

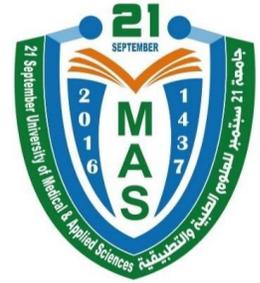
Ministry of Education and Scientific Research
21 September University of Medical & Applied

Sciences

Deanship of Postgraduate studies and scientific research

Faculty of Applied Medical Sciences

Respiratory Care Department



**Research Capacity of Respiratory Therapists: A survey of perceptions,
Opinions, Attitudes and Barriers (Sana'a city – 2024)**

This thesis is submitted to the Department of Respiratory Care at the Faculty of Applied Medical Sciences, Deanship of Postgraduate Studies and Scientific Research, 21 September University of Medical and Applied Sciences in Partial Fulfillment of Requirements for the Degree of Master of Science (MSc.) in Respiratory Care

This thesis is submitted by researcher:

Ammar Abdulqawi Ahmed Al-Qadi, BSc, RCP

Supervisor

Professor: Nouradden AL Jaber, MSc, MD

Professor of Cardiology -Sana'a University

Co-Supervisors

Dr. Fares Ali Mahdi, PhD

Dr. Farouk Abdulrahman JAMIL, MSc

Assistant professor in Community Health

Master of Epidemiology & Medical Statistics

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Canadian Journal of Respiratory Therapy (CJRT)

Email address:- Manuscript Submission – Research Capacity of Respiratory Therapists in Sana’a, Yemen.

Dear Editor-in-Chief,

I am pleased to submit the manuscript entitled “**Research Capacity of Respiratory Therapists: A survey of perceptions, Opinions, Attitudes and Barriers (Sana'a city – 2024)**” for consideration for publication in the *Canadian Journal of Respiratory Therapy*.

This manuscript reports findings from a cross-sectional survey assessing research perceptions, attitudes, and barriers among respiratory therapists and critical care clinicians working in Sana’a, Yemen. To our knowledge, this is the first empirical study to examine research capacity among respiratory therapists in a conflict-affected, low-resource setting. The study identifies a significant motivation–capacity gap, whereby clinicians strongly value research but are constrained by systemic barriers such as lack of protected research time, limited incentives, and insufficient research training.

The study is particularly relevant to *CJRT* readers, as it builds on foundational work published in the journal regarding research engagement among respiratory therapists (e.g., Martins & Kenaszchuk, 2013), while extending this discussion to a fragile health system context. By contrasting findings from Yemen with evidence from high-income settings, the manuscript highlights universal and context-specific challenges to allied health research capacity and offers practical, profession-centered recommendations applicable to respiratory therapy education, workforce development, and policy.

The manuscript has not been published previously and is not under consideration for publication elsewhere. All authors have approved the manuscript and have no conflicts of interest to declare. Ethical approval was obtained from the Research Ethics Committee at 21 September University of Medical and Applied Sciences, and all participants provided informed consent.

We believe this manuscript aligns well with the mission of the *Canadian Journal of Respiratory Therapy* to advance respiratory therapy practice through scholarship, education, and professional development. We appreciate your consideration and welcome any feedback from the editorial team and reviewers.

Thank you for your time and consideration.

Sincerely,

Ammar Abdulqawi Ahmed AL-QADI

MSc Candidate, Respiratory Therapy

21 September University of Medical and Applied Sciences

Sana’a, Yemen

Email : alkadiammar61@gmail.com

Mobile : +967 777 919 708

Research Capacity of Respiratory Therapists in Sana'a, Yemen: A Survey of Perceptions, Attitudes, and Barriers

Abstract

Background: Respiratory therapy (RT) is a critical discipline where research serves as an essential tool for improving clinical protocols. In conflict-affected regions like Yemen, research participation among RTs remains limited by structural & educational gaps.

Objective: This study assessed the perceptions, attitudes, and barriers regarding research among healthcare professionals in Sana'a, Yemen, and measured their willingness to engage in future inquiry.

Methods: A cross-sectional study was conducted among 250 critical care professionals (RTs, physicians, and nurses) across eight public and private hospitals. Data were collected via a validated online questionnaire and analyzed using descriptive and inferential statistics (SPSS v26).

Results: The majority (91.6%) held a positive attitude toward the importance of research. However, a significant gap between motivation and capacity was identified: while 69.6% were willing to participate in research, only 36% felt confident in their skills. The primary barrier was "lack of protected time" (Median rank = 1.0), followed by "insufficient incentives" and "lack of skills." Significant associations ($p < 0.05$) were found between gender, specialty, and experience with research attitudes.

Conclusion: Yemeni RTs are highly motivated but hindered by systemic bottlenecks. To bridge this gap, institutionalizing protected research time, providing incentives, and embedding research methodology into educational curricula are vital.

Keywords

Respiratory therapists; Research capacity; Barriers; Attitudes; Yemen; Conflict-affected setting.

1. Introduction

Respiratory therapy has emerged as a vital healthcare profession dedicated to managing patients with cardiopulmonary disorders. While the role of respiratory therapists (RTs) has traditionally focused on bedside clinical interventions, it has expanded globally to include participation in multidisciplinary care, quality improvement, and clinical research (Barnes et al., 2018). In high-income countries, RTs are increasingly recognized as knowledge-generating practitioners who shape evidence-based practice (Kacmarek, Durbin, & Barnes, 2017).

The importance of RT research is underscored by the global burden of respiratory diseases, such as COPD and acute respiratory infections, which remain leading causes of mortality (WHO, 2020). Effective management requires local epidemiological evidence to inform clinical practice and policy. However, in low-resource and conflict-affected settings like Yemen, research capacity—the ability to conduct and apply high-quality inquiry—remains underdeveloped (Bates et al., 2006; Nchinda, 2002).

In Yemen, the RT profession is relatively new and faces challenges including limited formal education pathways and a lack of professional recognition (Alrubaiee et al., 2023). Most RTs in Sana'a are consumed by demanding clinical duties in a fragile health system, leaving little room for scholarly pursuits. While there is a perceived interest in research, structural barriers such as a lack of mentorship and institutional frameworks often limit productivity (Al-Qadasi et al., 2022). To date, no published empirical studies have

specifically examined the attitudes and perceived barriers to research among RTs in Sana'a.

1.1 Study Objectives

This study aimed to evaluate the research perceptions, attitudes, and barriers among RTs and critical care professionals in Sana'a, Yemen. Specifically, it sought to identify the factors influencing research engagement and determine the willingness of clinicians to participate in scientific projects if systemic barriers were addressed.

2. Literature Review

Evidence-based practice (EBP) requires clinicians to integrate research evidence with expertise and patient preferences. Research suggests that RTs who actively engage with scientific literature reduce protocol deviations by 37% (Aboumatar et al., 2020). Despite this, research capacity remains a multidimensional challenge. Smith and Lee (2022) categorize these challenges into micro (literacy), meso (institutional), and macro (national) levels.

Globally, engagement varies significantly. In Canada, while 70% of RTs express interest in research, involvement is often limited to passive data collection due to time constraints (Martins & Kenaszchuk, 2013). In the Middle East, RT research is often perceived as the responsibility of physicians rather than allied health staff (Abdelrahman et al., 2020). In Saudi Arabia, over 80% of RTs acknowledge the importance of research, yet fewer than 10% have published an article (Alotaibi et al., 2021).

In Yemen, these challenges are magnified by the humanitarian crisis. Clinical practice often relies on improvised, evidence-free techniques due to equipment shortages and salary delays exceeding nine months (Ahmed & Hassan, 2023). Regional disease

patterns, such as a high prevalence of blast lung injury (34 per 1,000 trauma admissions), underscore the urgent need for context-specific localized research (Alshaibani et al., 2022). Bridging this gap requires multi-level interventions, from embedding research training in undergraduate curricula to fostering clinical-academic partnerships.

3. Methodology

3.1 Design and Setting

This cross-sectional study was conducted between September and December 2024 across eight major hospitals in Sana'a, Yemen. The setting included four public facilities (e.g., Al-Thawara) and four private hospitals (e.g., Saudi German Hospital) to reflect the varied resource availability within the city's conflict-affected environment.

3.2 Population and Sampling

The target population included 786 critical care providers (RTs, physicians, and nurses) aged 18–50 with at least six months of clinical experience. Using the finite population correction formula via OpenEpi (95% CI, 5% margin of error), the required sample was $n = 259$. Proportional sampling ensured representation across the eight facilities. The final analyzed sample included 250 participants (96.5% response rate).

3.3 Instrumentation

A structured, self-administered online questionnaire (Google Forms) was developed in Arabic and English, based on validated tools used by Martins and Kenaszchuk (2013). The instrument assessed:

1. **Demographics:** Professional background and hospital type.
2. **Attitudes:** Likert-scale items (1–5) measuring research importance & role in practice.
3. **Barriers:** A ranking of eight common obstacles (e.g., time, incentives, skills).
4. **Training:** Reflection on how research was integrated into formal professional education.

3.4 Data Analysis

Data were analyzed using IBM SPSS (v26). Medians and interquartile ranges (IQRs) were used for non-normally distributed data. Inferential analysis employed Chi-square/Fisher's exact tests for categorical associations and Mann-Whitney U/Kruskal-Wallis tests for median comparisons across binary or multiple groups. Statistical significance was set at $p < 0.05$.

4. Results

4.1 Professional Profile

The majority of respondents were male (74.0%). Professionals included RTs (60.4%), nurses (20.0%), and physicians (19.6%). Regarding experience, 38.4% had 0–5 years, while 10% had over 20 years. Educationally, 48.0% held a bachelor's degree, 24.8% a master's, and 5.6% a PhD. Most worked in public hospitals (63.2%).

4.2 Research Perceptions and Professional Identity

Nearly all participants (91.6%) maintained a positive attitude toward the importance of research. Specifically, 89.6% strongly agreed that RT research is essential, and 82.0% viewed it as vital for professional advancement. Furthermore, 69.2% of participants believed RTs themselves are the most suitable professionals to lead research in their field. However, 72.4% admitted to a perceived lack of research interest within the RT community.

4.3 Barriers and Willingness

The most significant barrier identified was the "lack of time and dedicated work hours" (Median = 1.0, IQR = 2.0). This was followed by a "lack of incentives" (Median = 2.0) and "lack of skill and knowledge" (Median = 2.0). "Lack of interest" and "lack of recognition" were ranked as the least influential factors. Notably, 69.6% of respondents

expressed a willingness to participate in research projects if these barriers were removed, and 95.2% desired to learn the skills required to perform research.

4.4 Significant Associations

- **Gender:** Male respondents demonstrated significantly more positive attitudes toward trust and perceived research value than females ($p = 0.008$).
- **Education:** Master's and PhD holders reported significantly higher agreement on their knowledge of research methodology ($p = 0.015$). However, they also perceived systemic barriers as significantly more pronounced ($p < 0.05$).
- **Specialty:** Significant differences appeared regarding professional suitability to lead research ($p < 0.001$). Physicians were more likely to trust nurses and MDs to lead RT research, whereas RTs showed lower agreement levels in this area.
- **Experience:** Professionals with >10 years of experience showed significantly higher interest in pursuing research projects if barriers were eliminated ($p = 0.026$).

5. Discussion

The study reveals a burgeoning research culture among RTs in Sana'a, despite a precarious health infrastructure. The high positive perception (91.6%) of research importance contrasts with the minimal output reported in Yemeni institutional records, suggesting a significant "motivation-capacity gap." While clinicians value EBP, they lack the meso-level institutional support required to convert aspiration into productivity (Cooke, 2005).

The demographic bottleneck—specifically the low percentage of PhD holders (5.6%)—highlights a critical need for postgraduate investment to foster research leadership. Furthermore, the identified hierarchies in Sana’a hospitals, where physicians traditionally dominate research, may discourage autonomous inquiry by allied health staff. This mirrors findings in other MENA contexts, where research is often physician-led (Fitzgerald et al., 2019).

The findings emphasize that the primary hurdle is structural rather than attitudinal. The "lack of time" (ranked #1 barrier) is a pervasive issue in overloaded public hospitals. Without institutionalizing "protected research time," RTs remain passive consumers of knowledge rather than active producers (Ghaleb Alrubaiee et al., 2023). Moreover, the lack of a research-oriented culture during training—where only 26.4% saw research as a future professional expectation—suggests that educational curricula must evolve from technical instruction to scientific literacy.

5.1 Strengths and Limitations

Strengths: This study is the first comprehensive assessment of RT research capacity in Yemen, utilizing a large sample and validated tools. However, its cross-sectional nature limits causal conclusions, and the geographic focus on Sana’a may not represent rural or other urban settings.

Potential Weakness: The reliance on self-reported data may be subject to social desirability bias, where participants overestimate their interest or knowledge.

6. Conclusion and Recommendations

Yemeni RTs are at a promising threshold; they are motivated clinicians who recognize that research is essential for professional autonomy and improved patient care.

However, they are currently trapped by systemic barriers that prioritize immediate clinical survival over scholarly activity.

Key Recommendations:

1. **Policy:** The Ministry of Health and hospital administrations must implement "protected research time" as a formal component of the RT job description.
2. **Incentives:** Professional organizations should offer grants and link career advancement (promotions) to peer-reviewed contributions.
3. **Education:** Universities must revise RT curricula to include mandatory research methodology, journal clubs, and capstone projects.
4. **Mentorship:** Establishing "Research Units" that twin junior clinicians with experienced researchers—both locally and through international partnerships—can provide the methodological guidance necessary for sustainable capacity building.

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8. Figures

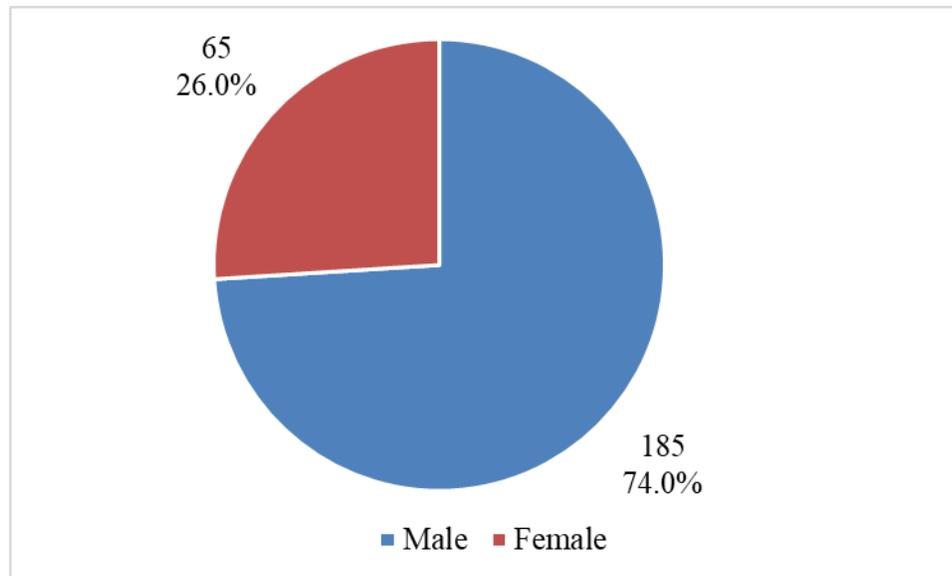


Figure 5.1: Distribution of Respondents according to Sex (n = 250)

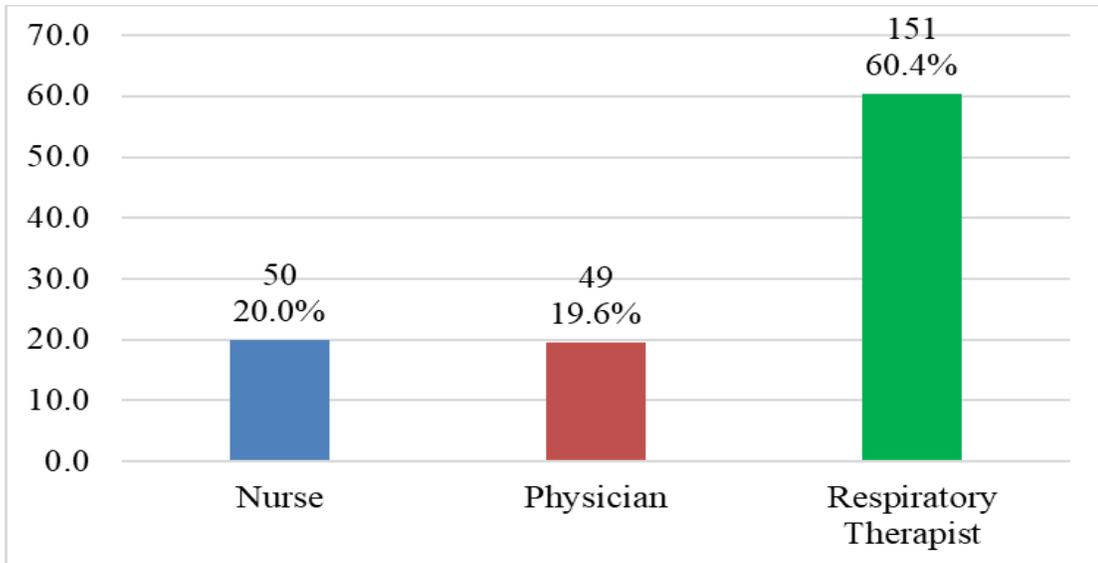


Figure 5.2: Distribution of Respondents according to Specialty (n = 250)

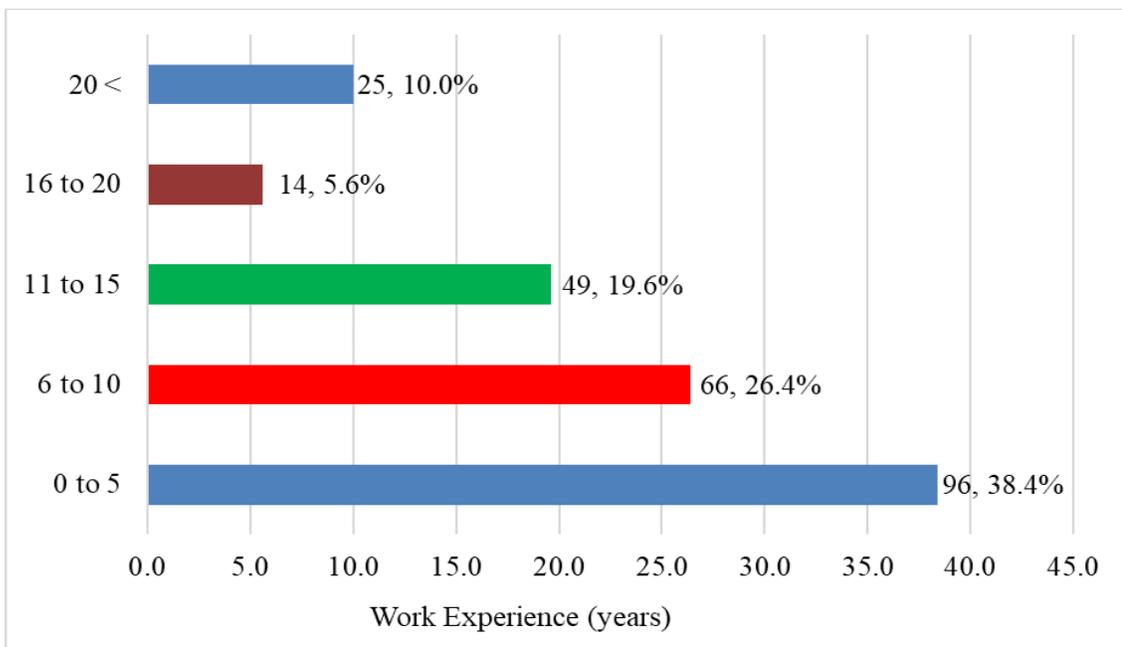


Figure 5.3: Distribution of Respondents according to work experience (n = 250)

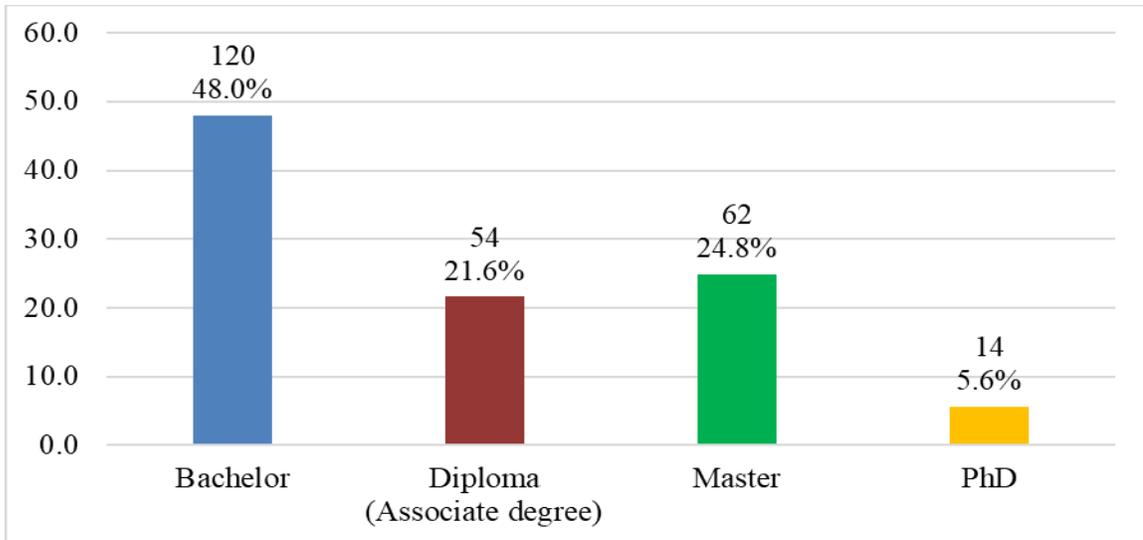


Figure 5.4: Distribution of Respondents according to qualification degree (n = 250)

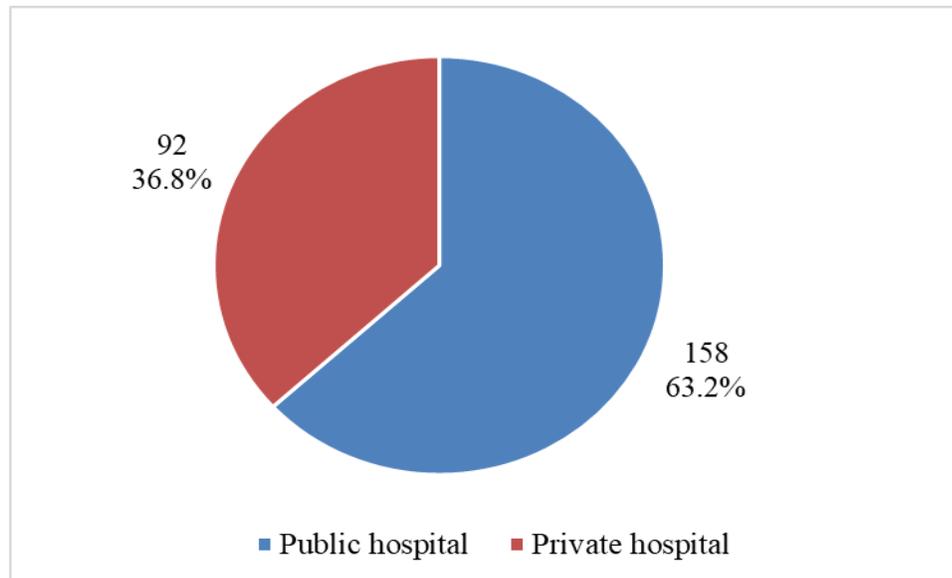


Figure 5.5: Distribution of Respondents according to hospital type (n = 250)

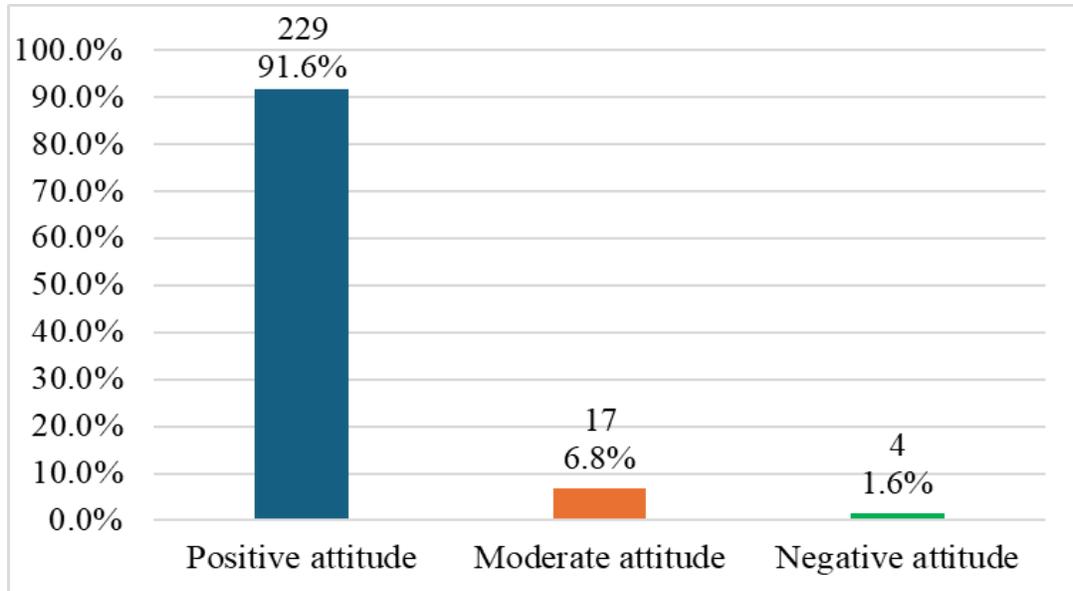


Figure 5.6: Overall attitude on the importance of research

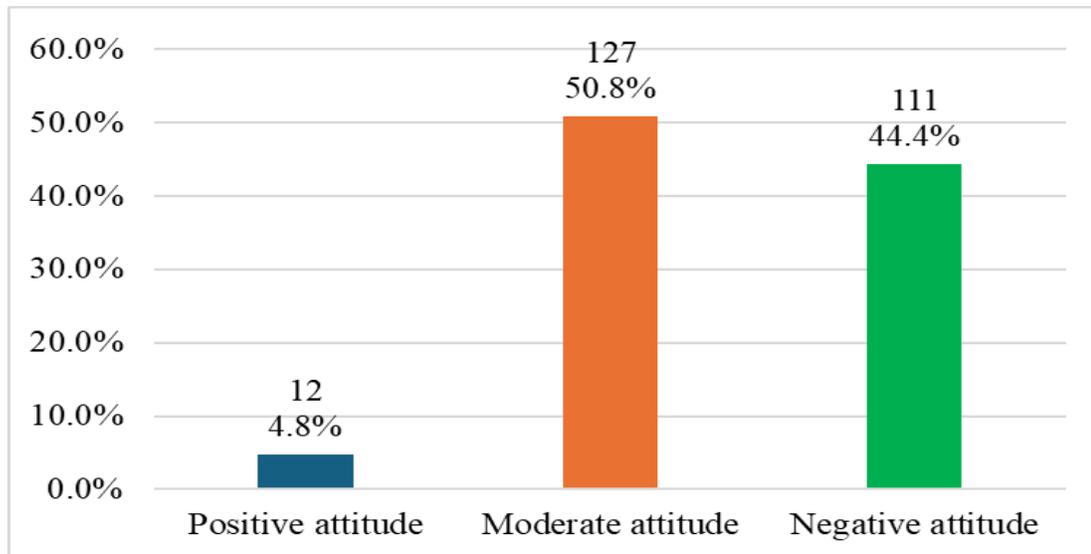


Figure 5.7: Overall attitudes/perceptions toward trust, interest, and perceived value

of respiratory therapy research

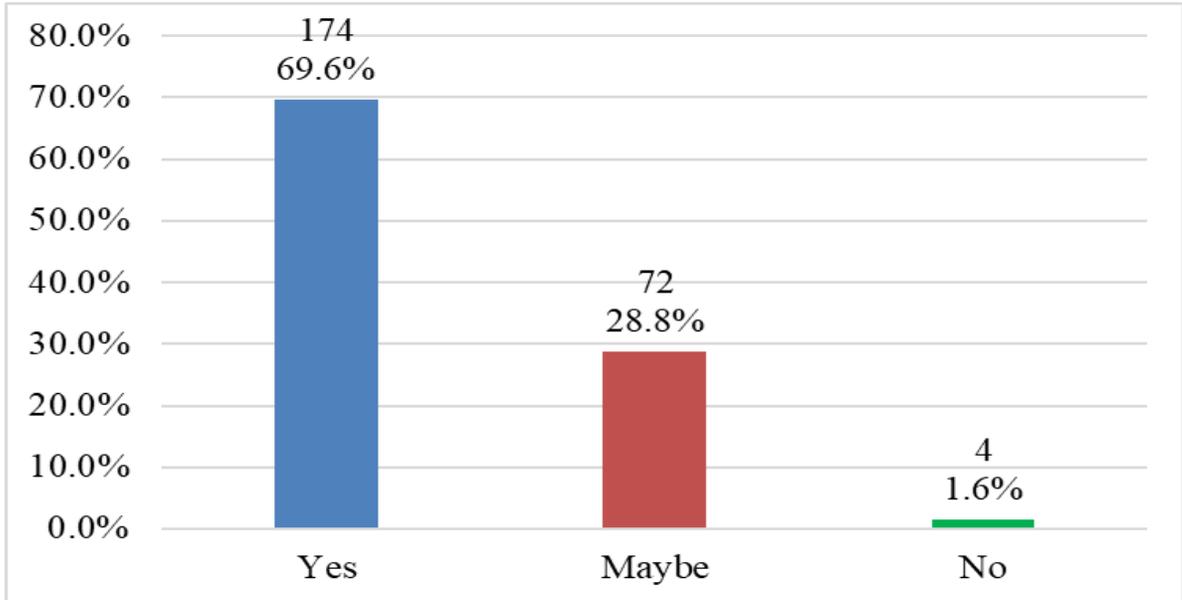


Figure 5.8: Interest in Conducting Research if Barriers Were Removed

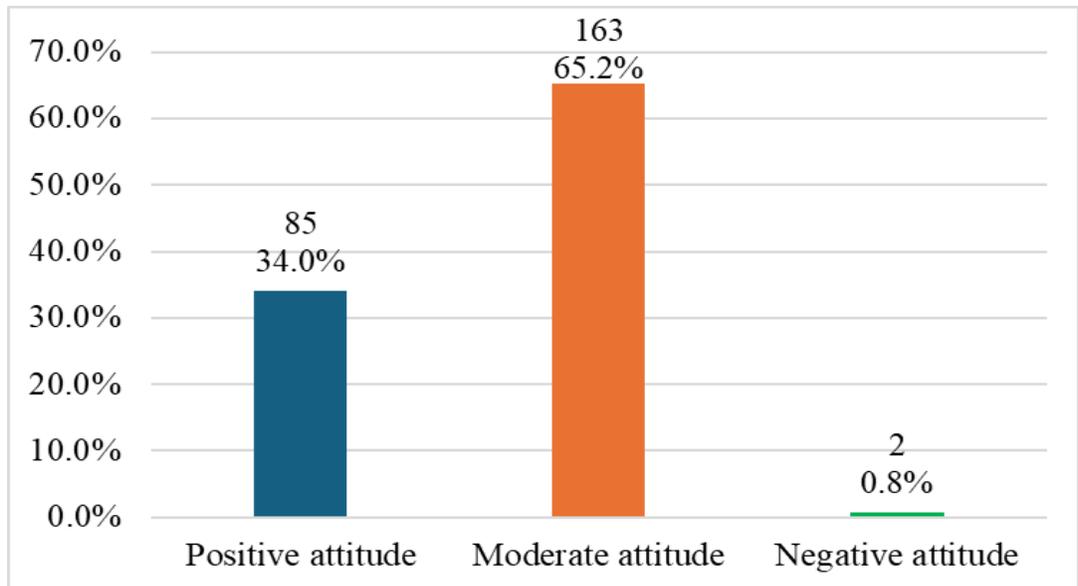


Figure 5.9: Overall willingness to work on a research project

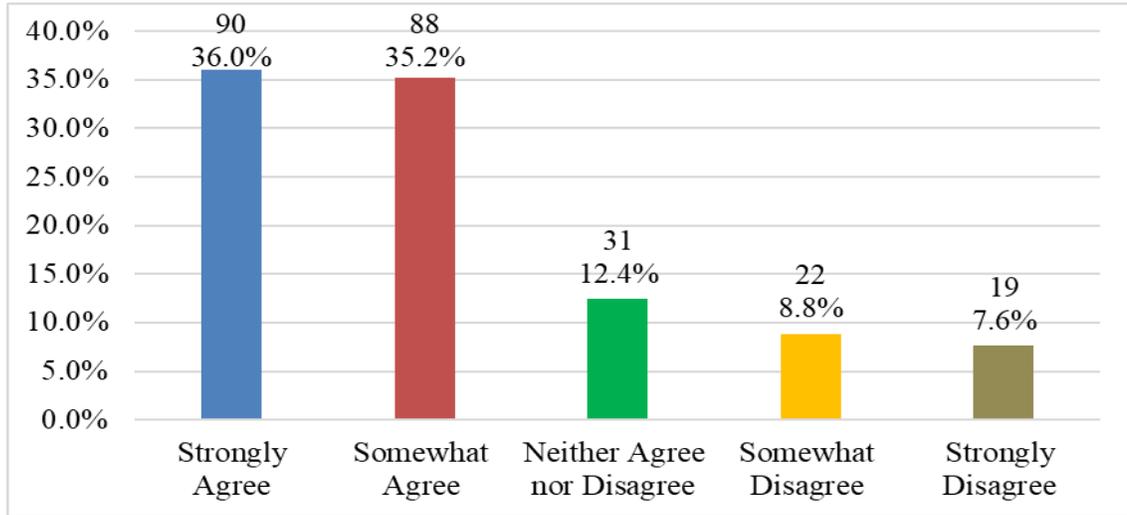
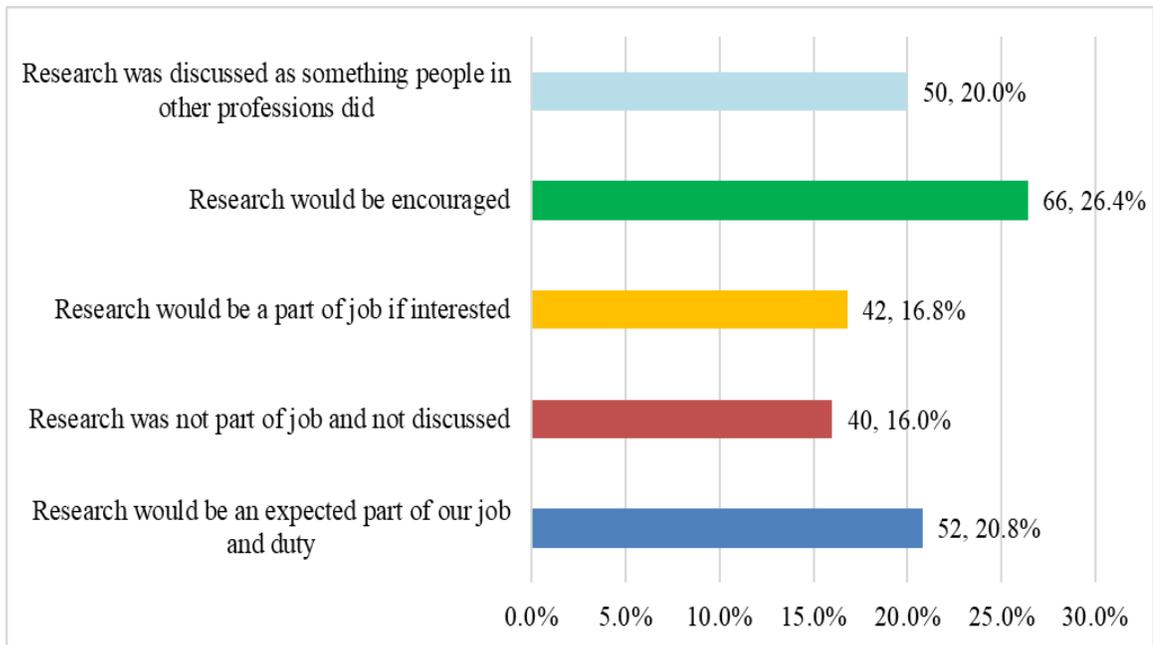


Figure 5.10: Obtaining the required skills to perform research according to my educational attainment



**Figure 5.11: Respondents' beliefs about research during their professional training
(n = 250)**

9. Tables

Table 5.1: Distribution of respondents according to their perception about the importance of research (n = 250)

No.	Item	Strongly Agree n (%)	Somewhat Agree n (%)	Neither Agree nor Disagree n (%)	Somewhat Disagree n (%)	Strongly Disagree n (%)
1	Research is important	219 (87.6)	21 (8.4)	5 (2.0)	2 (0.8)	3 (1.2)
2	Respiratory therapy research is important	224 (89.6)	19 (7.6)	4 (1.6)	1 (0.4)	2 (0.8)
3	Research plays an important role in advancing the field	205 (82.0)	37 (14.8)	5 (2.0)	1 (0.4)	2 (0.8)
4	Research plays an important role in my day-to-day practice as an RT	182 (72.8)	55 (22.0)	9 (3.6)	2 (0.8)	2 (0.8)

Table 5.2: Distribution of respondents according to their opinions regarding suitability of profession to conduct respiratory therapy research (n = 250)

No.	Item	Strongly Agree n (%)	Somewhat Agree n (%)	Neither Agree nor Disagree n (%)	Somewhat Disagree n (%)	Strongly Disagree n (%)
1	RTs are best suited to research respiratory therapy-related topics	173 (69.2)	5 (2.0)	13 (5.2)	5 (2.0)	2 (0.8)
2	RNs are best suited to investigate respiratory therapy-related topics	70 (28.0)	75 (30.0)	40 (16.0)	21 (8.4)	44 (17.6)
3	MDs and other scientists are best suited to investigate respiratory therapy-related topics	80 (32.0)	68 (27.2)	44 (17.6)	26 (10.4)	32 (12.8)

Table 5.3: Distribution of responses regarding attitudes/perception toward trust, interest, and perceived value of respiratory therapy research

No.	Item	Neither				
		Strongly Agree n (%)	Somewhat Agree n (%)	Agree nor Disagree n (%)	Somewhat Disagree n (%)	Strongly Disagree n (%)
1	I trust the staff MDs to keep respiratory care practices in the ICU up to date and current	96 (38.0)	74 (26.6)	47 (18.8)	21 (8.4)	13 (5.2)
2	There is a general lack of interest by the department's RTs to do research	100 (40.0)	81 (32.4)	54 (21.6)	10 (4.0)	5 (2.0)
3	Respiratory therapy research would not be valued by anyone other than RTs themselves	87 (34.8)	91 (36.4)	38 (15.2)	21 (8.4)	13 (5.2)

Table 5.4: Perceived barriers to conducting respiratory therapy research (n=250)

No.	Barrier	1	2	3	4	5	6	7	8	Median (Q1, Q3)
1	Lack of time and dedicated work hours	128 (51.2)	59 (23.6)	27 (10.8)	10 (4.0)	6 (2.4)	5 (2.0)	3 (1.2)	12 (4.8)	1.0 (1.0, 3.0)
2	Lack of incentive (monetary or other)	119 (47.6)	72 (28.8)	25 (10.0)	13 (5.2)	3 (1.2)	2 (0.8)	11 (4.4)	5 (2.0)	2.0 (2.0, 1.0)
3	Lack of skill and knowledge	106 (42.4)	56 (22.4)	46 (18.4)	13 (5.2)	4 (1.6)	9 (3.6)	11 (4.4)	5 (2.0)	2.0 (1.0, 3.0)
4	Lack of access to resources	93 (37.2)	74 (29.6)	26 (10.4)	30 (12.0)	10 (4.0)	5 (2.0)	8 (3.2)	4 (1.6)	2.0 (1.0, 3.0)
5	Other personal commitments	86 (34.4)	56 (22.4)	39 (15.6)	20 (8.0)	22 (8.8)	8 (3.2)	10 (4.0)	9 (3.6)	2.0 (1.0, 4.0)
6	Lack of peer and colleague support	88 (35.2)	70 (28.0)	35 (14.0)	13 (5.2)	4 (1.6)	23 (9.2)	9 (3.6)	8 (3.2)	2.0 (1.0, 3.0)
7	Lack of recognition	95 (38.0)	59 (23.6)	32 (12.8)	21 (8.4)	10 (4.0)	5 (2.0)	19 (7.6)	9 (3.6)	2.0 (1.0, 4.0)
8	Lack of	97	48	30	24	10	11	3	27	2.0 (1.0, 4.0)

interest	(38.8)	(19.2)	(12.0)	(9.6)	(4.0)	(4.4)	(1.2)	(10.8)
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Table 5.5: Distribution of respondents according to their willingness and perceived ability to conduct research by educational attainment (n = 250)

No.	Item	Strongly Agree n (%)	Somewhat Agree n (%)	Neither Agree nor Disagree n (%)	Somewhat Disagree n (%)	Strongly Disagree n (%)
1	If I had dedicated time away from clinical responsibilities, I would be willing to work on a research project	138 (55.2)	82 (32.8)	21 (8.4)	4 (1.6)	5 (2.0)
2	I want to learn the skills required to do research	195 (78.0)	43 (17.2)	8 (3.2)	3 (1.2)	1 (0.4)
3	I want to be left to do my job, fulfill my clinical responsibilities, and nothing else	97 (38.8)	78 (31.2)	39 (15.6)	19 (7.6)	17 (6.8)

Table 5.6.1: Association between respondents' general characteristics and their overall attitudes toward research importance, trust, and perceived value of respiratory therapy research

Items	Total	Overall attitude on research importance					Overall attitudes/perceptions toward trust, interest, and perceived value of respiratory therapy research				
		Positive attitude		Negative attitude		p-value	Positive/Moderate attitude		Negative attitude		p-value
		N	%	N	%		N	%	N	%	
Gender											0.008
Male	185	168	90.8	17	9.2		112	60.5	73	39.5	
Female	65	61	93.8	4	6.2		27	41.5	38	58.5	
Specialty											0.057
Nurse	50	45	90.0	5	10		31	62.0	19	38	
Physician	49	43	87.8	6	12.2		33	67.3	16	32.7	
Respiratory Therapist	151	141	93.4	10	6.6		75	49.7	76	50.3	
Work experience											0.106
≤10 years	162	147	90.7	15	9.3		84	51.9	78	48.1	
> 10 years	88	82	93.2	6	6.8		55	62.5	33	37.5	
Qualification degree											0.189
Bachelor	120	110	91.7	10	8.3		59	49.2	61	50.8	
Diploma	54	53	98.1	1	1.9		34	63.0	20	37	
Master	62	54	87.1	8	12.9		36	58.1	26	41.9	
PhD	14	12	85.7	2	14.3		10	71.4	4	28.6	
Hospital type											0.174
Public hospital	158	142	89.9	16	10.1		93	58.9	65	41.1	
Private hospital	92	87	94.6	5	5.4		46	50.0	46	50	

Table 5.6.2: Association between respondents' general characteristics and their overall willingness to work on a research project

Items	Total	Overall willingness to work on a research project				
		Positive attitude		Negative attitude		p-value
		N	%	N	%	
Gender						0.967
Male	185	63	34.1	122	65.9	
Female	65	22	33.8	43	66.2	
Specialty						0.150

Nurse	50	12	24.0	38	76
Physician	49	15	30.6	34	69.4
Respiratory Therapist	151	58	38.4	93	61.6
Work experience					0.254
≤10 years	162	51	31.5	111	68.5
> 10 years	88	34	38.6	54	61.4
Qualification degree					0.895
Bachelor	120	38	31.7	82	68.3
Diploma	54	19	35.2	35	64.8
Master	62	23	37.1	39	62.9
PhD	14	5	35.7	9	64.3
Hospital type					0.451
Public hospital	158	51	32.3	107	67.7
Private hospital	92	34	37.0	58	63

Table 5.7.1: Association between respondents' general characteristics and their opinions on the suitability of professions to conduct respiratory therapy research

Items	Total	Respiratory Therapists				Registered Nurses														
		Agree		Disagree/neutral		p-value	Agree		Disagree/neutral		p-value									
		N	%	N	%		N	%	N	%										
Gender											0.524								0.430	
Male	185	169	91.4	16	8.6			110	59.5	75	40.5									
Female	65	61	93.8	4	6.2			35	53.8	30	46.2									
Specialty																				0.014
Nurse	50	48	96.0	2	4			32	64.0	18	36									
Physician	49	42	85.7	7	14.3			36	73.5	13	26.5									
Respiratory Therapist	151	140	92.7	11	7.3			77	51.0	74	49									
Work experience																				0.319
≤10 years	162	147	90.7	15	9.3			90	55.6	72	44.4									
> 10 years	88	83	94.3	5	5.7			55	62.5	33	37.5									
Qualification degree																				0.001
Bachelor	120	113	94.2	7	5.8			66	55.0	54	45									
Diploma	54	54	100.0	0	0			29	53.7	25	46.3									
Master	62	52	83.9	10	16.1			40	64.5	22	35.5									
PhD	14	11	78.6	3	21.4			10	71.4	4	28.6									
Hospital type																				0.757
Public hospital	158	146	92.4	12	7.6			91	57.6	67	42.4									
Private hospital	92	84	91.3	8	8.7			54	58.7	38	41.3									

Table 5.7.2: Association between respondents' general characteristics and their opinions on the suitability of professions to conduct respiratory therapy research

Items	Total	Medical Doctors				p-value
		Agree		Disagree/neutral		
		N	%	N	%	
Gender						0.028
Male	185	117	63.2	68	36.8	
Female	65	31	47.7	34	52.3	
Specialty						<0.001
Nurse	50	27	54.0	23	46	
Physician	49	41	83.7	8	16.3	
Respiratory Therapist	151	80	53.0	71	47	
Work experience						0.016
≤10 years	162	87	53.7	75	46.3	
> 10 years	88	61	69.3	27	30.7	
Qualification degree						0.340
Bachelor	120	65	54.2	55	45.8	
Diploma	54	32	59.3	22	40.7	
Master	62	41	66.1	21	33.9	
PhD	14	10	71.4	4	28.6	
Hospital type						0.886
Public hospital	158	93	58.9	65	41.1	
Private hospital	92	55	59.8	37	40.2	

Table 5.8.1: Association between general characteristics and research knowledge, and beliefs about research

Items	Total	Knowledge on performing research according to educational attainment.				p-value	Beliefs about research when training to become a respiratory therapist				p-value	
		Agree		Disagree/neutral			Positive attitude		Negative attitude			
		N	%	N	%		N	%	N	%		
Gender											0.008	
Male	185	140	75.7	45	24.3	84	45.4	101	54.6			
Female	65	38	58.5	27	41.5	34	52.3	31	47.7			
Specialty												0.741
Nurse	50	34	68.0	16	32	26	52.0	24	48			
Physician	49	41	83.7	8	16.3	23	46.9	26	53.1			
Respiratory Therapist	151	103	68.2	48	31.8	69	45.7	82	54.3			

Work experience				0.118				0.348	
≤10 years	162	110	67.9	52	32.1	80	49.4	82	50.6
> 10 years	88	68	77.3	20	22.7	38	43.2	50	56.8
Qualification degree				0.015				0.251	
Bachelor	120	86	71.7	34	28.3	61	50.8	59	49.2
Diploma	54	30	55.6	24	44.4	20	37.0	34	63
Master	62	51	82.3	11	17.7	32	51.6	30	48.4
PhD	14	11	78.6	3	21.4	5	35.7	9	64.3
Hospital type				0.886				0.911	
Public hospital	158	112	70.9	46	29.1	75	47.5	83	52.5
Private hospital	92	66	71.7	26	28.3	43	46.7	49	53.3

Table 5.8.2: Association between general characteristics and interest if barriers removed among respiratory therapy professionals

Items	Total	Interest in pursuing a respiratory therapy research project If barriers were eliminated				p-value
		Yes		No		
		N	%	N	%	
Gender						0.310
Male	185	132	71.4	53	28.6	
Female	65	42	64.6	23	35.4	
Specialty						0.116
Nurse	50	33	66.0	17	34	
Physician	49	29	59.2	20	40.8	
Respiratory Therapist	151	112	74.2	39	25.8	
Work experience						0.026
≤10 years	162	105	64.8	57	35.2	
> 10 years	88	69	78.4	19	21.6	
Qualification degree						0.002
Bachelor	120	92	76.7	28	23.3	
Diploma	54	29	53.7	25	46.3	
Master	62	47	75.8	15	24.2	
PhD	14	6	42.9	8	57.1	
Hospital type						0.397
Public hospital	158	107	67.7	51	32.3	
Private hospital	92	67	72.8	25	27.2	

Table 5.9.1: Perceived barriers to conducting respiratory therapy research by the

Respondents' General Characteristics

Items	Lack of time and dedicated work hours		Lack of incentive (monetary, other)		Lack of skill and knowledge		Lack of access to resources	
	Median (Q1, Q3)	P-value	Median (Q1, Q3)	P-value	Median (Q1, Q3)	P-value	Median (Q1, Q3)	P-value
Gender		0.100		0.409		0.228		0.036
Male	2.0(1.0, 3.0)		2.0(1.0, 3.0)		2.0(1.0, 3.0)		2.0(1.0, 3.0)	
Female	1.0(1.0, 2.0)		1.0(1.0, 2.0)		1.0(1.0, 3.0)		2.0(1.0, 3.0)	
Specialty		<0.001		0.064		0.038		0.191
Nurse	1.0(1.0, 2.0)		1.0(1.0, 2.0)		2.0(1.0, 3.0)		2.0(1.0, 3.0)	
Physician	2.0(1.0, 4.0)		2.0(1.0, 3.0)		2.0(1.0, 4.0)		2.0(1.0, 3.0)	
Respiratory Therapist	1.0(1.0, 2.0)		2.0(1.0, 2.0)		2.0(1.0, 3.0)		2.0(1.0, 3.0)	
Work experience		0.638		0.977		0.385		0.532
≤10 years	1.0(1.0, 2.0)		2.0(1.0, 2.0)		2.0(1.0, 3.0)		2.0(1.0, 3.0)	
> 10 years	2.0(1.0, 3.0)		2.0(1.0, 2.0)		2.0(1.0, 3.0)		2.0(1.0, 3.0)	
Qualification degree		0.005		0.040		0.244		0.033
Bachelor	2.0(1.0, 2.0)		1.5(1.0, 2.0)		2.0(1.0, 3.0)		2.0(1.0, 3.0)	
Diploma	1.0(1.0, 2.0)		1.0(1.0, 2.0)		2.0(1.0, 3.0)		2.0(1.0, 3.0)	
Master	2.0(1.0, 3.0)		2.0(1.0, 3.0)		2.0(1.0, 3.0)		2.0(1.0, 4.0)	
PhD	2.5(1.0, 6.0)		3.0(1.0, 4.0)		2.5(2.0, 5.0)		3.5(2.0, 6.0)	
Hospital type		0.407		0.627		0.378		0.437
Public hospital	1.0(1.0, 2.0)		2.0(1.0, 2.0)		2.0(1.0, 3.0)		2.0(1.0, 3.0)	
Private hospital	2.0(1.0, 3.0)		1.5(1.0, 2.0)		2.0(1.0, 3.0)		2.0(1.0, 3.0)	

Table 5.9.2: Perceived barriers to conducting respiratory therapy research by the Respondents' General Characteristics

Items	Other personal commitments		Lack of peer and colleague support		Lack of recognition		Lack of interest	
	Median (Q1, Q3)	P-value	Median (Q1, Q3)	P-value	Median (Q1, Q3)	P-value	Median (Q1, Q3)	P-value
Gender		0.166		0.564		0.428		0.634
Male	2.0(1.0, 4.0)		2.0(1.0, 3.0)		2.0(1.0, 4.0)		2.0(1.0, 4.0)	
Female	2.0(1.0, 4.0)		2.0(1.0, 4.0)		2.0(1.0, 3.0)		2.0(1.0, 5.0)	
Specialty		0.215		0.362		0.158		0.548
Nurse	2.0(1.0, 4.0)		2.0(1.0, 3.0)		2.0(1.0, 4.0)		1.5(1.0, 4.0)	
Physician	3.0(2.0, 4.0)		2.0(1.0, 3.0)		2.0(2.0, 4.0)		3.0(1.0, 4.0)	
Respiratory Therapist	2.0(1.0, 4.0)		2.0(1.0, 3.0)		2.0(1.0, 3.0)		2.0(1.0, 4.0)	
Work experience		0.774		0.532		0.864		0.779
≤10 years	2.0(1.0, 4.0)		2.0(1.0, 3.0)		2.0(1.0, 4.0)		2.0(1.0, 4.0)	
> 10 years	2.0(1.0, 4.0)		2.0(1.0, 3.0)		2.0(1.0, 4.0)		2.0(1.0, 4.0)	
Qualification degree		0.193		0.817		0.535		0.693
Bachelor	2.0(1.0, 3.0)		2.0(1.0, 3.0)		2.0(1.0, 3.0)		2.0(1.0, 4.0)	
Diploma	2.0(1.0, 4.0)		2.0(1.0, 3.0)		2.0(1.0, 4.0)		2.0(1.0, 4.0)	

Master	2.0(1.0, 4.0)	2.0(1.0, 5.0)	2.0(1.0, 4.0)	2.0(1.0, 4.0)
PhD	2.5(2.0, 5.0)	2.0(1.0, 4.0)	2.5(2.0, 4.0)	3.5(1.0, 6.0)
Hospital type	0.655	0.590	0.370	0.590
Public hospital	2.0(1.0, 4.0)	2.0(1.0, 3.0)	2.0(1.0, 4.0)	2.0(1.0, 4.0)
Private hospital	2.0(1.0, 4.0)	2.0(1.0, 3.0)	2.0(1.0, 4.0)	2.0(1.0, 4.0)