

### Supplement 1. Participants Responses to the Questionnaire's Items

Item	Junior postgraduates (n=700)			Senior postgraduates (n=441)			$\chi^2$ (df)	p-value
	Disagree <sup>a)</sup>	Neutral <sup>a)</sup>	Agree <sup>a)</sup>	Disagree <sup>a)</sup>	Neutral <sup>a)</sup>	Agree <sup>a)</sup>		
Attitudes								
Mentorship is important in completing high quality research/scholarly activity	12 (1.7)	61 (8.7)	627 (89.6)	5 (1.1)	40 (9.1)	396 (89.9)	0.652 (2)	0.772
Research/scholarly activity promotes critical thinking and sound reasoning	23 (3.3)	97 (13.9)	580 (82.9)	14 (3.2)	56 (12.7)	371 (84.1)	0.334 (2)	0.846
Completing research/scholarly activity during residency is important for obtaining a job in a desirable department/location	32 (4.6)	105 (15.0)	563 (80.4)	33 (7.5)	67 (15.2)	341 (77.3)	4.362 (2)	0.113
I consider research/scholarly activity to be an important part of my residency training	66 (9.4)	137 (19.6)	497 (71.0)	44 (10.0)	90 (20.4)	307 (69.6)	0.253 (2)	0.881
I consider research/scholarly activity during residency is important for obtaining fellowship	40 (5.7)	104 (14.9)	556 (79.4)	27 (6.1)	52 (11.8)	362 (82.1)	2.174 (2)	0.337
I consider research/scholarly activity during residency is important for achieving an advanced degree	46 (6.6)	104 (14.9)	550 (78.6)	38 (8.6)	80 (18.1)	323 (73.2)	4.350 (2)	0.114
I would pursue research/scholarly activity even if it were not a mandatory component of residency	142 (20.3)	142 (20.3)	416 (59.4)	60 (13.6)	83 (18.8)	298 (67.6)	9.983 (2)	<b>0.007</b>
The research/scholarly activity expectations of my department are a source of stress for me	146 (20.9)	191 (27.3)	363 (51.9)	136 (30.8)	128 (29.0)	177 (40.1)	19.054 (2)	<b>&lt;0.001</b>
Research/scholarly activity (e.g., publishing an article) grants me personal gratification	56 (8.0)	172 (24.6)	472 (67.4)	23 (5.2)	116 (26.3)	302 (68.5)	3.396 (2)	0.183
I consider research/scholarly activity as tools that facilitate providing better health services and increase patient care	38 (5.4)	90 (12.9)	572 (81.7)	27 (6.1)	74 (16.8)	340 (77.1)	3.847 (2)	0.146
Research/scholarly activity should be MANDATORY for medical students and/or residents	199 (17.0)	150 (21.4)	431 (61.6)	50 (11.3)	89 (20.2)	302 (68.5)	8.068 (2)	<b>0.018</b>

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**Supplement 1. (Continued)**

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<b>Knowledge barriers</b>								
I lack experience in creating a research/scholarly activity proposal/methodology	158 (22.6)	133 (19.0)	409 (58.4)	101 (22.9)	110 (24.9)	230 (52.2)	6.402 (2)	<b>0.041</b>
I lack experience and training in medical writing/manuscript creation	126 (18.0)	154 (22.0)	420 (60.0)	105 (23.8)	101 (22.9)	235 (53.3)	6.732 (2)	<b>0.035</b>
I have inadequate linguistic skills (inadequate English) to use academic resources	463 (66.1)	113 (16.1)	124 (17.7)	283 (64.2)	69 (15.6)	89 (20.2)	1.085 (2)	0.581
I am unable to identify areas of research or formulate research questions	269 (38.4)	206 (29.4)	225 (32.1)	178 (40.4)	104 (23.6)	159 (36.1)	4.891 (2)	0.087
I am unfamiliar with statistical principles	199 (28.4)	169 (24.1)	332 (47.4)	125 (28.3)	116 (26.3)	200 (45.4)	0.757 (2)	0.685
<b>Organizational barriers</b>								
There is lack of protected time for resident research/scholarly activity	30 (4.3)	166 (23.7)	504 (72.0)	19 (4.3)	78 (17.7)	344 (78.0)	5.909 (2)	0.052
The clinical workload is too high (i.e., interferes with research/scholarly activity time)	35 (5.0)	139 (19.9)	526 (75.1)	31 (7.0)	68 (15.4)	342 (77.6)	5.069 (2)	0.079
There are too many educational activities (e.g., exams and clinical rotations)	41 (5.9)	121 (17.3)	538 (76.9)	55 (12.5)	91 (20.6)	295 (66.9)	19.381 (2)	<b>&lt;0.001</b>
There is a lack of funding for research/scholarly activity in my department	26 (3.7)	167 (23.9)	507 (72.4)	28 (6.3)	71 (16.1)	342 (77.6)	12.728 (2)	<b>0.002</b>
There is a lack of laboratories and other facilities in my department	54 (7.7)	212 (30.3)	434 (62.0)	55 (12.5)	93 (21.1)	293 (66.4)	15.808 (2)	<b>&lt;0.001</b>
There is a lack of faculty members experienced in conducting research	175 (25.0)	194 (27.7)	331 (47.3)	65 (14.7)	100 (22.7)	276 (62.6)	28.112 (2)	<b>&lt;0.001</b>
There is a lack of statistical support	66 (9.4)	214 (30.6)	420 (60.0)	37 (8.4)	109 (24.7)	295 (66.9)	5.651 (2)	0.059
There is lack of “credited authorship” when I participate in research projects	102 (14.6)	296 (42.3)	302 (43.1)	59 (13.4)	141 (32.0)	241 (54.6)	15.312 (2)	<b>&lt;0.001</b>

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There is difficulty in obtaining data/data collection or inability to recruit participants	123 (17.6)	204 (29.1)	373 (53.3)	100 (22.7)	130 (29.5)	211 (47.8)	5.181 (2)	0.075
There is a lack of available research/scholarly activity in my department	125 (17.9)	234 (33.4)	341 (48.7)	70 (15.9)	117 (26.5)	254 (57.6)	8.901 (2)	<b>0.012</b>
Research/ scholarly activity is not perceived to be important by my program/department	244 (34.9)	228 (32.6)	228 (32.6)	108 (24.5)	140 (31.7)	193 (43.8)	18.669 (2)	<b>&lt;0.001</b>
There is difficulty obtaining ethical approval (IRB)	189 (27.0)	320 (45.7)	191 (27.3)	153 (34.7)	165 (37.4)	123 (27.9)	9.763 (2)	<b>0.008</b>
My program doesn't have a research/scholarly activity curriculum	303 (43.3)	225 (32.1)	172 (24.6)	100 (22.7)	107 (24.3)	234 (53.1)	100.026 (2)	<b>&lt;0.001</b>
There is a lack of input from research supervisors	106 (15.1)	235 (33.6)	359 (51.3)	58 (13.2)	124 (28.1)	259 (58.7)	6.072 (2)	<b>0.048</b>
There is a lack of cooperation from the authorities of health centers and health staff	86 (12.3)	257 (36.7)	357 (51.0)	51 (11.6)	131 (29.7)	259 (58.7)	7.020 (2)	<b>0.030</b>
Miscellaneous barriers								
The research/scholarly activity projects available are of low quality	144 (20.6)	285 (40.7)	271 (38.7)	66 (15.0)	178 (40.4)	197 (44.7)	6.968 (2)	<b>0.031</b>
I find it hard to publish projects after completion	75 (10.7)	324 (46.3)	301 (43.0)	42 (9.5)	155 (35.1)	244 (55.3)	16.979 (2)	<b>&lt;0.001</b>
I lack encouragement from a mentor	119 (17.0)	189 (27.0)	392 (56.0)	57 (12.9)	148 (33.6)	236 (53.5)	7.158 (2)	<b>0.028</b>
There is difficulty in finding same-gender research mentors	292 (41.7)	259 (37.0)	149 (21.3)	191 (43.3)	143 (32.4)	107 (24.3)	2.838 (2)	0.242
I do not have a personal interest in research/ scholarly activity	377 (53.9)	109 (15.6)	214 (30.6)	239 (54.2)	90 (20.4)	112 (25.4)	6.170 (2)	<b>0.046</b>
I'm afraid from sexual harassment in research environments	507 (72.4)	119 (17.0)	74 (10.6)	330 (74.8)	61 (13.8)	50 (11.3)	2.080 (2)	0.353
Research/scholarly activities are boring	298 (42.6)	171 (24.4)	231 (33.0)	192 (43.5)	125 (28.3)	124 (28.1)	3.731 (2)	0.155
Gender barriers								
My gender is currently a barrier to my career aspirations/advancement	533 (76.1)	100 (14.3)	67 (9.6)	331 (75.1)	68 (15.4)	42 (9.5)	0.279 (2)	0.870

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People's attitudes about my gender are currently a barrier to my career aspirations/advancement	499 (71.3)	115 (16.4)	86 (12.3)	313 (71.0)	78 (17.7)	50 (11.3)	0.461 (2)	0.794

Data are presented as number (%), unless otherwise stated. Statistically significant results are marked in bold.

IRB: Institutional review board.

<sup>a)</sup>Disagreement responses were grouped together (strongly disagree and disagree into disagree), while agreement responses were grouped together for ease in reporting (strongly agree and agree into agree).