SYSTEMATIC REVIEW

Factors Associated With Job Satisfaction of Medical Staff During Covid-19 of China: A Systematic Review

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ABSTRACT

Introduction: Job satisfaction of medical staffs is a challenging issue for health organizations. This systematic review was conducted to identify the factors associated with job satisfaction of medical staffs during Covid-19 of China. **Materials and methods:** The article systematically reviews factors influencing job satisfaction among medical staff in China from January 2020 to April 2023 according to PRISMA guidelines. The relevant keywords were searched in Pubmed, Web of science,scopus, China Wanfang and CNKI databases of china. The quality of studies was assessed by the Critical Appraisal of a Survey checklist. **Results:** The study identifies 14 relevant studies focusing on 9157 medical workers in 18 provinces. Findings highlight a diversity of tools used to assess physician satisfaction and categorize influencing factors into personal, intrinsic, and contextual aspects. Notably, workplace-related factors such as management quality, professional growth opportunities, and colleague support show statistical significance. The study underscores the impact of contextual factors, emphasizing the work environment's positive correlation with physician satisfaction. This attention to contextual elements surpasses the focus on personal and intrinsic factors. **Conclusion:** The article concludes that understanding physician satisfaction, particularly in the context of the current healthcare workforce crisis, is crucial for effective human resource management in the healthcare sector.
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Keywords: Job satisfaction, Medical Staffs, Covid-19, China, Factors associated, Factors associated with job satisfaction

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INTRODUCTION

In late 2019, the global Covid-19 outbreak profoundly impacted human health. Following the outbreak, under the decisive leadership of Comrade Xi Jinping and united efforts nationwide, remarkable achievements swiftly curtailed the epidemic's rampant spread. Significant strategic outcomes were realized in epidemic prevention and control(1-6).

Since the Wuhan Covid-19 outbreak in late 2019, the pandemic has persisted in China for three years, causing substantial impacts on global lives and economies. Throughout this period, Chinese medical staff, comprising hospital clinicians, nurses, and community doctors, selflessly dedicated themselves to the fight against Covid-19. Their exceptional contributions played a pivotal role in China's triumph over the virus, despite personal sacrifices(7-9).

Job satisfaction refers to how pleased individuals are with their jobs, careers, and employers(10). In healthcare, high job satisfaction among professionals is crucial for enhancing performance, improving healthcare services, and increasing patient satisfaction(11). Organizations aiming for optimal resource use should address factors affecting job satisfaction to boost employee productivity. Unsatisfied healthcare providers are less likely to achieve high patient satisfaction(12). Therefore, greater job satisfaction among healthcare providers leads to better patient satisfaction(13).

The Covid-19 pandemic has placed immense pressure on healthcare systems, particularly on frontline medical staff in China. They have faced heavy workloads, high infection risks, and significant physical and mental stress. Understanding the factors influencing their job satisfaction is essential for enhancing their well-being and maintaining sustainable healthcare services.

Job satisfaction of medical staff is the contentment and fulfillment experienced by healthcare professionals in their work, serving as a crucial well-being indicator(14). It exhibits a negative correlation with

physician burnout(14, 15). Physicians' job satisfaction is pivotal, influencing healthcare outcomes, including quality, patient satisfaction, treatment adherence, and interpersonal aspects of patient care(14, 17,18). Factors influencing medical staff job satisfaction encompass:
a.Positive doctor-patient relationships enhance job satisfaction for medical staff.
b. Public respect for health professionals boosts their job satisfaction.
c. Optimized performance evaluation systems improve job satisfaction.
d. Recognition of job abilities and confidence in skills increase job satisfaction.
e. Reducing work intensity enhances job satisfaction by alleviating pressure on medical staff.

These factors, while significant, are not exhaustive, as medical staff job satisfaction is a complex topic influenced by various factors. Further understanding of physician satisfaction factors, especially during the Covid-19 pandemic in China, is essential(14, 18).

MATERIALS AND METHODS

Search Strategy

The entire project process adhered to the guidelines outlined in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)(19). An expert team, well-versed in conducting such research and possessing methodological expertise, initiated the analysis and literature review. They commenced their work by accessing the following databases:Pubmed, Web of science,scopus, China Wanfang and CNKI databases of china. Keywords used in the project are job satisfaction; medical staffs; Covid-19 pandemic of china; factors associated . The review of bibliographic databases lasted from January 2020 to April 2023.

Eligibility Criteria:
• Original full reports on medical workers
• Reporting short- and/or long-term outcomes
• Quantitative studies from January 2020 to April 2023
• High measurement reliability
• Research on the Chinese population with Covid-19
• Publications in English and Chinese

Exclusion Criteria:
• Case studies, short reports
• Non-English/Chinese articles
• Small sample sizes

Study Selection:
• Comprehensive review by two researchers
• Screening titles and abstracts
• Inclusion criteria for analysis phase
• Duplicate removal
• Full-text review
• 4345 articles identified, 14 included (7 English, 7 Chinese)

Data Extraction and Quality Assessment:
Information from qualified studies included author names, publication dates, population characteristics, age distribution, research location/methodology, tools employed, job satisfaction occurrence, and associated factors. EndNote was used for deduplication. Two independent reviewers screened titles and abstracts, resolving disagreements through discussion. Full texts were evaluated by two reviewers with a third involved in case of disagreements. Data extraction was performed using a dedicated form, cross-checked by another reviewer.Methodological quality assessed using the 12-item Critical Appraisal of a Survey checklist (11 items utilized, resolving discrepancies through discussion).

CEBMa center for Evidence-Based Management

Critical Appraisal of a Survey

Appraisal questions	Yes	Can't tell	No
1. Did the study address a clearly focused question / issue?			
2. Is the research method (study design) appropriate for answering the research question?			
3. Is the method of selection of the subjects (employees, teams, divisions, organizations) clearly described?			
4. Could the way the sample was obtained introduce (selection)bias?			
5. Was the sample of subjects representative with regard to the population to which the findings will be referred?			
6. Was the sample size based on pre-study considerations of statistical power?			
7. Was a satisfactory response rate achieved?			
8. Are the measurements (questionnaires) likely to be valid and reliable?			
9. Was the statistical significance assessed?			
10. Are confidence intervals given for the main results?			
11. Could there be confounding factors that haven't been accounted for?			
12. Can the results be applied to your organization?			

Adapted from Crombie, *The Pocket Guide to Critical Appraisal*; the critical appraisal approach used by the Oxford Centre for Evidence Medicine, checklists of the Dutch Cochrane Centre, BMJ editor's checklists and the checklists of the EPPI Centre.

Figure 1: A Critical Appraisal of a Survey checklist developed by the Centre for Evidence-Based Management

Data Synthesis and Analysis

We performed a narrative data synthesis from the included studies, collecting data on research region, study objectives, methodology, sample characteristics, working conditions, tools to measure job satisfaction, and associated factors. Predetermined factors were classified and extracted, with both significant and non-significant findings reported.

Data extraction was conducted by one author and cross-checked by another. Due to substantial differences in satisfaction measurement methods and analytical approaches, a meta-analysis was not feasible. Instead, a narrative review was presented. Factors influencing physician job satisfaction were categorized into personal, intrinsic, and contextual factors based on extensive literature review and our own research(14,21,22).
Risk of bias assessment

To assess the risk of bias , afte understanding the 12-item Critical Appraisal of a Survey checklist ,according to nclusion criteria and exclusion criteria ,then let the other two reviewer assess strictly these 14 studies.

RESULTS

Overview of Studies

As depicted in Figure 2, the search across 5 databases yielded a total of 4345 records. After eliminating duplicates, 3471 articles remained. Subsequently, a thorough analysis based on titles and abstracts was conducted, leading to the in-depth examination of 31 articles in full text. From this scrutiny, 14 studies were identified that aligned with the predetermined criteria and were consequently included in the review(23).

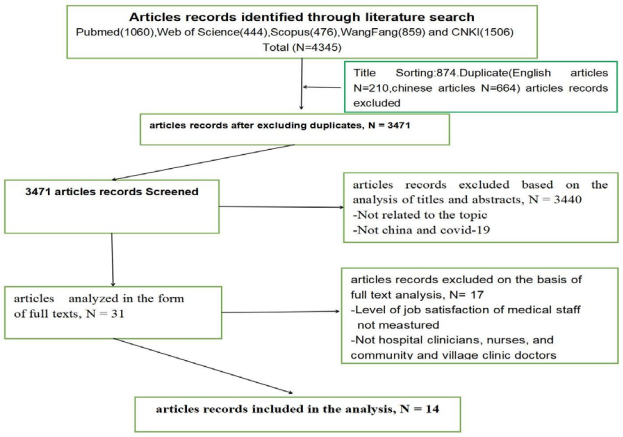

Figure 2: Flow chart describing the identifiation and selection of articles records in the studay based on PRISMA.

Study Quality

The evaluation of the studies included in the analysis involved assessing their quality through the Critical Appraisal tool developed by the Centre for Evidence-Based Management. Quality scores varied from 5 to 10, with an average score of 7.4. We deemed the methodological quality of the included studies as pivotal. Among the 11 quality criteria, none of the studies fulfilled all ten, while three studies met nine criteria(25-26,32), three studies met eight criteria (31,33,34), six studies met seven criteria (24,29-30,35-37), one study met six criteria (27), and only one study met five criteria (28). The criteria that were infrequently satisfied or not reported in over half of the examined studies included "sample size calculations" and "provision of confidence intervals for the main results (Table I and Table II).

Table I: Result of the studies' quality assessment based on Critical Appraisal of a Survey develeped by the Centre for Evidence-Based Management

5	4	3	2	1	
peizhi Hu et al. (2022) [14]	Yan Wang et al. (2022) [13]	Ling zhang et al. (2022) [18]	Rong Wang et al. (2020) [17]	Minyi Zhang et al. (2023) [2]	**Study/Question**
Yes	Yes	Yes	Yes	Yes	**Did the study address a clearly focused question/issue?**
Yes	Yes	Yes	Yes	Yes	**Is the research method (study design) appropriate for answering the research question?**
Yes	Yes	Yes	Yes	Yes	**Is the method of selection of the subjects(employees, teams, divisions, organizations) clearly described?**
NO	NO	NO	NO	Can'tel	**Could the way the sample was obtained introduce (selection) bias?**
Yes	Yes	Yes	Yes	Yes	**Was the sample of subjects representative with regard to the population to which the findings will be**
NO	Yes	Yes	Yes	NO	**Was the sample size based on pre-study considerations of statistical power?**
Yes	Yes	Yes	Yes	Yes	**Was a satisfactory response rate achieved?**
Yes	Yes	Yes	Cantell	Yes	**Are the measurements (questionnaires)likely to be valid and reliable?**
NO	Yes	Yes	Yes	Yes	**Was the statistical significance assessed?**
NO	NO	NO	NO	NO	**Are confidence intervals given for the main results?**
NO	Yes	NO	NO	Cantell	**Could there be confounding factors that haven't been accounted for?**
6	9	8	7	7	**Overall score**

Table II : The outcomes of the studies' quality assessment using the Critical Appraisal of a Survey developed by the Centre for Evidence-Based Management

Results of the studies'quality assessment based on Critical Appraisal of a Survey developed by the Centre for Evidence-Based Management													
6	Haihua Zhao et al. (2022)[24]	Yes	Yes	Yes	No	Yes	No	Yes	Can'tell	Yes	No	Yes	7
7	Shan Huang et al. (2021)[20]	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	8
8	Xuewen Zhang et al.(2022)[19]	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	9
9	Mo Yi et al. (2022)[21]	Yes	Yes	Yes	Yes	Yes	Can'tell	Yes	Yes	Yes	No	No	8
10	Xiaoyan Yu et al. (2020)[11]	Yes	Yes	Yes	No	Yes	Can'tell	Yes	Yes	Yes	No	No	7
11	Yu Cheng et al. (2021) [23]	Yes	Yes	Yes	No	Yes	No	Yes	Can'tell	Yes	Yes	No	7
12	Rui Jin. (2022)[15]	Yes	Yes	Yes	No	Can'tell	No	Yes	No	Yes	No	No	5
13	Ardani Latifah Hanum et al.(2022)[16]	Yes	Yes	Yes	No	Can'tell	No	No	Yes	Yes	Yes	Yes	7
14	Xiang Shi et al. (2023) [12]	Yes	Yes	Yes	No	Yes	Yes	Yes	Can'tell	Yes	Yes	Yes	9

Table III: Characteristics of the studies included in the analysis

No	Study ID	Region	Period Years	TargetGroup/ MedialSpecialization	Response Rate	Number of medical staff Included in the Analysis	Tools used to Measure Physician Satisfaction
1	Xiaoyan Yu et al. (2020) [24]	National-widely	from 10 January to 10 March 2020.	medical staffs who worked at the frontline of the prevention and control of COVID-19 in Hubei province	97%	455	Job satisfaction was surveyed by the Minnesota Satisfaction Questionnaire (MSQ)
2	Xiang Shi et al. (2023) [25]	Anhui Province	from July 27 to September 27, 2021	Doctors from nine tertiary hospitals	97.24%	2258	Based on consultation of the Minnesota Satisfaction Questionnaire and the Ask-Form Employee Satisfaction questionnaire
3	Yan Wang et al. (2022) [26]	Nantong City of Jiangsu Pro-vince	From July 20 to August 10,2021	Doctors from 7 municipal third-class A public hospitals in Nantong city	92.48%	381	Job Satisfaction Scale
4	Peizhi Hu et al. (2022) [27]	Shang hai	NR	All the nurses in CAAC Shanghai Hospital	98.2%	107	Job Satisfaction scale of Nurses
5	Rui Jin. (2022) [28]	Jiangsu Province	From November to December 2021	psychiatric nurses From four Grade-A tertiary hospitals	92.58%	212	Job satisfaction scale
6	Ardani Latifah Hanum et al. (2022) [29]	Yunnan Province	from April 30 to May 25, 2021	clinical nurses from the First Affiliated Hospital of Kunming Medical University	58.5%	1425	Nursing Job Satisfaction Scale (NJSS)
7	Rong Wang et al. (2020) [30]	National-widely	On February 5,2020	clinical nurses from mobile cabin hospital	99. 02%	405	Nursing Job Satisfaction Scale (NJSS)
8	Ling Zhang et al. (2022) [31]	Nanning, Liuzhou, Guilin city Guangxi province	From January to December, 2020	frontline health workers from 12 public hospitals	100%	221	Authors' own questionnaire
9	Xuewen Zhang et al. (2022) [32]	Shan dong Province	From May to June 2019	village public health service providers	96.2%	1244	the Chinese version of Job Description Index scale

CONTINUE

Table III: Characteristics of the studies included in the analysis. (CONT.)

No	Study ID	Region	Period Years	TargetGroup/ MedialSpecialization	Response Rate	Number of medical staff Included in the Analysis	Tools used to Measure Physician Satisfaction
10	Shan Huang et al. (2021) [33]	Fujian province	In March-April, 2021	human organ donation coordinators	94%	66	job satisfaction survey, JSS
11	Mo Yi et al. (2022) [34]	northern provinces ofChina	from May to October 2020.	Chinese front-line primary public health workers	92.46%	601	The Minnesota Satisfaction Questionnaire (MSQ),
12	Minyi Zhang et al. (2023) [35]	9provinc-es in China	from May to October of 2021	nurse specialists and general nurses from nine provincial general hospitals in China	98.6%	690	job satisfaction scale of medical staff
13	Yu Cheng et al. (2021) [36]	Chong Qing Province	On 17-23 January 2020	On the job nurses from 3 third-class a general hospitals	98.33%	590	Nurses' Job Satisfaction scale
14	Haihua Zhao et al. (2022) [37]	Guang Zhou cityof Guang dong Province	from February to July,2021	.clinical nurses from a general hospital and seven primary hospitals	97.7%	502	The Nurses' Job Satisfaction (MMSS) scale

"Nine studies had a high response rate, with over 95% of participants responding (24,25,27,30,31,32,35,36,37). Four studies had a response rate between 60% and 95% (26,28,33,34), while one study had a response rate lower than 60%,it is 58.5% (29)(Table III).

NR is not reported.

Study Characteristic

The studies included 9157 medical staff from eighteen provinces and two nationwide in China, conducted between 2020 and 2023. Twelve were cross-sectional, with sample sizes from 66 to 2258 participants. Tools to assess physician satisfaction varied(Table III).some used previously validated questionnaires, while one used a custom questionnaire(31) (Table III). Funding information was inconsistently reported; five studies noted public funding. Factors influencing satisfaction were categorized into personal, intrinsic, and contextual factors.

Personal Factors

Table IV: Factors influencing physician satisfaction as examined in studies incorporated in the systematic review.

NO	Study ID	personal factors				
		Age	Gen-der	Years of experi-ence	Marital status	Work-fam-ily conflict
1	Xiaoyan Yu et al. (2020)[11]	√	√	√	√	
2	Xiang Shi et al. (2023)[12]	√	√			

CONTINUE

Table IV: Factors influencing physician satisfaction as examined in studies incorporated in the systematic review. (CONT.)

NO	Study ID	personal factors				
		Age	Gen-der	Years of experi-ence	Marital status	Work-fam-ily conflict
3	Yan Wang et al. (2022)[13]	√	√		√	
4	Peizhi Hu et al. (2022)[14]					√
5	Rui Jin. (2022) [15]					√
6	Ardani Latifah Hanum et al. (2022)[16]			√	√	√
7	Rong Wang et al. (2020) [17]	√	√	√	√	
8	Ling Zhang et al. (2022)[18]	√	√		√	
9	Xuewen Zhang et al. (2022)[19]					
10	Shan Huang et al. (2021) [20]	√	√	√		
11	Mo Yi et al. (2022)[21]	√	√	√		
12	Minyi Zhang et al. (2023) [22]	√	√		√	√
13	Yu Cheng et al. (2021)[23]	√	√	√	√	
14	Haihua Zhao et al. (2022) [24]					√

Table V: Factors analyzed for statistical and non-statistical significance in physician satisfaction (examined in studies incorporated in the systematic review).

	Factors	Statistically Significant	Statistically Non-Significant
Personal factors	Age	(25,26,30,33)	(24,31,34,35,36)
	Gender	(25,31,33,36)	(24,26,34,35)
	Years of experience	[24,29,33,36]	[30]
	Marital status	[30]	[24,26,29,31,35,36]
	Work-family conflict		[35]

Physician Age

Among the nine studies assessing the correlation between age and job satisfaction among medical staff, denoted as studies (24-26,30-31,33-34,35-36), only four studies (specifically (25,26,30,33)) demonstrated a positive association. These particular studies indicated an increase in job satisfaction with advancing age. In contrast, the remaining studies that examined the relationship between job satisfaction and age in medical staff, namely (24,31,34,35,36), did not reveal a statistically significant association. The details of these findings are presented in Table IV and Table V.

Gender

Out of the nine studies included in the analysis that examined the relationship between gender and physician satisfaction,The nine studies are (24-26,30-31,33-34,35-36). Four studies identified a statistically significant association(25,31,33,36).In four studies, no statistically significant relationship between gender and physician satisfaction was found (24,26,34,35)(Table IV and Table V).A specific study conducted by Schmit, Jongbloed et al. (38) explored the correlation between gender and years of practice. The findings revealed that male physicians who had been in practice for 20 years reported lower levels of satisfaction compared to female physicians who had also been in practice for 20 years, as well as both male and female colleagues who had been practicing for 10 years. This dissatisfaction was specifically related to the administrative aspect of their job satisfaction (38).

Years of Experience

In the realm of medical practice, six studies explored the correlation between years of experience and physician satisfaction, denoted as studies(24, 29-30, 33-34, 36). Notably, four of these studies, specifically (24, 29, 33, 36), uncovered a statistically significant association. The findings suggest that as the number of years of experience increases, there is a corresponding elevation in job satisfaction (24, 29). Interestingly, Michiniov et al. contributed a distinctive perspective, revealing that long-standing team members exhibited higher levels of job satisfaction (39). However, the remaining studies failed to establish a significant relationship(30) (refer to Table IV and Table V).

Marital Status

Relationships between family and job satisfaction were measured in seven of the included studies.They are (24,26,29-31,35-36). Rong Wang et al. (30) analyzed the influence of marital status. Only one study had statistical significant association (30).Six studies were found which had not statistical significant associations (24,26,29,31,35,36(Table IV and Table V).

Work-family conflict

Out of the five studies included in the analysis that examined the relationship between Work-family conflict and physician satisfaction,The five studies were(27-29,35,37) (Table IV).Through the Table V,there was no doubt about that no one study had statistical significant association .One study was found which had not statistical significant association (35).

Intrinsic Factors

Table VI: Factors influencing the satisfaction of physicians (examined in studies incorporated into the systematic review)

NO	Study ID	Intrinsic Factors		
		Specialty	Patients interactions	Work engagement
1	Xiaoyan Yu et al. (2020)[11]			√
2	Xiang Shi et al. (2023)[12]			√
3	Yan Wang et al. (2022)[13]			√
4	Peizhi Hu et al. (2022)[14]			
5	Rui Jin. (2022)[15]			√
6	Ardani Latifah Hanum et al. (2022)[16]			√
7	Rong Wang et al. (2020)[17]	√		
8	Ling Zhang et al. (2022)[18]			
9	Xuewen Zhang et al. (2022)[19]			
10	Shan Huang et al. (2021)[20]			
11	Mo Yi et al. (2022) [21]			
12	Minyi Zhang et al. (2023)[22]			√
13	Yu Cheng et al. (2021)[23]	√		
14	Haihua Zhao et al. (2022)[24]			

Table VII: Factors with statistically and non-statistically significant impacts on physician satisfaction (examined in studies incorporated into the systematic review).

	Factors	Statistically Significant	Statistically Non-Significant
Intrinsic factors	Specialty		(30)
	Patients interactions		
	Work engagement	(24,25)	(35,28)
Contextu-al factors	Hospital type and structure		
	Management and leadership	[34,36]	
	Opportunity		
	Colleague support		[28,36]
	Access to resources		
	Workload	[26,36]	
	Work hours		
	Work stability		
	Income	[25,26,33,36]	[35]
	Intention to leave		
	Achievement	[26]	

Specialty

Two studies analyzed the link between medical specialty and physician satisfaction. Table VII shows no statistically significant associations. One study found no significant relationship between job satisfaction of 54 intensive care nurses (13.33%) and 65 surgical nurses (16.05%) (30). Another study showed that medical and surgical nurses, who made up 74.44% of the participants, had the highest average satisfaction scores. However, medical nurses were more willing to leave their jobs compared to those in surgical and other departments, indicating lower job satisfaction among medical nurses (36).

Work Engagement

of Practice six studies measured the association between work engagement and physician satisfaction. The six studies were (24-26,28-29,35)(Table VI).Two studies identified a statistically significant association(24,25). In two studies, no statistically significant relationship between work engagement and physician satisfaction were found (35,28)(Table VII).

Contextual Factors: Workplace Related

Hospital Type and Structure

Out of the one study included in the analysis that examined the relationship between hospital type and structure and physician satisfaction,The one study was(31) (Table VIII).Through the Table VII,there was no doubt about that no one study had statistical significant association.

Management/Leadership

The influence of managerial and leadership quality on physician satisfaction was examined in eight studies, revealing their significant role(24-25,27-30,34,36)(Table VIII).Two studies identified a statistically significant association(34,36).In the other studies, no statistically significant relationship between management/ leadership and physician satisfaction were found (Table VII).Mo Yi et al. reported that The results showed that the mean score of organizational commitment of 601 junior phw was 2.93±0.73. Their mean score of job satisfaction was 3. Pearson correlation analysis showed that organizational commitment was highly positively correlated with job satisfaction ($r=0.804$, $p<0.001$); and organizational commitment as a mediating variable could also increase job satisfaction (34).

Opportunity for Professional Development

Eight studies explored the correlation between professional development opportunities and physician satisfaction(25,27-32,37)(Table VIII). However, none of the studies identified a statistically significant relationship between professional development opportunities and physician satisfaction (Table VII).

Colleague Support(Team Work, Team Relations)

A wealth of evidence underscores the correlation between colleague support and physician satisfaction. Out of the 14 studies incorporated in the analysis, nine delved into the connection between colleague support and physician satisfaction(24-25, 27-30, 32, 36-37) (refer to Table VIII). However, none of these studies revealed a statistically significant relationship between colleague support and physician satisfaction. In two specific studies, the investigation similarly failed to establish a statistically significant association between colleague support and physician satisfaction (28, 36) (refer to Table VII).

Access to Resources

Of the two studies that evaluated association between access to resources and job satisfaction of medical staffs,The two studies are(30,32)(Table VIII).No studies had statistically significant relationship between access to resources and physician satisfaction were found(Table VII).

Contextual Factors: Job Related Factors

Table VIII: Factors influencing physician satisfaction (investigated in studies incorporated into the systematic review).

NO	study ID	Contextual Factors										
		Workplace Rolated						Job Ralated			Other	
		Hospital type and structure	Management and leadership	Oppor-tunity	colleague support	Access to resources	Workload	Work hours	Work stability	Income	Intention to leave	achiev-ement
1	Xiaoyan Yu et al.(2020) [11]		√		√		√		√	√		√
2	Xiang Shi et al(2023) [12]		√	√	√					√		√
3	Yan Wang et al(2022) [13]						√			√		√
4	Peizhi Hu et al(2022) [14]		√	√	√		√	√	√	√		√
5	Rui Jin. (2022) [15]		√	√	√			√	√	√		√
6	Ardani Latitah Hanum et al. (2022) [16]		√	√	√		√			√	√	
7	Rong Wang et al.(2020) [17]		√	√	√	√		√	√	√		
8	Ling Zhang et al(2022) [18]	√		√						√		√
9	Xuewen Zhang et al.(2022) [19]			√	√	√	√			√	√	
10	Shan Huang et al.(2021) [20]									√		
11	Mo Yi et al. (2022) [21]		√					√		√		
12	Minyi Zhang et al. (2023) [22]									√		
13	Yu Cheng et al. (2021) [23]		√		√		√			√	√	
14	Haihua Zhao et al (2022) [24]			√	√		√		√	√		√

Workload and Job Demand

In seven studies ,the impact of management and leadership quality on physician satisfaction was assessed and their important role was observed(24,26-27,29,32,36-37) (Table VIII).There were two studies of statistically significant relationship between workload and physician satisfaction were found (26,36)(Table VII).The results showed that there was a statistically significant difference ($p<0.05$) between physicians' job satisfaction and age, workload, monthly salary income, burnout, and special motivation, while there was a statistically significant difference ($p<0.05$) between the effects of workload on job satisfaction, and both processes were negatively correlated (26). There is a positive correlation between job stress and the inclination to leave, coupled with a negative correlation with job satisfaction. Higher levels of job stress correspond to diminished job satisfaction (36).

Work hours

Four studies investigated the relationship between work hours and job satisfaction(27,28,30,34)(TableVIII). No studies had statistically significant relationship between work hours and medical staffs satisfaction were found(Table VII).

Work Stability

It is reported that five studies investigated the relationship between work stability and job satisfaction(24,27,28,30,37)(Table VIII). According the Table VII,No studies had statistically significant relationship between work stability and satisfaction of medical staffs were found.

Income

All included studies examined the relationship between remuneration and physician satisfaction (Table VIII). Four studies (25, 26, 33, 36)(Table VII) found a statistically significant positive correlation between job satisfaction and income ($p < 0.05$). Higher income was associated with greater job satisfaction. These studies also found that employee satisfaction significantly increased with the provision of incentives and expressions of appreciation.

Contextual Factors: Others Factors

Intention to Leave

Of the three studies that evaluated association between Intention to Leave and job satisfaction of medical staffs,The three studies were (29,32,36)(TableVIII). According the Table VII,No studies had statistically significant relationship between Intention to Leave and satisfaction of medical staffs were found.

Achievements

The seven studies(24-28,31,37)said the relationship between physicians' achievements and job satisfaction (TableVIII).Only one study of achievements was explored and showed statistically significant association for physician satisfaction: (26)(Table VII).

DISCUSSION

This systematic review aimed to identify and analyze the factors associated with job satisfaction among medical staff in China during the Covid-19 pandemic. The findings underscore the complexity of job satisfaction, revealing that it is influenced by a myriad of personal, intrinsic, and contextual factors.

CONCLUSION

This study comprehensively explores factors influencing physician satisfaction in China during the Covid-19 pandemic. Previous studies on age and gender's impact on physician satisfaction yielded inconclusive results. Noteworthy contextual factors include favorable work environments, professional autonomy, job stability, technology access, and resources. Positive colleague relationships, non-financial incentives, workload, and coworker relationships significantly influence physician satisfaction. Specialty, patient interaction, health status, life satisfaction, coping strategies, and the intention to leave are critical factors extensively studied across China.

Future investigations should focus on evaluating external elements, including workplace and job-related factors. Thorough analyses of personal and intrinsic factors linked to medical practitioners' job satisfaction are crucial, with careful control for these factors when examining contextual aspects.

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