

1. Motivating factors for research participation in medical education.

Theme	Code	Definition	Quote examples
Autonomy	Personal Interest	Engaged in research due to an individual excitement or topic of interest	<p>"Genuine interest in research" (P46)</p> <p>"Passion for research, Curiosity" (P20)</p> <p>"I like asking questions that haven't been asked before" (P7)</p>
Lack of Autonomy	Program Requirement	Completing a research project is necessary within the program	<p>"Royal College requirement, Department requirement to present something on an annual basis" (P5)</p> <p>"I do not have particular interest in clinical or QI research, and while I love basic science, it is not feasible to do with full time clinical care requirements. I therefore have no internal motivation to do the research because it is not interesting to me but do it because of the program requirements." (P4)</p> <p>"Mandatory. Getting through ethics took us two years and if I didn't have to do this project I wouldn't be doing it. I expected it to be done at the end of second year and at the end of third year we are JUST starting to interview participants" (P37)</p>
	Residency or career	Pressure to do research to obtain the desired residency, fellowship, or staff placement	<p>"I was largely motivated by people (staff, residents, med students) saying that the only way to get into the program was through having significant relevant research experience" (P29)</p> <p>"I want to match in CARMS and have a successful career" (P51)</p> <p>"To successful match into my residency program, honestly, don't care for research otherwise. It's just a means to an end to help me get to where I want. Actively hate it." (P45)</p>
	Pressures / expectations	Feeling that you should or must do research due to external pressure	<p>"I also feel that going through medical school in an academic center exposes you almost exclusively to physicians who do tons of research, which makes it seem like you have to learn to love research if you want to be their version of 'successful'" (P29)</p>

			"Feel like doctors "should" know how research is done. Feel like doctors "should" contribute to medical knowledge" (P8)
Competence	Skill development or growth	To improve one's own research skills or to grow as a student, physician, or researcher	<p>"It provides me with a different outlook on medicine which I believe to be beneficial in my growth as a medical student" (P44)</p> <p>"It builds important skills in both academic and personal growth spheres of my life" (P28)</p>
	Prestige / Achievement	Goal focused behaviour that centres around academic status, publication, or reward	<p>"I feel research is more prestigious than clinical work" (P8)</p> <p>"So the prestige of it also plays in - like it feels nice to tell academically minded people about the projects you are doing because it feels like they respect you more" (P29)</p>
Relatedness	Contribution to medicine and society	Furthering medical knowledge or health of the community through research	<p>"To learn more about a historically underserved population that experiences social stigma, and hopefully to contribute positively to improving the care of that population." (P6)</p> <p>"I appreciate the importance of research in shaping the future of medicine and feel a sense of responsibility towards that" (P44)</p> <p>"I have I drive to contribute my ideas to society. Research has been my way to contribute to the public forum." (P42)</p>
	Relationships	Connection within the research team, with mentors, and within the community.	<p>"To build connections with those in my specialty of choice" (P40)</p> <p>"The research team is crucial for a safe and encouraging learning environment" (P32)</p>

## 2. Supportive factors for research participation in medical education.

Theme	Code	Definition	Quote examples
Supporting autonomy	Resources provided	Support for initiative through financial/ physical resources, ensuring individuals have autonomy in deciding to complete a research project and are not hindered by lack of resources	<p>"Faculty has provided funding for conferences" (P4)</p> <p>"Grants from an external organization funded my summer research project after my 1st year" (P29)</p>
Supporting competence	Prior knowledge and experience	Having previous experience in research or	"My prior research experience" (P40)

		a skillset applicable to research	
	Structure and built in education opportunities	Having opportunity to do research with resources allocated by the institution, including designated time	<p>"A special program in medical school that structures research and offers a degree notation" (P8)</p> <p>"A laid-out curriculum to keep me and my supervisor on track to complete the project" (P23)</p>
	Guidance from colleagues	Feedback and advice from colleagues, team members, or staff within the institution	<p>"Research coordinator who is well versed in REB applications, timelines for grants, certain research methodologies" (P6)</p> <p>"My peers and PI have been quite helpful in navigating difficult research questions" (P32)</p>
Supporting relatedness	Emotional support	Support offered outside of the direct research needs	<p>"My classmates that are going through the same thing I am" (P15)</p> <p>"Family and friends" (P35)</p>

### 3. Barriers to research participation in medical education.

Theme	Code	Definition	Quote examples
Lack of autonomy	Limited time	Limited time allotted for research completion itself or due to competing responsibilities	<p>"I also could be more productive in research if I had more time - research is so time-consuming. It is hard to fit it in the busy schedules of medical students, and residents too." (P36)</p> <p>"No time to work on it" (P3)</p>
	Reliance on others	Requiring others for the initiation or progression of research tasks	<p>"Lack of faculty doing research at my institution in my areas of interest" (P11)</p> <p>"Attempted a project but supervisor gave minimal</p>

			direction, and I was unable to do without support” (P23)
	Intrapersonal tension	Conflict within oneself due to research responsibilities, competing values, or personal struggle	<p>“I just don’t want to anymore. I don’t feel like I get a good work life balance when I do research in addition to school/homework. - I feel like I want to spend my time outside of school with family, friends, participating in sports, arts, or volunteering in my community.” (P26)</p> <p>“Mental health struggles throughout med school. I also think I sign up for way too many things because as a first-generation med student I have always felt like I need to do extra stuff to earn a place at the table” (P29)</p>
Lack of competence	Limited personal knowledge	Having insufficient knowledge or prior experience to carry out the tasks required	<p>“It can be hard to understand how to actually DO the research. Med school expects us to do research, yet we have absolutely no training on it. It would have been beneficial to have statistics training.” (P17)</p> <p>“Lack of practical / medical knowledge can be a barrier to doing effective research too” (P49)</p> <p>“Very limited support from a system. Need better research methods, study design and statistic support. (P24)</p>
	Substantial administrative workload	Tasks indirectly related to research completion with significant time and effort burden, such as arranging	“Requirement for detailed and intense research projects that require a lot of work” (P16)

		meeting or ethics applications	"Ethics approval process" (P19)
Lack of relatedness	Interpersonal tension	Tension between colleagues that interrupts the progress of the group	<p>"Group member absolutely not pulling their weight." (P9)</p> <p>"Supervisors tend to give very little direction and help when it comes to research projects, can make you feel helpless at times." (P28)</p>