the overburdening medical curriculum. Indeed, there is no denying that one of the prerequisites for engaging into any worthwhile project is the ability to balance a lot of activities within the constraints of time\[9\] But to those willing to learn, the experience teaches valuable lessons in time management. The essence lies in gaining maximum output from the invested inputs. And those who can master this fundamental strategy can be expected to make a success of other tasks that they may undertake in future.
Medical textbooks are inundated with advances being made in understanding diseases, and their treatments. Genuine appreciation of these developments is possible only when one plays a direct role in advancing the field. Although no additional weightage can be secured in final or postgraduate entrance examinations by publishing one’s work, quality publications certainly enhance one’s professional and academic credentials to support applications for scholarships, awards and also for future employment. A word of caution here would not be out of place. In any scientific study, ethical considerations must always prevail. For instance, a biased approach to a problem, any form of data fabrication, or resort to gifting authorship to seniors simply to please them cannot be tolerated in a scientific endeavour. To imbibe essential values, it is imperative that one works only under the watchful eyes of a researcher of impeccable professional integrity.

Further, research at the undergraduate stage certainly widens career opportunities for those looking beyond the routine patient care. However, undertaking projects is not the lone way of learning principles of research. One can start with simple steps like actively participating in workshops on research methodology and in mock research exercises. A thorough understanding of research methodology empowers one with critical appraisal skills needed for evidence-based medicine (EBM) and with skills for effectively communicating their research to the international scientific community. This goes a long way in the making of the much-desired, much-admired physician-scientist. Thus, development of a scientific temper is arguably the most positive outcome of any research venture. And isn’t this precisely what every discerning medical student aspires to do - train the mind rather than crowd the memory. And who knows, today’s academic adventure may pave way for tomorrow’s discovery of monumental importance, perhaps providing a breakthrough for a seemingly inscrutable medical problem.

Thus, the worth of quality undergraduate research in academic careers of medical students cannot be overrated. So, go ahead, give it a try, the game is worth the candle!

References

5. Frishman WH. Student research projects and theses: Should that be a requirement for medical school graduation? Heart Dis 2001;3:140-4.