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Authors:	Rezarta Stena ^{1*} , Blerina Bani ¹ , Klara Hysenaj ² , Sabina Tosuni ³ , Armelda Teta ³ , Entela Drizaj ³ , Rajmonda Oboni Hida ³ , Esida Hoxha ⁴
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Affiliations:	¹ Department of Preclinical Studies, Faculty of Technical Medical Sciences, University of Elbasan ‘Aleksandër Xhuvani’, Elbasan, Albania; ² Department of Clinical Studies, Faculty of Technical Medical Sciences, University of Elbasan ‘Aleksandër Xhuvani’, Elbasan, Albania; ³ Department of Nursing, Faculty of Technical Medical Sciences, University of Elbasan ‘Aleksandër Xhuvani’, Elbasan, Albania; ⁴ Department of Physiotherapy, European University of Tirana, Tirana, Albania
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Corresponding author:	Rezarta Stena Faculty of Technical Medical Sciences, University of Elbasan “Aleksandër Xhuvani”, Elbasan, 3001, Albania Phone: +355 69 457 6036 E-mail: rezarta.stena@uniel.edu.al
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**Knowledge, attitudes, barriers and engagement in scientific research
among medical sciences students in Albania: a cross-sectional study**

Rezarta Stena^{1*}, Blerina Bani¹, Klara Hysenaj², Sabina Tosuni³, Armelda Teta³, Entela Drizaj³, Rajmonda Oboni Hida³, Esida Hoxha⁴

¹Department of Preclinical Studies, Faculty of Technical Medical Sciences, University of Elbasan ‘Aleksandër Xhuvani’, Elbasan, Albania; ²Department of Clinical Studies, Faculty of Technical Medical Sciences, University of Elbasan ‘Aleksandër Xhuvani’, Elbasan, Albania; ³Department of Nursing, Faculty of Technical Medical Sciences, University of Elbasan ‘Aleksandër Xhuvani’, Elbasan, Albania; ⁴Department of Physiotherapy, European University of Tirana, Tirana, Albania

Running title: Stena et al. Research attitudes in medical sciences students

***Correspondence:**

Rezarta Stena

Faculty of Technical Medical Sciences, University of Elbasan “Aleksandër Xhuvani”

Elbasan, 3001, Albania

Phone: +355 69 457 6036

E-mail: rezarta.stena@uniel.edu.al

ORCID: 0000-0003-3475-8891

ABSTRACT

Aim: To assess perceived research knowledge, attitudes, barriers, and factors associated with participation in scientific events among medical sciences students in Albania.

Methods: This cross-sectional study included 721 Bachelor's and Master's students at Albanian universities. A pilot-tested 20-item online questionnaire was used. Associations were evaluated using chi-square tests, Welch's analysis of variance, and fully adjusted multivariable binary logistic regression, with adjusted odds ratios (aORs) and 95% confidence intervals (CIs).

Results: Mean perceived knowledge and attitude scores were 25.7 (range 6–30) and 4.0 (range 0–7), respectively. The most frequent single barriers were limited access to information resources (103; 14.3%) and insufficient interaction with institutional staff (100; 13.9%); 286 (39.7%) selected all listed barriers. University was associated overall with participation ($p = 0.012$); relative to Fan Noli, the odds were higher at Aleksandër Xhuvani (aOR = 2.38, 95% CI 1.26–4.49) and the University of Medicine, Tirana (aOR = 4.16, 95% CI 1.83–9.46). Lack of institutional motivation (aOR = 0.31, 95% CI 0.20–0.48), insufficient literature (aOR = 0.30, 95% CI 0.21–0.42), and perceived knowledge (aOR = 1.13 per point, 95% CI 1.07–1.19) were also associated with participation (all $p < 0.001$).

Conclusion: Participation in scientific events was associated with university, institutional motivation, access to scientific literature, and perceived knowledge. Structured research training, mentorship, and access to scholarly resources may support participation, but longitudinal studies are needed to assess causal effects.

Keywords: education, medical; research; students, health occupations

INTRODUCTION

Scientific research in the health sciences supports evidence-based practice, improves healthcare, and informs health policy (1). Research literacy and early participation are therefore important components of medical and health sciences education. However, favourable attitudes do not necessarily indicate adequate methodological knowledge or active participation in research (2).

Studies among medical and health sciences students have identified gaps in research knowledge, methodological skills, and practical experience. A survey in Jordan found favourable attitudes but limited participation and several educational and institutional barriers (3). Medical students in Egypt similarly reported constraints related to training, mentorship, time, and resources (4). Participation in scientific activities may also vary by academic level, field of study, and institutional environment; positive attitudes alone may therefore be insufficient to produce sustained participation.

Published evidence on research participation among medical sciences students in Albania remains limited. Internationally indexed research output from Albania also remains comparatively modest (5). Policy analyses have identified continuing challenges in the national research and innovation environment (6). European cooperation mechanisms can support capacity-building through international research networks (7). UNESCO has likewise emphasised investment in science, technology, and innovation capacity (8). Regional findings from Bosnia and Herzegovina provide relevant context: students and staff at the University of Sarajevo generally considered research important, but knowledge and participation were limited and barriers were common (9). A national study of biomedical students in Bosnia and Herzegovina found low participation in research and scientific events, while inadequate methodological knowledge and weak awareness were prominent obstacles (10).

The aim of this study was to assess perceived research knowledge, attitudes, barriers, and factors associated with participation in scientific events among medical sciences students in Albania.

MATERIAL AND METHODS

Participants and study design

A cross-sectional study using convenience sampling was conducted between October 2024 and February 2025 among medical sciences students at several public and private universities in Albania. The study was reported in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidance for cross-sectional studies. Eligible participants were students enrolled in the third year of a Bachelor's programme or in a Professional Master's or Scientific Master's programme in nursing, physiotherapy, speech therapy, laboratory technology, or medical imaging. Only students who provided electronic informed consent and submitted a completed questionnaire were included.

Methods

Data were collected using a structured 20-item online questionnaire assessing participant characteristics, perceived research knowledge, attitudes, institutional motivation, participation in scientific events, access to scientific literature, future research intentions, and perceived barriers. The perceived knowledge score comprised six five-point Likert items coded from 1 ('strongly disagree') to 5 ('strongly agree'), yielding a total of 6–30. The attitude score comprised seven dichotomous items coded 0 ('no') or 1 ('yes'), yielding a total of 0–7. Higher scores indicated greater perceived knowledge and more favourable attitudes; no items were reverse-coded, and no categorical cut-offs were applied. Participation in scientific events was defined as self-reported attendance at a scientific meeting, conference, or congress and coded as no or yes. Participants selected one of seven predefined barrier responses, including an 'all listed barriers' option. The questionnaire was pilot-tested with 20

students and reviewed by subject-matter experts for clarity and content. Cronbach's α was 0.88 for perceived knowledge and 0.71 for attitudes. Completion required approximately 10 minutes.

A total of 1,600 eligible students received the survey invitation; 721 submitted completed questionnaires and were included, giving a response rate of 45.1%. No formal a priori sample-size calculation was performed. For transparency, the nominal margin of error for 721 participants would be approximately ± 3.7 percentage points at a two-sided 95% confidence level and a population proportion of 50% under simple random sampling. Because convenience sampling was used, this value describes theoretical precision only and does not demonstrate population representativeness. Selection and non-response bias were considered when interpreting the findings.

Statistical analysis

Descriptive statistics comprised n (%), means, and standard deviations. Associations between categorical variables were assessed using Pearson's chi-square test, with Cramér's V as the effect-size measure. Homogeneity of variance was assessed using Levene's test. Because this assumption was violated, Welch's analysis of variance (ANOVA) was used to compare mean perceived knowledge and attitude scores across universities, fields of study, and degree programmes. Significant omnibus tests were followed by Games–Howell post hoc comparisons. Eta-squared (η^2) was reported as a descriptive measure of effect size. Perceived knowledge (range 6–30) and attitude (range 0–7) scores were calculated by summing the relevant items and were analysed as continuous variables. Fully adjusted multivariable binary logistic regression was used to examine factors associated with participation in scientific events (0 = no, 1 = yes). Age group, sex, university, field of study, degree programme, institutional motivation, perceived sufficiency of research literature, and

perceived knowledge score were entered simultaneously, irrespective of univariable statistical significance. Adjusted odds ratios (aORs) and 95% confidence intervals (CIs) were reported. Model fit was assessed using the Hosmer–Lemeshow goodness-of-fit test, and explanatory performance was summarised using Nagelkerke’s pseudo- R^2 . Linearity in the logit for the continuous perceived knowledge score was assessed using the Box–Tidwell procedure. Statistical significance was set at $p < 0.05$. Statistical analyses were performed using IBM SPSS Statistics (version 27, IBM Corp., Armonk, NY, USA).

RESULTS

Among 721 participants, 425 (58.9%) were aged 18–21 years and 567 (78.6%) were female. The largest groups attended Aleksandër Xhuvani University (211; 29.3%) or the University of Medicine, Tirana (UMT) (197; 27.3%); 152 (21.1%) attended the European University of Tirana (UET). Bachelor’s students comprised 337 (46.7%) participants, followed by 286 (39.7%) in scientific master’s and 98 (13.6%) in professional master’s programmes (Table 1). The most frequent single barriers were limited access to information resources (103; 14.3%) and insufficient interaction with institutional staff (100; 13.9%), followed by time constraints (72; 10.0%) and lack of interest (71; 9.8%). A total of 286 (39.7%) participants selected the ‘all listed barriers’ response (Table 2).

University groups differed in perceived knowledge ($F = 10.11$; $p < 0.001$; $\eta^2 = 0.07$) and attitudes ($F = 15.14$; $p < 0.001$; $\eta^2 = 0.07$) (Table 3). UMT students had lower perceived knowledge scores than all other university groups, while the ‘other universities’ group scored higher than UET. For attitudes, UMT and Fan Noli students scored lower than students at Aleksandër Xhuvani University, UET, and other universities. Fields of study differed in perceived knowledge ($F = 2.56$; $p = 0.031$; $\eta^2 = 0.02$), although no pairwise comparison was significant; attitudes did not differ by field ($F = 1.23$; $p = 0.301$; $\eta^2 = 0.01$). Degree programmes differed in perceived knowledge ($F = 37.13$; $p < 0.001$; $\eta^2 = 0.17$) and attitudes

($F = 27.21$; $p < 0.001$; $\eta^2 = 0.10$). Professional Master's students scored lower than Bachelor's and Scientific Master's students on both outcomes. Bachelor's students also had higher perceived knowledge scores than scientific master's students, whereas their attitude scores did not differ (Table S1).

University was associated with institutional motivation ($\chi^2 = 100.78$; $p < 0.001$; Cramér's $V = 0.37$) and participation in scientific events ($\chi^2 = 81.16$; $p < 0.001$; Cramér's $V = 0.34$). Degree programme showed smaller associations with motivation (Cramér's $V = 0.23$) and participation (Cramér's $V = 0.29$), while associations with field of study were small (Cramér's $V = 0.14$ – 0.18) (Table 4).

Institutional motivation was associated with participation in scientific events ($\chi^2 = 66.88$; $p < 0.001$; Cramér's $V = 0.30$) and future research plans ($\chi^2 = 20.71$; $p < 0.001$; Cramér's $V = 0.17$). Perceived sufficiency of research literature was also associated with participation ($\chi^2 = 35.29$; $p < 0.001$; Cramér's $V = 0.22$) and future plans ($\chi^2 = 14.22$; $p < 0.001$; Cramér's $V = 0.14$) (Table 5).

The fully adjusted model was significant ($\chi^2 = 175.97$; $p < 0.001$), with a Nagelkerke pseudo- R^2 of 0.296 (Table S2). The Hosmer–Lemeshow test indicated no evidence of poor fit ($\chi^2 = 8.84$; $p = 0.356$), and the Box–Tidwell test indicated no departure from linearity in the logit for perceived knowledge (regression coefficient [B] = 0.238; standard error [SE] = 0.178; $p = 0.181$). University was associated overall with participation in scientific events ($p = 0.012$). Relative to Fan Noli, the odds of participation were higher at Aleksandër Xhuvani University (aOR = 2.38; 95% CI 1.26–4.49; $p = 0.008$) and the University of Medicine, Tirana (aOR = 4.16; 95% CI 1.83–9.46; $p = 0.001$); the other university contrasts were not significant. Age group, sex, field of study, and degree programme were not independently associated with participation. Lack of institutional motivation was associated with 69% lower odds of participation (aOR = 0.31; 95% CI 0.20–0.48; $p < 0.001$), and insufficient research literature

with 70% lower odds (aOR = 0.30; 95% CI 0.21–0.42; $p < 0.001$). Each one-point increase in perceived knowledge was associated with 13% higher odds of participation (aOR = 1.13; 95% CI 1.07–1.19; $p < 0.001$).

DISCUSSION

The principal findings were that students reported relatively high perceived research knowledge but only moderate attitudes, while participation in scientific events was independently associated with university, institutional motivation, access to scientific literature, and perceived knowledge. A similar coexistence of favourable attitudes and incomplete practical participation has been reported among medical students in Türkiye (2). A Jordanian survey also found that positive attitudes were not consistently accompanied by research experience (3). An Indian study likewise identified a gap between research knowledge, attitudes, and active participation (11). These patterns suggest that interest may not translate into participation without structured training, mentorship, and access to scholarly resources.

Regional evidence supports this interpretation. At the University of Sarajevo, research was widely viewed as important despite limited knowledge and substantial perceived barriers (9). Among biomedical students across Bosnia and Herzegovina, research participation and attendance at scientific events were also low, and inadequate methodological knowledge and weak awareness were prominent obstacles (10). A study among medical students in Sudan similarly identified limited knowledge and structural barriers to research participation (12).

The present findings extend this evidence by showing that both university and institutional support were independently associated with participation in scientific events in Albania.

Variation across degree programmes should not be interpreted as a simple effect of academic seniority. Differences in curriculum design, exposure to research methods, mentorship, and opportunities for participation may explain why professional master's students reported lower

perceived knowledge and attitudes than the other groups. Because the study was cross-sectional, the direction of these relationships cannot be established.

The associations with institutional motivation and literature access emphasise the role of the academic environment. A multi-component educational and motivational strategy has been associated with more favourable student perceptions of research (13). Undergraduate medical and dental students elsewhere have identified lack of time, skills, funding, and facilities as major barriers (14). A study of undergraduate healthcare students similarly highlighted gaps in access, training, and institutional support (15). Comparable barriers have been documented among medical students in Nepal (16). Taken together, these findings support coordinated institutional approaches rather than isolated short courses.

The high proportion selecting all listed barriers suggests that limited participation may reflect overlapping constraints. Universities could combine research-methods teaching with mentorship, supervised student projects, protected time, and reliable access to databases and full-text literature. These measures should be evaluated prospectively, because the present data cannot show that they would increase participation.

In Albania, such strategies may be particularly relevant where research training and access to resources differ across institutions. European evidence has also shown that students may value research while participating infrequently (17). Longitudinal evidence suggests that interest in research may decline during medical training, supporting earlier curricular integration (18). Standardised curricular content and cross-university mentorship networks could reduce institutional disparities, but local feasibility, resource requirements, and student needs should be assessed before implementation.

This study has several limitations. Convenience sampling and the 45.1% response rate may have introduced selection and non-response bias, limiting representativeness and generalisability. The cross-sectional design precludes temporal or causal inference, and

residual confounding by unmeasured individual, academic, or institutional factors remains possible. All measures were self-reported and may have been affected by recall and social desirability; in particular, the perceived knowledge score did not objectively test methodological knowledge. The study-specific questionnaire underwent pilot testing, expert review, and internal-consistency assessment but not formal construct validation. The single-choice barrier item, including an 'all listed barriers' option, did not permit analysis of specific barriers occurring together. Because university, field of study, and degree programme were entered simultaneously without reported collinearity diagnostics, multicollinearity among these variables cannot be excluded. Finally, the predominance of female participants may limit applicability to populations with a different sex distribution.

CONCLUSION

Among medical sciences students in Albania, participation in scientific events was associated with university, perceived knowledge, institutional motivation, and access to scientific literature. Because the study was cross-sectional and used convenience sampling, these associations should not be interpreted causally. Universities should prioritise structured research-methods training, mentorship, and access to scholarly resources; longitudinal and intervention studies are needed to determine whether such measures improve sustained participation in research-related activities.

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CONFLICTS OF INTEREST

None to declare.

AUTHOR CONTRIBUTIONS (CRediT)

Conceptualization: RS, BB, KH; Methodology: AT, ST, EH; Investigation: ED, RO, EH; Formal analysis: ST, AT; Writing – original draft: RS, BB; Writing – review and editing: RS, BB, KH. All authors have read and agreed to the published version of the manuscript.

ETHICS STATEMENT

This study was conducted in accordance with the Declaration of Helsinki. Participation was voluntary, and all participants provided electronic informed consent before completing the questionnaire. Under the national requirements applicable to anonymous, non-interventional survey research in Albania, formal ethics committee approval was not required.

DATA AVAILABILITY STATEMENT

The datasets generated and analysed during the study are available from the corresponding author upon reasonable request.

REFERENCES

1. World Health Organization. Strengthening health research and evidence-based decision-making [Internet]. Geneva: World Health Organization; [cited 2026 Mar 14]. Available from: <https://www.who.int/westernpacific/activities/strengthening-health-research-and-evidence-based-decision-making>.
2. Mokresh ME, Muvaffak E, Kahya M, Torun P, Bavadekji M, Faiyad M. Knowledge, attitudes, and barriers toward research among medical students: a cross-sectional study in Turkey. *Med Sci Educ* 2024;34:387-95. doi: 10.1007/s40670-024-01987-0.
3. Abusamak M, AlQato S, Alrfooh HH, Altheeb R, Bazbaz L, Suleiman R, et al. Knowledge, attitudes, practices and barriers of medical research among undergraduate medical students in Jordan: a cross-sectional survey. *BMC Med Educ* 2024;24:23. doi: 10.1186/s12909-023-05002-9.
4. Orebi HA, Shahin MR, Allah MTA, Hegazy AH, Alshakhs MA, Alaithan AM, et al. Medical students' perceptions, experiences, and barriers towards research implementation at the Faculty of Medicine, Tanta University. *BMC Med Educ* 2023;23:902. doi: 10.1186/s12909-023-04884-z.
5. SCImago Journal & Country Rank. Country rankings: Albania [Internet]. SCImago Research Group; 2023 [cited 2026 Mar 14]. Available from: <https://www.scimagojr.com/countryrank.php?country=AL>.
6. European Movement in Albania. Research and innovation challenges in Albania [Internet]. Tirana: European Movement in Albania; 2024 [cited 2026 Mar 16]. Available from: <https://em-al.org/en/category/publications-en/policy-documents-en/>.
7. COST Association. COST actions: European cooperation in science and technology [Internet]. Brussels: COST Association; 2024 [cited 2026 Mar 16]. Available from: <https://www.cost.eu/cost-actions/>.

8. UNESCO. Science, technology and innovation for sustainable development. Paris: United Nations Educational, Scientific and Cultural Organization; 2021.
9. Selak N, Šehić M, Kudić B, Ećo I, Spahić Šehić B, Kulo Ćesić A. Scientific research in biomedical studies: insights and barriers at the University of Sarajevo. *Med Glas (Zenica)* 2025;22:138-44. doi: 10.17392/1863-22-01.
10. Begagic E, Duzic N, Memic Z, Arandelovic N, Celebic A, Beculic H. Usage of students' potential in biomedical and health care research in Bosnia and Herzegovina. *Medeni Med J* 2021;36:44-51. doi: 10.5222/MMJ.2021.47715.
11. Putul M, Mahanta K, Ullah K, Jyoti DS, Jyoti DB. Knowledge and attitudes amongst medical students on health research and scientific publications. *Indian J Forensic Med Toxicol* 2021;15:395-9. doi: 10.37506/ijfmt.v15i2.14341.
12. Abdalla MOM, Salih AAM, Suareldahab OMI, Abdulraheem DEM, Elbasheer DAA, Abdallahbai EAH. Knowledge, attitudes and barriers toward medical research among Al-Neelain medical students, Sudan [Internet]. *Int J Med Stud* 2025;12:S390. [cited 2026 Mar 14]. Available from: <https://ijms.pitt.edu/IJMS/article/view/2944>.
13. Quintero B, Maldonado-Rengel R, Morillo-Puente S, Burneo-Sánchez E. Attitudes toward and perceptions of barriers to research among medical students in the context of an educational and motivational strategy. *BMC Med Educ* 2025;25:635. doi: 10.1186/s12909-025-07229-0.
14. Soe HHK, Than NN, Lwin H, Htay MNN, Phyu KL, Abas AL. Knowledge, attitudes, and barriers toward research: the perspectives of undergraduate medical and dental students. *J Educ Health Promot* 2018;7:23. doi: 10.4103/jehp.jehp_61_17.
15. Alwhaibi RM, Omer AB, Alamri LM, Alyousef BF, Aljumaah NK, Alqahtani RK, et al. Assessing the knowledge, attitudes and barriers of undergraduate healthcare students towards

scientific research: a cross-sectional study. Res Sq [Preprint] 2023. doi: 10.21203/rs.3.rs-3197150/v1.

16. Baral KR, Koirala S, Kharel A, Upadhyay HP, Bansal P. Knowledge, attitude, practice and barriers toward research among undergraduate medical students. J Coll Med Sci Nepal 2023;19:167-74. doi: 10.3126/jcmsn.v19i2.52514.

17. Cuschieri A, Cuschieri S. Medical students' perceptions on research: results from a small European island state. Med Sci Educ 2021;31:1991-9. doi: 10.1007/s40670-021-01426-4.

18. Sanabria-de la Torre R, Quiñones-Vico MI, Ubago-Rodríguez A, Buendía-Eisman A, Montero-Vílchez T, Arias-Santiago S. Medical students' interest in research: changing trends during university training. Front Med 2023;10:1257574. doi: 10.3389/fmed.2023.1257574.

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TABLES AND FIGURES

Table 1. Participant characteristics

Characteristic	n (%)
Age	
18–21 years	425 (58.9)
22–25 years	213 (29.5)
>25 years	83 (11.5)
Sex	
Female	567 (78.6)
Male	154 (21.4)
University	
Aleksandër Xhuvani	211 (29.3)
UET	152 (21.1)
UMT	197 (27.3)
Fan Noli	101 (14.0)
Other universities	60 (8.3)
Degree programme	
Bachelor's	337 (46.7)
Professional Master's	98 (13.6)
Scientific Master's	286 (39.7)

n, number of participants; UET, European University of Tirana; UMT, University of Medicine, Tirana

Table 2. Perceived barriers to research engagement

Perceived barrier	n (%)
Time constraints	72 (10.0)
Insufficient interaction with institutional staff	100 (13.9)
Lack of financial resources	36 (5.0)
Limited access to information resources	103 (14.3)
Lack of interest	71 (9.8)
Lack of training	53 (7.4)
All listed barriers	286 (39.7)
Total	721 (100.0)

n, number of participants. Participants selected one response option; percentages may not total 100 because of rounding

Table 3. Perceived research knowledge and attitudes by university, field of study, and degree programme

Category	n	Perceived knowledge Mean ± SD	F	p	η²	Attitudes Mean ± SD	F	p	η²
University									
Aleksandër Xhuvani	211	26.4 ± 3.1	10.11	< 0.001	0.07	4.4 ± 1.9	15.14	< 0.001	0.07
UET	152	25.8 ± 3.2				4.3 ± 1.9			
UMT	197	24.1 ± 5.3				3.3 ± 2.3			
Fan Noli	101	26.3 ± 2.8				3.3 ± 1.5			
Other universities	60	27.2 ± 2.8				4.7 ± 1.7			
Field of study									
Physiotherapy	110	25.5 ± 4.3	2.56	0.031	0.02	4.0 ± 2.2	1.23	0.301	0.01
Medical imaging	100	25.4 ± 4.0				3.9 ± 2.0			
General nursing	346	25.9 ± 3.5				4.0 ± 1.9			
Midwifery	70	26.5 ± 2.9				4.0 ± 2.0			
Speech therapy	20	23.2 ± 5.5				3.0 ± 2.3			
Laboratory technology	75	25.1 ± 4.8				3.6 ± 2.2			
Degree programme									
Bachelor's	337	26.6 ± 2.9	37.13	< 0.001	0.17	4.2 ± 1.8	27.21	< 0.001	0.10
Professional master's	98	21.7 ± 5.5				2.3 ± 2.4			
Scientific master's	286	25.9 ± 3.4				4.2 ± 1.9			

F, Welch's ANOVA statistic; n, number of participants; SD, standard deviation; UET, European University of Tirana; UMT, University of Medicine, Tirana; η², eta-squared

Table 4. Associations of participant characteristics with institutional motivation and participation in scientific events

Category	Institutional motivation				Scientific-event participation			
	No	Yes	p	Cramér's V	No	Yes	p	Cramér's V
	n (%)				n (%)			
University								
Aleksandër Xhuvani	46 (21.8)	165 (78.2)	< 0.001	0.37	75 (35.5)	136 (64.5)	< 0.001	0.34
UET	25 (16.4)	127 (83.6)			34 (22.4)	118 (77.6)		
UMT	116 (58.9)	81 (41.1)			79 (40.1)	118 (59.9)		
Fan Noli	33 (32.7)	68 (67.3)			75 (74.3)	26 (25.7)		
Other universities	9 (15.0)	51 (85.0)			12 (20.0)	48 (80.0)		
Field of study								
Physiotherapy	37 (33.6)	73 (66.4)	< 0.001	0.18	43 (39.1)	67 (60.9)	0.010	0.14
Medical imaging	29 (29.0)	71 (71.0)			28 (28.0)	72 (72.0)		
General nursing	100 (28.9)	246 (71.1)			129 (37.3)	217 (62.7)		
Midwifery	14 (20.0)	56 (80.0)			38 (54.3)	32 (45.7)		
Speech therapy	11 (55.0)	9 (45.0)			11 (55.0)	9 (45.0)		
Laboratory technology	38 (50.7)	37 (49.3)			26 (34.7)	49 (65.3)		
Degree programme								
Bachelor's	86 (25.5)	251 (74.5)	< 0.001	0.23	128 (38.0)	209 (62.0)	< 0.001	0.29
Professional master's	57 (58.2)	41 (41.8)			70 (71.4)	28 (28.6)		
Scientific master's	86 (30.1)	200 (69.9)			77 (26.9)	209 (73.1)		

n, number of participants; UET, European University of Tirana; UMT, University of Medicine, Tirana

Table 5. Associations of institutional motivation and literature access with participation in scientific events and future research plans

Category	Scientific-event participation				Future research plans			
	No	Yes	p	Cramér's V	No	Yes	p	Cramér's V
	n (%)				n (%)			
Institutional motivation								
No	137 (59.8)	92 (40.2)	< 0.001	0.30	120 (52.4)	109 (47.6)	< 0.001	0.17
Yes	138 (28.0)	354 (72.0)			170 (34.6)	322 (65.4)		
Perceived sufficiency of research literature								
No	221 (45.7)	263 (54.3)	< 0.001	0.22	218 (45.0)	266 (55.0)	< 0.001	0.14
Yes	54 (22.8)	183 (77.2)			72 (30.4)	165 (69.6)		

n, number of participants