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### **A Deterrent or A Determinant For The NIRF Ranking**

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#### **ABSTRACT**

The Indian government aspires to have fifty colleges and universities ranked among the top one thousand in the world. Alternatively, the National Institutional Ranking Framework (NIRF) was established to evaluate and rank Indian universities according to national criteria for accessible and inclusive education, with the overarching goal of achieving global leadership in this area. The study aims to investigate the factors that influence NIRF rankings and identify the specific areas where Punjab medical colleges and universities are lagging behind. It will explore strategies to improve their performance and achieve higher rankings on the NIRF list.

The study used secondary sources, such as journal articles, to collect primary data on NIRF rankings and citations from reputable sources like The Gazette of India. Qualitative findings were analyzed through peer review and a comprehensive literature review. This combination of secondary data analysis and critical evaluations provided a strong foundation for understanding the topic and thoroughly examining the findings.

The NIRF is the primary authority for evaluating universities. Punjab's medical institutions are hindered by the government's neglect of TLR&RP. Increased funding, active participation, and addressing deficiencies in healthcare, education, and research are crucial for improving rankings and achieving long-term success.

**KEYWORDS:** - NIRF ranking, TLR&RP parameter, medical colleges.

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## **INTRODUCTION**

NIRF rankings are essential for measuring institutional potential and fostering growth, helping institutions analyze their strengths and weaknesses, promote competition, and guide policy decisions. While India's medical education system is expanding, it still faces challenges in meeting international standards and addressing rural-urban disparities. To ensure a more equitable and effective healthcare system for the country, there is a pressing need for expansion and quality improvement, especially in research and infrastructure, as highlighted by<sup>1</sup>

University rankings are important for assessing institutional performance and promoting growth. They help institutions improve, compete, and attract talent, with a higher ranking often enhancing a university's reputation and learning environment, as noted by<sup>2</sup>

The research paper will focus on the evaluation of the medical institutions in NIRF. The analysis is made for 50 top-ranking medical colleges and institutions.

The NIRF ranks institutions based on 5 parameters: TLR (0.30), RP (0.30), GO (0.20), OI (0.10), and PR (0.10). These parameters are used to score and rank institutions in India.

TLR and RP are crucial for R&D, with a combined weightage of 0.42 in NIRF rankings. TLR includes Student strength including Doctoral Students (SS) and Combined metrics for faculty with Ph.D.(or equivalent) and Experience (FQE), each worth 20 points. RP includes Combined metric for Publications (PU), Combined metric for Quality of Publications (QP), IPR and Patents: Published and Granted (IPR), and Footprints of Projects and Professional Practice (FPPP), worth 40, 40, 10, and 10 points respectively.

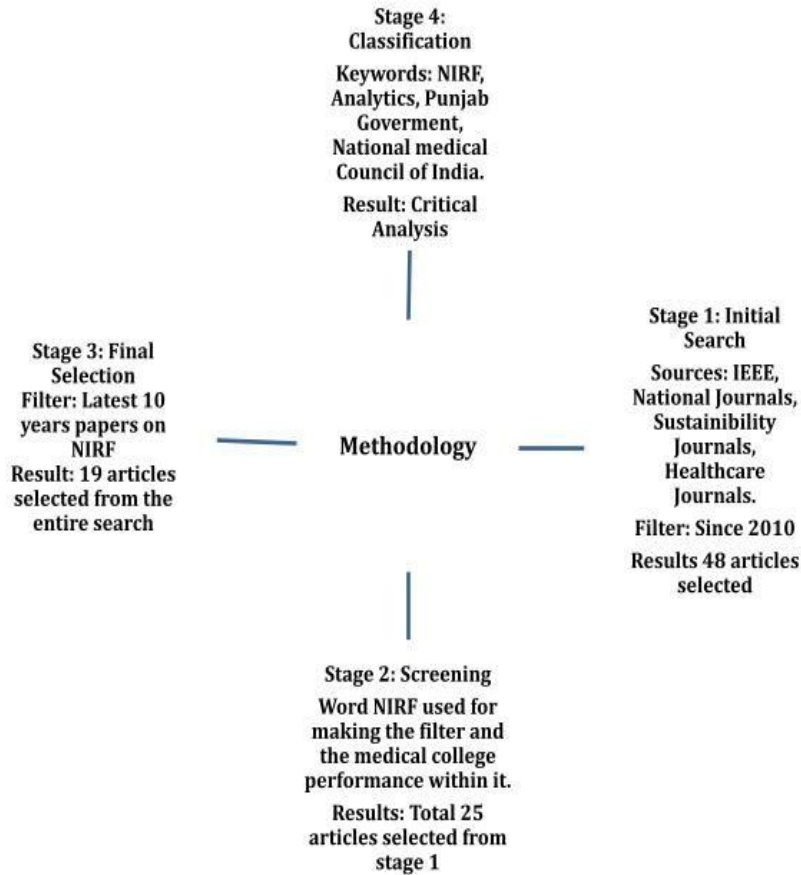
## **Research Aim**

The aim of the study is to address the factors based on which the NIRF ranking is given and what are the core factors based on which the Punjab Medical colleges and universities are lacking and how they can work to improve their position and grow their score in the NIRF ranking list.

## **Methodology**

The study relied on secondary data from existing research, including NIRF rankings and The Gazette of India. This approach ensured the credibility and reliability of the findings.

The selection of the articles was made as follows:

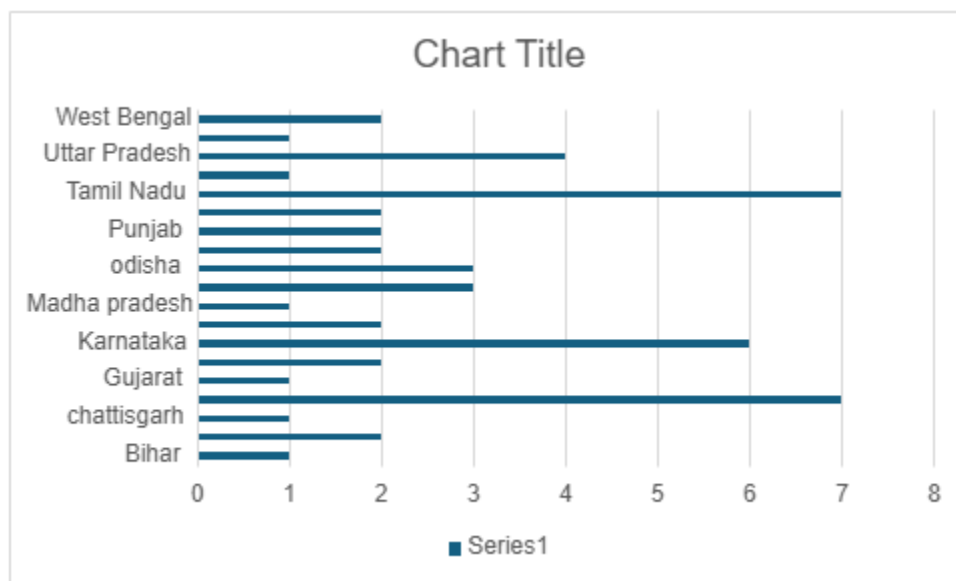


**Figure 1** illustrates the rigorous methodology employed in this study, encompassing a systematic four-stage process of initial search, screening, final selection, and classification to analyze NIRF data in medical colleges rigorously.

The qualitative study is made using the critical analysis which is made for the outcomes and the research analysis of other authors. While considering the research outcomes, the researcher has focused on peer review and making the critical study for all the presented thoughts and the existing research.

The study analyzed why Punjab medical institutions and colleges are not performing well in the National Institutional Ranking Framework (NIRF). It used secondary data and critically evaluated it. The study also examined the role of the Punjab government in improving the performance of these institutions.

## Geographical Distribution



**Fig 2** illustrates the geographical distribution of India's top medical colleges according to the 2024 NIRF rankings, offering a comprehensive overview of their locations and prominence.

## NIRF Medical Rankings

2018		2024	
State	No. of Colleges	State	No. of Colleges
Andhra Pradesh	1	Bihar	1
Chandigarh	1	Chandigarh	2
Delhi	6	Chhattisgarh	1
Karnataka	5	Delhi	7
Kerala	1	Gujrat	1
Maharashtra	1	Haryana	2
Madhya Pradesh	1	Karnataka	6
Manipur	1	Kerala	2
Odisha	2	Madhya Pradesh	1
Pondicherry	1	Maharashtra	3
Punjab	2	Odisha	3
Tamil Nadu	5	Pondicherry	2
Uttar Pradesh	4	Punjab	2
		Rajasthan	2
		Tamil Nadu	7
		Telangana	1
		Uttar Pradesh	4
		Uttarakhand	1
		West Bengal	2

**Table 1:** "NIRF Medical Rankings" witnessed significant changes from 2018 to 2024 with notable changes in the distribution of colleges among states.

**NIRF Ranking Framework for all All India Institute of Medical Sciences**

Institute	Participating (Year)	Year of establishment	Phase	Status	Ranking	Score (2024)	Score (2023)	Score (2022)	Score (2021)	Research Parameters (2024)					
										SS (20)	FQE (20)	PU (40)	QP (40)	IPR (10)	FPPP (10)
AIIMS New Delhi	Participating (2024/2023/2022/2021/2020)	1956		Fully Functional	1	94.46	94.32	91.60	92.07	20.00	17.33	40.00	40.00	7.00	7.82
AIIMS Jodhpur	Participating (2024/2023/2022/2021)	2012	I	Functional	16	62.57	62.43	57.47	52.87	16.54	17.22	22.06	18.09	2.50	6.01
AIIMS Bhubaneswar	Participating (2024/2023/2022/2021/2020)	2012	I	Functional	15	62.97	60.65	54.71	51.87	15.83	18.33	17.78	12.05	0.00	6.21
AIIMS Rishikesh	Participating (2024/2023/2022/2021/2020)	2012	I	Functional	14	63.16	60.06	47.98		15.58	17.86	24.42	16.21	2.00	5.87
AIIMS Patna	Participating (2024/2023/2022)	2012	I	Functional	26	58.24	57.30			15.33	16.44	12.90	10.06	2.00	8.21
AIIMS Bhopal	Participating (2024/2023/2022/2021/2020)	2012	I	Functional	31	57.66	53.94			15.13	18.49	11.60	12.05	0.50	6.11
AIIMS Raipur	Participating (2024/2023/2022/2021/2020)	2012	I	Functional	38	55.27	53.92	47.44		17.42	19.21	10.12	7.84	1.00	6.00

**Table 2** details NIRF ranking criteria for AIIMS, including participating year, establishment, phase, status, and rankings with scores for 2020-2024. It also provides research parameter scores (SS, FQE, PU, QP, IPR, FPPP) for 2024.

**TLR and RP scoring for top 10 ranked medical institutions (Research Perspective)**

Institute	Rank	Score	TLR		RP				Total = 140
			SS(20)	FQE(20)	PU(40)	QP(40)	IPR(10)	FPPP(10)	
“All India Institute of Medical Sciences, Delhi”	1	94.46	20.00	17.33	40.00	40.00	7.00	7.82	132.15
“Post Graduate Institute of Medical Education and Research, Chandigarh”	2	80.83	15.77	18.65	36.43	32.63	4.00	6.888	114.3
“Christian Medical College, Vellore”	3	75.11	18.36	19.19	17.26	20.91	2.50	7.25	85.47
“National Institute of Mental Health & Neuro Sciences, Bangalore”	4	71.92	15.50	19.18	26.27	21.72	0.00	9.74	92.41
“Jawaharlal Institute of Post Graduate Medical Education & Research, Puducherry”	5	70.74	19.70	18.92	22.38	16.43	0.00	6.03	83.46
“Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow”	6	70.07	13.75	16.67	24.28	21.57	1.50	6.68	84.45
“Banaras Hindu University, Varanasi”	7	69.54	17.97	18.92	23.64	25.76	0.00	6.06	92.35
“Amrita Vishwa Vidyapeetham, Coimbatore”	8	68.81	18.10	18.94	18.01	16.39	7.00	7.75	86.19
“Kasturba Medical College, Manipal”	9	67.42	19.54	18.75	20.31	19.89	2.50	7.53	88.52
“Madras Medical College & Government General Hospital, Chennai”	10	64.12	20	18.70	0.79	2.54	4.00	6.74	84.1

**Table 3** Shows the top 10 medical colleges in India according to India Rankings 2024 standards are shown in this table. Ranks academic institutions according to their research quality and status based on (TLR), (RP), (SS), (FQE), (PU), (QP), (IPR), and (FPPP) scores.

## Scoring TLR and RP for Medical Institutions Ranked 40 to 50 (Research Perspective)

Institute	Rank	Score	TLR		RP				Total = 140
			SS(20)	FQE(20)	PU(40)	QP(40)	IPR(10)	FPPP(10)	
“Dayanand Medical College, Ludhiana”	40	54.48	15.40	16.79	6.48	7.19	0.00	6.11	51.97
“PSG Institute of Medical Sciences & Research, Coimbatore”	41	53.11	17.34	18.85	1.51	8.40	0.50	5.81	52.41
“Government Medical College, Thiruvananthapuram”	42	52.30	18.50	17.77	2.85	8.37	0.00	5	52.49
“Sawai Man Singh Medical College, Jaipur”	43	51.91	19.76	18.62	5.16	5.79	0.00	5.36	54.69
“Medical College, Kolkata”	44	51.87	17.50	18.28	6.58	7.28	0.00	5.27	54.91
“Gujarat Cancer & Research Institute, Ahmadabad”	45	51.77	13.50	16.36	3.19	3.69	0.50	5.44	42.68
“M. S. Ramaiah Medical College, Bengaluru”	46	51.76	17.85	18.82	3.33	3.32	0.50	5.26	49.08
“Mahatma Gandhi Medical College and Research Institute, Puducherry”	47	51.02	18.46	17.56	3.63	3.40	6.00	6.38	55.43
“Osmania Medical College”	48	50.99	20	18.10	0.72	1.84	0.00	5.02	45.68
“Christian Medical College”	49	50.96	16	18.93	1.33	3.93	0.00	7.21	47.4
“PanditBhagwatDayal Sharma University of Health Sciences”	50	50.71	18.08	18.04	5.12	6.50	0.00	5.17	52.91

**Table 4** Elucidates the scoring intricacies for TLR and RP in medical institutions ranked from 40 to 50. The scoring breakdown encompasses TLR components, including SS, FQE, PU, and QP, alongside Research Perspective components, namely IPR and FPPP.

**Data Submitted by Institution for India Rankings '2024' Sponsored Research**

**Details**

Name	Financial Year	Total no. of Sponsored Projects	Total no. of Funding Agencies	Total Amount Received (Amount in Rupees)
All India Institute of Medical Sciences, Delhi [IR-D-N-15]	2022-23	904	170	1970827533
	2021-22	609	35	1018179784
	2020-21	618	44	1033763736
Post Graduate Institute of Medical Education and Research [IR-D-U-0079]	2022-23	918	114	710194411
	2021-22	951	115	653055997
	2020-21	876	118	535949920
Christian Medical College [IR-D-C-45654]	2022-23	576	168	1337173994
	2021-22	511	55	1108083210
	2020-21	61	33	650047817
National Institute of Mental Health & Neuro Sciences, Bangalore [IR-D-U-0236]	2022-23			
	2021-22	359	99	521910204
	2020-21	360	82	420568734
National Institute of Mental Health & Neuro Sciences, Bangalore [IR-D-U-0236]	2022-23	350	114	3306729656
	2021-22	359	99	521910204
	2020-21	360	82	420568734
Jawaharlal Institute of Post Graduate Medical Education & Research [IR-D-U-0368]	2022-23	119	48	159947362
	2021-22	129	44	151282823
	2020-21	95	41	111391478

**Table 5** Shows Sponsored Research Overview for Financial Years 2022-23 and 2021-22 and 2020-21



**Details of PhD students from top 5 NIRF ranked medical institutions (including integrated PhD/MD/MS/DNB)**

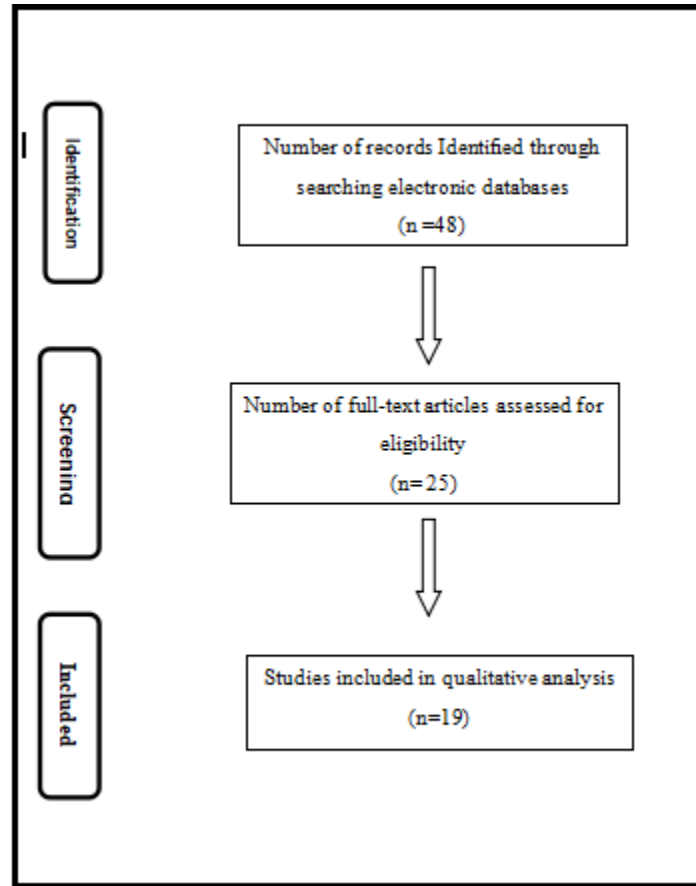
Name	Time period	Ph.D (Student pursuing doctoral program till 2022-23)	No. of Ph.D students graduated (including Integrated Ph.D)		
			2022-23	2021-22	2020-21
All India Institute of Medical Sciences, Delhi [IR-D-N-15]	Full Time	342	41	59	63
	Part Time	00	00	00	00
Post Graduate Institute of Medical Education and Research, Chandigarh [IR-D-U-0079]	Full Time	277	51	41	45
	Part Time	00	00	00	00
Christian Medical College, Vellore, Tamil Nadu [IR-D-C-45654]	Full Time	45	11	8	8
	Part Time	00	2	1	1
National Institute of Mental Health & Neuro Sciences, Bangalore [IR-D-U-0236]	Full Time	252	54	41	34
	Part Time	1	00	00	00
Jawaharlal Institute of Post Graduate Medical Education & Research, Pondicherry [IR-D-U-0368]	Full Time	61	14	195	15
	Part Time	00	00	00	00

**Table 6** Presents Ph.D. student data for the top 5 NIRF-ranked medical institutions. It includes full-time and part-time enrollment from 2020-21 and graduation counts for 2021-22 to 2022-23, covering both regular and integrated Ph.D. programs.

**Details of pursuing PG program students from top 5 NIRF ranked medical institutions**

Name	year	No. of students Graduating in PG (MD/MS/DNB) program	No. of students Graduating in Super Speciality program (DM/MCH)
All India Institute of Medical Sciences, Delhi [IR-D-N-15]	2022-23	264	195
	2021-22	277	190
	2020-21	272	180
Post Graduate Institute of Medical Education and Research, Chandigarh [IR-D-U-0079]	2022-23	275	110
	2021-22	267	112
	2020-21	280	116
Christian Medical College, Vellore, Tamil Nadu [IR-D-C-45654]	2022-23	169	72
	2021-22	141	56
	2020-21	146	11
National Institute of Mental Health & Neuro Sciences, Bangalore [IR-D-U-0236]	2022-23	36	47
	2021-22	38	38
	2020-21	41	36
Jawaharlal Institute of Post Graduate Medical Education & Research, Pondicherry [IR-D-U-0368]	2022-23	209	45
	2021-22	178	41
	2020-21	184	42

**Table 7** summarizes PG enrollment and graduation data for the top 5 NIRF-ranked medical institutions. It covers MD, MS, DNB, DM, and MCH programs for academic years 2020-21 to 2022-23.



**Figure 3** illustrates the PRISMA flow diagram, depicting the study selection process, starting with the identification of 48 records through electronic database searches, followed by screening to assess the eligibility of 25 full-text articles, ultimately resulting in the inclusion of 19 studies in the qualitative analysis.

## RESULTS

Punjab medical universities lag in NIRF rankings due to government's neglect of TLR&RP. Increased funding and support can boost performance. Institutions must self-reflect and address healthcare, education, and research issues. Encouraging faculty research is vital for future success.

## DISCUSSION

<sup>3</sup>Argues that the popularity of university ranking systems is driven by globalization, increased competition, and the growing need for information among students. <sup>4</sup>**Argues that the National Institutional Ranking Framework (NIRF) is a valuable tool for comparing different university**

**ranking systems.** It provides insights into factors like institutional coverage, rating methodologies, indicators used, and normalization processes, which can significantly impact the rankings of certain institutions.

<sup>4</sup>Finds that Indian institutions prioritize factors other than research and practice, even though research publications are assigned the highest weight of .40 or 40% in the NIRF.

**The TLR parameter of the NIRF focuses on teaching, learning, and resources.** It evaluates factors like faculty-to-student ratio, faculty qualifications, library and lab facilities, and extracurricular activities. Each component has a specific weight, and their combined score contributes to the overall TLR score.

**The Punjab government's neglect of research has significantly impacted its university rankings in the National Institutional Ranking Framework (NIRF).** While the "Research and Productivity" (RP) parameter carries the highest weight, Punjab's institutions struggle in this area due to a lack of government support and a focus on minimal research requirements for faculty promotions. In contrast, autonomous institutions like AIIMS/PGIMER excel in RP due to their emphasis on research and ability to publish high-quality work.

To improve its ranking, Punjab must prioritize research by offering grants and incentives to faculty. This will encourage institutions to focus on research and foster a culture of innovation. Additionally, the government should consider relaxing the minimum research requirements for faculty promotions to allow for more flexibility in pursuing research.

Another important parameter in the NIRF is "Graduation Outcomes" (GO). This parameter evaluates the success of students in completing their degrees and performing well in university and public exams. High GO scores indicate strong student outcomes and can contribute to a university's overall ranking.

**The NIRF's "Outreach and Inclusivity" (OI) parameter evaluates a university's efforts to reach diverse student populations.** It considers factors like student diversity, outreach initiatives, women's representation, and support for economically disadvantaged and special needs students. **The "Perception" (PR) parameter, while carrying the lowest overall weight, is still significant in the NIRF ranking.** It assesses a university's reputation based on peer ratings and the ratio of applications received to available seats.

**Based on the graph**, Punjab's medical education system is lagging behind, as evidenced by the fact that only two of its institutions are ranked among the top 50 nationwide. According to<sup>5</sup>, To improve the state's standing, the government should carefully examine the factors considered in the rankings and work with institutions to address their shortcomings, as stated by the same authors.

**The Punjab government's restriction on non-medical individuals engaging in research conflicts with the National Medical Association's stance.** The government's rule may hinder research progress and limit the potential contributions of individuals with diverse backgrounds. To align with the NMA's approach, the Punjab government should consider revising its policy to allow individuals with valid Ph.D. degrees, regardless of their medical background, to participate in research activities.

As per the<sup>6</sup>, Extraordinary Part III - Section 4, published by authority no. 103, New Delhi, on Tuesday, February 22, 2022, or Phalgun 3, 1943, the amendment allows individuals with non-medical qualifications to serve as faculty in Anatomy, Biochemistry, and Physiology, as listed in Table 1B: Index of Broad Specialties. This amendment has the potential to expand to other medical specialties, increasing the diversity of faculty and potentially improving medical education and research.

<sup>7</sup>stated that there is now only one centrally sanctioned ranking system in use in India, known as the National Institute Ranking Framework (NIRF). The evaluation of publications for university rankings relies heavily on SCOPUS and WoS databases. These databases are used by organizations like the UGC and NAAC for accreditation purposes, emphasizing their significance in the Indian academic landscape.

<sup>8</sup>argue that university rankings motivate institutions to strive for excellence and improve the quality of education. This benefits students in selecting suitable universities and attracts international students, contributing to the overall development of institutions.

<sup>9</sup> **highlight the University Grants Commission (UGC) as the key authority in India responsible for funding, maintaining standards, and coordinating higher education institutions.** State universities are established and managed by state governments, while private universities are managed by educational organizations or trusts recognized by the UGC. "Deemed universities" are institutions accredited to enjoy university status. The NIRF categorizes Indian institutions into four types.

<sup>10</sup>**found that the NIRF provided a platform for institutions to input and share information.** This included publishing data in PDF format on their websites for public comment and verification. Additionally, the perception module involved feedback from peers and employers. The ranking process

began after data verification and collection. <sup>11</sup>noted the need for parallel efforts to address data abnormalities in the NIRF's ranking module.

<sup>12</sup>argue that a theoretical framework is needed to guide research on ICT adoption in telehealth environments in India. Developing a conceptual framework can help researchers better understand the factors influencing telehealth adoption and create a new foundation for future studies in the field.

<sup>13</sup>suggests that future research on ICT adoption in telehealth should focus on developing a conceptual framework to identify new determinants and facilitate understanding. This framework can provide a theoretical foundation for future studies, making research more productive and comprehensible.

The National Assessment and Accreditation Council (NAAC) is a separate ranking system that uses different criteria from the NIRF. NAAC focuses on evaluating the overall quality of educational processes, including curriculum, teaching methods, faculty, research, infrastructure, governance, and student services. While both NIRF and NAAC rankings are important in India, they use distinct methodologies and focus on different aspects of institutional performance.

NIRF prioritizes research and innovation, as evidenced by the higher weightage assigned to the RP parameter. This suggests that institutions excelling in research are more likely to achieve higher rankings. However, NAAC, while considering research, innovation, and extension, gives it less emphasis compared to the NIRF, especially for affiliated institutions.

The NIRF's emphasis on research has influenced the ranking of Punjab's medical institutions. However, this focus may have hindered the progress of some institutions, as evidenced by their differing NAAC rankings. While the State Health Sciences University focuses on education and research, healthcare is handled by other government bodies. Despite numerous medical institutions, few have participated in NIRF rankings, suggesting a lack of adherence to core requirements or hesitation to participate. To improve rankings, the state government should prioritize research and encourage institutions to participate in NIRF. By addressing core values and criteria, institutions can enhance their visibility and reputation.

Similarly, the top medical institutions included in this list of top 10 according to NIRF ranking include All India Institute of Medical Sciences in Delhi, Post Graduate Institute of Medical Education and Research in Chandigarh and Christian Medical College in Vellore. And these medical institutions are compared to medical schools ranked between 40 and 50, with BJ at number 50. Institute of Medical

Sciences and PSG Institute of Medical Sciences Research, Coimbatore, Tamil Nadu at number 40. Based on elements related to research and professional practice (RP) or teaching, learning and resources (TLR), we compared them. In which SS or FQE are the two TLR factors that we have taken. Similarly, four factors PU, QP, IPR and FPPP-RP have been taken.

We calculated a total score of 140 using the TLR and RP factors. All India Institute of Medical Sciences, Delhi, which is ranked #1, calculated TLR and RP value of 132.32 which highlights the research and professional practice of this medical college as well as the effective use of its teaching and learning resources. Similarly, B.J. Medical College, Ahmedabad, Gujarat, which is ranked 50th, has a TLR and RP value of 45.99 which expresses the poor performance of teaching resources, learning resources, or research and professional practice of this medical college.

## **CONCLUSION**

The Punjab government's lack of emphasis on TLR&RP is hindering medical universities' NIRF rankings. To improve, they should offer grants and additional funding to motivate institutions and enhance their work. This will encourage more participation and introspection on areas of improvement. Addressing healthcare and medical education issues separately is crucial. Policies to enhance faculty research aptitude are necessary to avoid future setbacks.

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