

Original Research Article

Quality of training and satisfaction level among epidemiology and public health graduates in Tamil Nadu, South India: a descriptive cross-sectional survey

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ABSTRACT

Background: Epidemiology and public health are foundational to public health science, with educators playing a critical role in preparing future professionals to influence health policy and programs. The Tamil Nadu Dr. MGR Medical University offers a master of science in epidemiology and public health to ensure high-quality training for its graduates. This study aimed to evaluate the satisfaction levels of graduates from these programs and assess the overall quality of training provided.

Methods: An online survey was conducted from May to June 2024 among graduates from Tamil Nadu Dr. MGR Medical University. The survey, administered via Google forms, included questions on course content, faculty effectiveness, and training impact. Data was analyzed using descriptive statistics and factor analysis to identify key components influencing student satisfaction.

Results: Of the 54 respondents, most were aged 23-33 years and predominantly female. The majority had graduated after 2020, with significant representation in government positions. The results revealed high satisfaction with course content and faculty effectiveness. Key components contributing to satisfaction included effective course materials, enthusiastic and supportive faculty, and valuable peer learning experiences. The affordability and academic rigor of the programs were also positively highlighted.

Conclusions: This study highlights the positive impact of epidemiology and public health programs at Tamil Nadu Dr. MGR Medical University. Graduates reported high satisfaction with course content, faculty effectiveness, and instruction quality. The programs' affordability and academic rigor were also appreciated, confirming success in preparing graduates for professional careers and highlighting their value in the field.

Keywords: Epidemiology and public health training, India, Satisfaction survey, Tamil Nadu

INTRODUCTION

Epidemiology, as the foundational science of public health, systematically examines the relationships between health or disease and various health-related factors within human populations.¹ Educators in epidemiology and public health play a crucial role in this field by providing high-quality instruction and practical experience to their

students. This comprehensive training ensures that future professionals in both epidemiology and public health are well-prepared to influence health policy and effectively implement health programs. A degree in epidemiology or public health creates a wide range of career opportunities. Some students pursue these fields to become community health workers, directly engaging with the populations they serve. Others aspire to become program

coordinators, designing and implementing public health initiatives. Additionally, many students aim to become educators or researchers, contributing to the advancement of health and well-being on a broader scale. The diverse career paths available to epidemiology and public health graduates underscore the importance of their education in shaping the future of public health.²

To develop proficient epidemiology and public health professionals, “quality teaching” is crucial, though it remains a polysemic term and can be challenging to define.^{3,4} In research, both “quality teaching” and “effective teaching” encompass a broad range of skills, practices, and traits, including subject knowledge, clarity of instruction, enthusiasm, empathy, preparation, approaches to feedback, maintaining an organized learning environment, and teacher-student rapport.^{3,5}

Recognizing the importance of such teaching standards, the Tamil Nadu Dr. MGR Medical University took a significant step by introduced a two-year master of science in epidemiology course in 2001 and later launched a master of science in public health in 2017 under the department of epidemiology. Based in Chennai and supported by the Government of Tamil Nadu, these initiatives reflect the university’s commitment to providing high-quality education and ensuring that future professionals are well-prepared to address critical public health challenges.⁶ Similarly to the importance of effective teaching, understanding the impact of training programs is crucial. Therefore, this study aimed to assess the satisfaction levels of graduates in epidemiology and public health from the Tamil Nadu Dr. MGR Medical University and evaluate the overall quality of the training provided. By exploring these aspects, the study seeks to gain insights into how well these programs prepare students for their professional roles and meet educational standards.

Objectives

To determine the levels of satisfaction among graduated epidemiology and public health students. To assess the overall quality of the training provided at the Tamil Nadu Dr. MGR Medical University.

METHODS

This study employed an online survey to assess the quality of training provided by the epidemiology and public health programs. The survey was administered via a Google forms questionnaire, distributed to graduates of the Tamil Nadu Dr. MGR Medical University. Data collection occurred from May to June 2024. The questionnaire was designed to gather comprehensive feedback on various aspects of the training programs, including course content, faculty effectiveness, and alignment with professional needs. It included multiple-choice and Likert scale questions to quantify respondents’ experiences and perceptions. Respondents were selected

from a list of graduates who completed their training between 2010 and 2023. The survey link was shared through university email lists and alumni networks to ensure broad participation. Data was collected anonymously to encourage honest feedback. Descriptive statistics summarized the proportions and distributions of responses. Additionally, factor analysis was used to identify key components of the training and student satisfaction.

RESULTS

In Table 1, majority of the respondents are in the age group of 23 to 33 years 42 (77.8%), indicating a younger cohort.

Table 1: Demographic distribution of respondents (n=54).

Variables	Frequency	Percentage
Age (years)		
23-33	42	77.8
33-43	8	14.8
43-53	3	5.6
>53	1	1.9
Gender		
Male	9	16.7
Female	45	83.3
Graduated students by course		
Epidemiology	23	42.6
Public health	31	57.4
Year of passing		
2010-2015	10	18.5
2016-2020	7	13
After 2020	37	68.5
Working organizations of respondents		
Government	26	48.1
Private	17	31.5
NGO	4	7.4
Self	7	12.9
Professional roles among respondents		
Academic and research	10	18.5
Project management and co-ordination	8	14.8
Quality and technical support	5	9.2
Medical and clinical	6	11.1
Editorial and publishing	2	3.7
Consultancy	4	7.4
Education and training	15	27.7
Freelance	4	7.4

Gender distribution shows a notable female majority 45 (83.3%). When examining educational backgrounds, most respondents have specialized in public health 31 (57.4%), while a substantial proportion focused on epidemiology 23 (42.6%). The table also highlights that a majority of graduates completed their studies after 2020, 37 (68.5%),

suggesting recent educational trends. Regarding employment, the largest proportion worked in government positions 26 (48.1%), followed by those in the private sector 17 (31.5%). Fewer were employed by NGOs 4 (7.4%) or are self-employed 7 (12.9%). The distribution of professional roles indicates that education and training is the most prevalent field 15 (27.7%), with

academic and research roles also being prominent 10 (18.5%). Project management and coordination roles 8 (14.8%) and medical and clinical roles 6 (11.1%) were moderately represented. Additionally, roles in editorial and publishing 2 (3.7%) and consultancy 4 (7.4%), along with freelance work 4 (7.4%), highlight a diverse range of professional engagements among the graduates.

Table 2: Factor analysis of key components influencing student satisfaction.

Component	Factor loading
Effectiveness of course materials and teaching methods	
Course notes and textbook helped attain learning	0.751
Faculty lectures facilitated note-taking	0.727
Increased interest in the subject	0.710
Faculty's presentation style held interest	0.708
Information on jobs and career opportunities	0.694
Faculty recognized and helped students needing more help	0.682
Faculty covered all syllabus within time	0.682
Faculty discussed current developments in the field	0.587
Faculty spoke clearly and was enthusiastic	0.575
Benefited greatly from course content	0.531
Faculty's presentations were well-prepared	0.507
Aspects of peer learning and collaborative activities	
Students encouraged to work in groups	0.826
Developed better communication skills through peer learning	0.789
Encouraged to share ideas	0.781
Peer learning helped focus during lectures	0.686
Improved critical thinking skills through peer learning	0.616
Encouraged to participate in class discussions	0.579
Faculty support and feedback	
Faculty supported critical thinking and independent learning	0.684
Faculty helped in writing research projects	0.651
Faculty handled student discipline fairly	0.560
Feedback on exams was timely and valuable	0.550
Faculty showed genuine concern about students	0.507
Overall clarity of instruction and satisfaction with guidance provided for projects and dissertations	
Faculty explanations were clear	0.770
Project and dissertation received appropriate guidance	0.634
Overall satisfaction with the course	0.617
Attained learning outcomes of the course	0.612
Assistance in choosing project topics	0.542
Faculty availability and support	
Faculty available during office hours	0.813
Faculty discussed learning outcomes and objectives	0.720
Faculty available for help during office hours	0.537
Academic rigor and cost-effectiveness of the course	
Course intellectually challenging and stimulating	0.726
Cost-effectiveness of the master's degree	0.633
Quality of assignments and their impact on learning	
Questions promoted higher-level thinking	0.637
Assignments enhanced learning	0.566
Assignments, reports, and presentations were adequate	0.562
Field postings and assignments helped attain learning	0.555

Table 3: Course impact, faculty effectiveness, and student engagement.

Questions	Responses			
	Strongly agreed	Agreed	Neutral	Disagreed
Course impact and learning				
Benefitted greatly from the course content	22	23	9	-
Course intellectually challenging and stimulating	21	23	4	-
Interest in the subject has increased	30	18	5	1
Attained the learning outcomes of the course	24	24	5	1
Field postings/assignments helped to attain learning outcomes	33	16	5	-
Course notes/presentations and text book helped me attain the learning outcomes	26	18	8	2
Enthusiasm				
Faculty spoke clearly and was enthusiastic about teaching the course	26	19	9	-
Faculty's style of presentation held my interest during class	21	25	7	1
Faculty encouraged questions in the class	23	23	8	-
Faculty support critical thinking and independent learning	28	24	2	-
Faculty explained and helped in writing research projects	31	20	3	-
Faculty asks questions that tap higher level thinking	28	21	4	1
Faculty recognized which students need more help and helped with their need	25	18	10	1
Organization				
Faculty gave lectures which facilitated taking notes	22	25	6	1
Faculty explanations were clear	43	11	-	-
Faculty's presentations were well prepared and carefully explained	23	24	7	-
Faculty was available for help during his/her office hours	32	20	2	-
Faculty starts/ends their lectures on time	17	29	8	-
Group interaction				
Students were encouraged to participate in class discussions	29	22	3	-
Students were encouraged to share their ideas with others	28	19	7	-
Students were encouraged to work in groups to improve team work	29	16	9	-
Peer learning				
I improved my critical thinking skills through peer learning activities	22	21	11	-
I have developed better communication skills when giving and taking feedback and discussing comments with my peers	24	25	5	-
Peer learning helped me become more focused when listening to other's presentations and more involved in class discussion	22	25	7	-
Individual rapport				
Faculty handled student discipline fairly	24	22	4	-
Faculty sufficiently available to students during office hours or after class	28	20	6	-
Faculty had sincere interest in individual students	29	19	6	-
Faculty appeared to be genuinely concerned about students and their success in class	29	19	6	-
Breadth				
Faculty covered all the course syllabus in the time available	20	24	9	1
Faculty discussed all the objectives and learning outcomes and what expected from students at the start of the course	22	23	7	2
Faculty adequately discussed current development in the field	23	2	7	1

Table 4: Responses on examination practices, assignment quality, project/dissertation support.

Questions	Responses			
	Strongly agreed	Agreed	Neutral	Disagreed
Examinations				
Examinations papers were clearly written and tested course content as stressed by the faculty	23	23	8	-
Methods of evaluating student work were fair and appropriate	23	25	6	-
Feedback on examinations/tests was timely and valuable	24	22	8	-
Assignments				
Assignments, reports, and presentations were adequate and contributed to appreciation and understanding of subjects	24	19	10	1
Types of assignments were formative and further enhanced the learning outcomes of the course	23	24	6	1
Project/dissertation				
I received appropriate assistance from the faculty in choosing the topic for my thesis or dissertation based on current trends	33	18	3	-
From the beginning to end of my project/dissertation, I received guidance from faculty members	36	14	4	-

In Table 2, the factor analysis revealed the key components influencing student satisfaction. Effectiveness of course materials and teaching methods is highlighted by strong loadings such as the utility of course notes and textbooks (0.751) and engaging faculty lectures (0.727), demonstrating the critical role of comprehensive and well-presented content. Peer learning and collaborative activities also emerge as essential, with high loadings on group work (0.826) and communication skill development (0.789), indicating that collaborative environments enhance learning. Faculty support and feedback is another crucial factor, where high loadings on support for critical thinking (0.684) and research project assistance (0.651) reflect the value students place on personalized guidance. In terms of overall quality of instruction and project guidance, clear explanations (0.770) and strong project supervision (0.634) significantly contribute to student satisfaction. The importance of faculty availability and support is underscored by high loadings on faculty accessibility during office hours (0.813) and their role in discussing learning outcomes (0.720). The academic rigor and cost-effectiveness of the course is marked by the courses challenging nature (0.726) and its perceived affordability (0.633), showing that students appreciate both the academic demands and the value of the program.

In Table 3, the majority of respondents strongly agreed that the course content was beneficial, with 22 students (strongly agree) and 23 students (agree) affirming its impact. Most students found the course intellectually challenging and stimulating, with 21 (strongly agree) and 23 (agree) recognizing its stimulating nature. The course notably increased interest in the subject for 30 students

(strongly agree). Faculty performance was also rated highly; for instance, 26 students (strongly agree) felt that faculty were clear and enthusiastic, while 28 (strongly agree) acknowledged the support for critical thinking. Additionally, faculty's availability and lecture organization were well-received, with 32 (strongly agree) stating that faculty were available during office hours and 43 (strongly agree) recognizing clear explanations. Student engagement was positively reflected in their encouragement to participate and share ideas, with 29 (strongly agree) noting encouragement in class discussions and group work.

In Table 4, a majority, 23 respondents (43%), strongly agreed that examination papers were clearly written and effectively tested the course content, with a similar sentiment regarding the fairness and appropriateness of evaluation methods. Feedback on examinations was timely and valuable, as affirmed by 24 respondents (44%). Regarding assignments, 24 respondents (44%) strongly agreed that they were adequate and contributed to a better understanding of the subjects, while 23 respondents (43%) agreed that the types of assignments were formative and enhanced learning outcomes. In the context of the project/dissertation, 33 participants (61%) strongly agreed that they received appropriate assistance from faculty in selecting their thesis or dissertation topics based on current trends, and 36 participants (67%) strongly agreed that they received comprehensive guidance from faculty throughout the project.

In Figure 1, majority of participants 34 (63%), strongly agreed that the information provided about job and career opportunities by faculty was adequate. Additionally, 41

respondents (76%) strongly agreed that completing their master's degree was relatively inexpensive compared to other institutions.

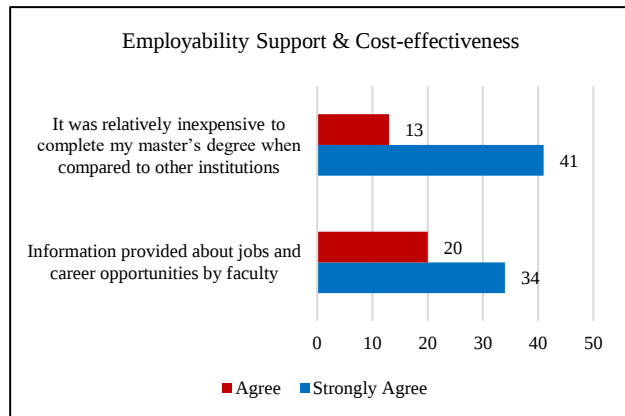


Figure 1: Employability support and cost-effectiveness.

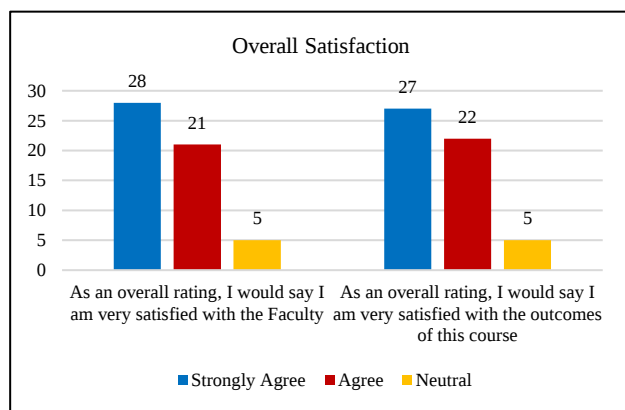


Figure 2: Overall satisfaction with faculty and course outcomes.

In Figure 2, majority of 28 participants (52%), strongly agreed that they are very satisfied with the faculty, while 27 participants (50%) strongly agreed that they are very satisfied with the outcomes of the course. Additionally, 21 respondents (39%) agreed with the faculty's satisfaction, and 22 respondents (41%) agreed with the course outcomes.

DISCUSSION

Demographic and professional background

The demographic profile of the current study predominantly features a younger cohort, with a significant representation of females, and a notable number of respondents specializing in public health. This pattern is consistent with observations made by Xu et al and Hu et al, which also identify a trend towards a younger demographic within public health programs.^{7,8} The predominance of respondents engaged in education and training, along with substantial representation in

academic and research and project management roles, reflects a heightened emphasis on roles that contribute to capacity building and knowledge dissemination. This finding is corroborated by the NIE study, which underscores the importance of core competencies and field assignments in shaping professional roles within the sector.⁹

Course impact and learning outcomes

Respondents conveyed a strong consensus regarding the benefits of the course, describing it as intellectually stimulating and effective in increasing their interest in the subject matter. These results align with the NIE study, which documented the efficacy of comprehensive and well-delivered course content in fostering core competencies.⁹ High ratings for faculty support and engagement reflect the positive impact of mentor involvement, as highlighted by Hu et al.⁸ The current study shows a high level of satisfaction when compared to Subedi et al with the clarity of faculty explanations and the structure of feedback.¹⁰

Examination practices and project support

The study reveals general satisfaction with examination practices and the support provided for assignments and projects. These findings are in accordance with Dinesh Kumar et al, which observed significant advancements in students' understanding of statistical concepts following targeted training.¹¹ The high level of support for thesis and dissertation topics reported in the current study reflects a commitment to comprehensive faculty guidance, aligning with the NIE study's emphasis on faculty involvement throughout field assignments.⁹ The focus on the adequacy of assignments and project support underscores the critical role these elements play in the learning process, reinforcing recommendations from Xu et al and Hu et al for enhanced support and resources to improve educational outcomes and research capacity.^{7,8}

Employability and cost-effectiveness

The study highlights strong agreement among respondents regarding the sufficiency of career information and the cost-effectiveness of the master's program. These findings are consistent with the NIE study's emphasis on aligning programs with current trends while maintaining cost-effectiveness.⁹ The current study's focus on the program's affordability compared to other institutions underscores the broader need for accessible public health education, reflecting the importance of maintaining educational opportunities that are both economically viable and effective.⁶

Factor analysis and key components

Factor analysis results underscore the significance of the effectiveness of course materials, peer learning, and faculty support as critical determinants of overall

satisfaction. These findings are congruent with the NIE study's emphasis on the importance of well-prepared materials and supportive faculty in achieving positive educational outcomes.⁹ The current study's results are consistent with Hu et al, which highlighted mentor support and research capacity development as key factors influencing student satisfaction.⁸ The strong loadings on these components emphasize their essential role in enhancing the educational experience and supporting student success.

CONCLUSION

In conclusion, this study highlighted the strong positive impact of the epidemiology and public health training programs at Tamil Nadu Dr. MGR Medical University. Graduates reported high satisfaction with the course content, faculty effectiveness, and the overall quality of instruction. The effectiveness of course materials, supportive faculty, and valuable peer learning opportunities were key components identified as contributing to student satisfaction. Additionally, the affordability and academic rigor of the programs were appreciated, reflecting the institution's commitment to delivering quality education. These findings affirm the programs' success in preparing graduates for their professional careers and underscore their value in the field.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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