ORIGINAL ARTICLE

A Feasibility Study of a Bachelor of Science Program in Respiratory Therapy in Thailand

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Background: The respiratory therapy profession is not yet established in Thailand. The first step toward its introduction is the development of a Bachelor of Science program in respiratory therapy.

Objectives: To examine the impacts of the respiratory therapy profession in Thailand, and to assess the feasibility of implementing a Bachelor of Science program in respiratory therapy in Thailand.

Materials and Methods: The present study was a qualitative research employing content analysis of interviews from key stakeholders in respiratory therapy services and education in Thailand, including professional councils, academic faculty, professional associations, university executives, and current respiratory therapy providers.

Results: All stakeholders acknowledged the benefits of the respiratory therapy profession across all sectors without significant drawbacks. Except for one stakeholder who viewed respiratory therapy as a subset of an existing discipline, all stakeholders accepted the respiratory therapy profession in Thailand. All current respiratory therapy providers expressed strong and urgent desires for respiratory therapists in their hospitals. Regarding the Bachelor of Science program, all stakeholders agreed that it aligns with university policies and would complement and integrate well into the existing educational system. They accepted and expressed a desire for introducing the program in Thailand and in their universities. All stakeholders confirmed that their institutions have adequate infrastructure to implement the program and can enroll students within one to two years.

Conclusion: Respiratory therapy profession would benefit all sectors and fill the gaps of existing respiratory therapy service and education in Thailand. The implementation of a Bachelor of Science program in respiratory therapy would be feasible.

Keywords: Respiratory therapy profession; Bachelor of Science program in respiratory therapy; Feasibility study

Received 22 April 2025 | Revised 24 June 2025 | Accepted 27 June 2025

J Med Assoc Thai 2025;108(8):676-87

Website: http://www.jmatonline.com

The respiratory therapy profession was officially established in the United States of America in 1947[1]. It is the healthcare discipline that specializes in the promotion of optimum cardiopulmonary function. Respiratory therapists implement the respiratory therapy order of the physician into patient care, reducing the workload on nurses and physicians, providing closer and more standardized care. The benefits of this allied health profession include better outcomes, less morbidities and mortalities, greater satisfaction of the patients and the healthcare providers, and decreased healthcare cost for patients, hospitals, and the countries[2-16]. The demand for respiratory therapists has been increasing across various settings, including acute care hospitals, chronic care or rehabilitation centers, nursing homes, or even patient's homes[17,18]. At present, Thailand has no respiratory therapists, no respiratory therapy profession, and no respiratory therapy educational programs in any higher educational institution. All the respiratory therapy diagnostic and therapeutic interventions are carried out by nurses, physicians, and physical therapists. Nurses bear the most respiratory therapy burdens along with their regular nursing duties. The first step toward the introduction of respiratory therapy profession in Thailand is the implementation of a Bachelor of Science program in respiratory therapy. There has been no study of the feasibility of such a program in Thailand.

From the literature review, no studies on the feasibility of a bachelor's degree program in

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How to cite this article:

Bunburaphong T. A Feasibility Study of a Bachelor of Science Program in Respiratory Therapy in Thailand. J Med Assoc Thai 2025;108:676-87.
DOI: 10.35755/jmedassocthai.2025.8.676-687-03090

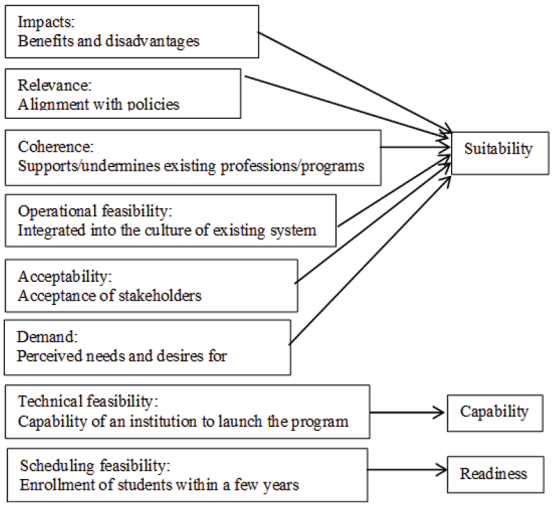

Figure 1. Conceptual framework for feasibility study.

respiratory therapy were found. Therefore, the researcher reviewed conceptual frameworks for feasibility studies of other health science programs and projects[19-26], selected eight relevant domains, and used them as the conceptual framework for the present study. These domains were grouped into three major domains, suitability, capability, and readiness, as shown in Figure 1. Suitability is assessed by impacts, relevance, coherence, operational feasibility, acceptability, and demand.

Objectives

1) To examine the impacts of the respiratory therapy profession in Thailand.

2) To assess the feasibility of implementing a Bachelor of Science program in respiratory therapy in Thailand by considering the aspects of suitability, capability, and readiness.

Hypotheses

1) The establishment of the respiratory therapy profession in Thailand would benefit all relevant sectors, including patients, healthcare personnel, hospitals, healthcare system, and the country.

2) The Bachelor of Science program in respiratory therapy would be feasible in terms of suitability, capability, and readiness.

Materials and Methods

Study design

The present study was a phenomenological, qualitative research aiming at exploring the experiences and opinions of all key stakeholders to understand the current situation of respiratory therapy service in Thailand and the opinions on establishment of the respiratory therapy profession and a Bachelor of Science program in respiratory therapy.

Participants and sampling

There were six categories of target populations in the present study. They are described below.

Category A: Health professional councils. The establishment of the respiratory therapy profession needs opinions from relevant existing health professional councils, including, Medical Council of Thailand, Thailand Nursing and Midwifery Council, and Physical Therapy Council. The Royal college of Anesthesiologists of Thailand was included in this category because it would be the potential professional regulatory organization. The Presidents of these organizations are the ones who hold the rights to give opinions on behalf of the organizations. There were four target population in this category. Total population sampling was selected as the sampling method. Therefore, there were four target participants in Category A.

Category B: Respiratory therapy instructors. The instructors of respiratory therapy courses are the most knowledgeable individuals regarding the respiratory therapy profession and the state of respiratory therapy services in the country. The target population for this group includes the administrators of respiratory therapy courses in undergraduate or postgraduate programs. Currently, there are three programs that meet this criterion. The sampling technique employed was total population sampling. Therefore, there were three targeted participants, the Director of the Inhalation Therapy Division, Department of Anesthesiology, Faculty of Medicine Ramathibodi Hospital, Mahidol University, the Director of the Division of Pediatric Pulmonology, Department of Pediatrics, Faculty of Medicine Ramathibodi Hospital, Mahidol University, and the Director of the Pediatric Respiratory Nursing Course, Department of Pediatrics, Faculty of Medicine, Chulalongkorn University.

Category C: Professional associations and societies. Establishing a dedicated respiratory therapy profession in Thailand requires input from relevant professional associations and societies, including the Thai Society of Critical Care Medicine, the Thai Society of Pediatric Respiratory and Critical Care Medicine, the Thoracic Society of Thailand under Royal Patronage, the Thai Respiratory Care Club, the Intensive Care Nurses Society of Thailand, and

the Pulmonary and Cardiovascular Physical Therapy Group of Thailand. The target population for the present study were the presidents or chairpersons of these organizations. Total population sampling was employed. Therefore, there were six target participants in Category C.

Category D: Higher education institutions. Since implementation of a Bachelor of Science program in respiratory therapy requires faculty members from existing programs, higher education institutions with the potential to establish this program should already offer undergraduate programs in medicine, nursing, and physical therapy. Currently, thirteen universities across the country meet these criteria: Chiang Mai University, Chulalongkorn University, Khon Kaen University, Mae Fah Luang University, Mahidol University, Naresuan University, Navamindradhiraj University, Phayao University, Prince of Songkla University, Rangsit University, Srinakharinwirot University, Thammasat University, and Walailak University. The target population for the present study was the presidents of these universities. Total population sampling was employed. Therefore, there were thirteen target participants in Category D.

Category E: Current formal respiratory therapy providers. There are currently eight hospitals in Thailand that have dedicated respiratory therapy service units: Bumrungrad International Hospital, Phrapokklao Hospital, Phra Phutthabat Hospital, Phrachomklao Hospital, Ramathibodi Hospital, Rajavithi Hospital, Ratchaburi Hospital, and Songklanagarind Hospital. The target population for the present study was the heads of these respiratory therapy service units. Total population sampling was employed. Therefore, there were eight target participants in Category E. However, the researcher also anticipated the possibility of additional participants resulting from snowball sampling. The researcher did not include all respiratory therapy providers as the target population because operational-level personnel in Thailand are generally not yet aware of the existence of respiratory therapy profession and are not able to provide information regarding policies and demands for workforce.

Category F: Current informal respiratory therapy providers. Since respiratory therapy service units do not currently provide 24-hour services, intensive care unit (ICU) or ward staff have to provide respiratory therapy service on their own when the service is not available. This category of stakeholders is best suited to providing information regarding service problems and differences between having and not having respiratory therapy services. The selection criterion for this category of participants was the heads of ICUs in the same hospital as Category E who utilized services from the respiratory therapy unit. Total population sampling was employed, resulting in eight target participants.

The researcher employed a qualitative research approach by conducting interviews with executives from all stakeholder groups. The reason for not adopting a quantitative approach such as distributing questionnaires to members of each stakeholder group was that it is highly likely that members of the stakeholder groups have very limited knowledge about the profession. Executives, on the other hand, are the individuals most likely to be familiar with the profession. Furthermore, executives are the ones authorized to answer questions regarding policies, workforce demand and allocation, technical capability, resources, and budgets. Such information could not be reliably obtained from non-executive members. Regarding sampling method, total population sampling was chosen due to the small number of target populations in each group. There was no sampling method that would provide more reliable representativeness than studying the entire population in such a context.

The total number of target participants across all six groups was forty-two. The number may increase through snowball sampling in Category B, E, and F. If the target number of participants could not be reached, the researcher would continue conducting interviews until data saturation was achieved.

Research tools

The researcher developed interview guides based on the studied domains outlined in the conceptual framework of the present study. Five experts in respiratory therapy, education, or research were invited to review the content validity of the questions using the item-objective congruence (IOC) method. Only questions with an IOC score of no less than 0.6 were accepted. Since not every question in each domain of the feasibility study is suitable for all groups of research participants, for example, individuals unfamiliar with respiratory therapy services would be unable to answer questions regarding the necessity and demand for the profession, or individuals who are not university executives would not be in a position to respond to questions concerning institutional policies, resources, and budgets, the researcher therefore identified appropriate participant groups to answer

Table 1. Studied domains, interview guides, and target participant categories

Studied domains		Interview guide questions	Participant
Impacts	Positive	I1: Please give your opinions on the positive impacts of having RT profession in Thailand.	A,B,C,E,F
	Negative	I2: Please give your opinions on the negative impacts of having RT profession in Thailand.	A,B,C,E,F
Relevance	Profession	R1: How do you think the RT profession conforms to the health policies and strategies of the country or your organization?	A,B,C,E,F
	Program	R2: How do you think the bachelor's degree program in RT conforms to the policies of the country or your institution?	B,D
Coherence	Existing professions	C11: How will the RT profession support or enhance the existing professions?	A,B,C,E,F
		C12: How will the RT profession hinder or undermine the existing professions?	A,B,C,E,F
	Existing programs	C21: How will the bachelor's degree program in RT support or enhance the existing programs?	B,D
		C22: How will the bachelor's degree program in RT hinder or undermine the existing programs?	B,D
Operational feasibility		O1: How likely is it that RT professionals will be incorporated into multidisciplinary patient care team?	A,B,C,E,F
		O21: How likely is it that the bachelor's degree program in RT will be incorporated into the curricula of higher educational institutions in Thailand?	B,D
		O22: How likely is it that the bachelor's degree program in RT will be incorporated into the curricula of your institution?	B,D
Acceptability	Reasons to accept	A11: Please give reasons why RT profession should be accepted in Thailand.	A,B,C,E,F
		A12: Please give reasons why bachelor's degree program in RT should be accepted in Thailand.	B,D
	Reasons to reject	A21: Please give reasons why RT profession should not be accepted in Thailand.	A,B,C,E,F
		A22: Please give reasons why bachelor's degree program in RT should not be accepted in Thailand.	B,D
	Acceptance	A31: Do you accept the RT profession in Thailand?	A,B,C,E,F
		A32: Do you accept the RT profession in your organization?	E,F
		A33: Do you accept the bachelor's degree program in RT in Thailand?	B,D
		A34: Do you accept the bachelor's degree program in RT in your university?	B,D
Demand	Necessity	D1: How do you see any necessity of RT profession in Thailand?	A,B,C,E,F
	Desires for the profession	D21: Do you want to have RT profession in Thailand?	A,B,C,E,F
		D22: Do you want to have RT profession in your organization or workplace?	E,F
		D23: Are you afraid that respiratory therapists will take away or replace your current job?	E
	Desires for the program	D31: Do you want to have bachelor's degree programs in RT in Thailand?	B
		D32: Do you want to have a bachelor's degree program in RT in your university?	B,D
Technical feasibility		T1: Does your university have the technical capability to launch a bachelor's degree program in RT?	D
		T2: What resources need to be developed? What is the most problematic development in your university?	D
Scheduling feasibility (readiness)		S: If your university were to launch the program, how long would it take until enrollment of students?	D

A=professional councils; B=respiratory therapy instructors; C=professional associations; D=higher education institutions; E=formal respiratory therapy providers; F=informal respiratory therapy providers; RT=respiratory therapy

each interview question, as shown in Table 1. The questions were then compiled into tailored interview guide set for each group of participants.

Data collection

The researcher sent official invitation letters and the participant information sheet approved by the Siriraj Institutional Review Board (IRB) to the workplaces of all target research participants. If no response was received within two weeks, a second invitation letter was sent. If there were still no response, the researcher made follow-up phone calls. If the participant could not be reached after two attempts, it was considered that they were not interested in participating in the present study.

Upon acceptance into the present study, the researcher sent the interview guide to the participants in advance to allow them to prepare information for the interview. All participants were informed in writing that their responses would be regarded as the collective opinions of their organization or institution, not as their personal opinions. Participants were given two weeks to gather information from their organization's committee or members before scheduling the interview.

Participants could choose to be interviewed either in person or online. Interviews were audio-recorded in both modes. The recordings were transcribed verbatim, with any identifying information about individuals or institutions removed. The transcripts were then sent back to participants for review, correction, and signature confirmation before proceeding to data analysis.

Table 2. The number and occupations of participants

Category	Target number	Actual number	Occupation				
			Doctor	Nurse	Physical therapist	Biomedical engineer	Engineer
A	4	4	2	1	1	-	-
B	2	3	2	1	-	-	-
C	6	6	3	2	1	-	-
D	13	4	1	-	2	-	1
E	8	8	2	5	-	1	-
F	8	8	3	5	-	-	-
Total	41	33	13	14	4	1	1

A=professional councils; B=respiratory therapy instructors; C=professional associations; D=higher education institutions; E=formal respiratory therapy providers; F=informal respiratory therapy providers

Data analysis

Content analysis of the validated transcripts using deductive approach and followed by inductive approach was independently performed by the researcher and two qualitative research specialists who have no conflicts of interest with the present study. The two data analysis experts are medical professors who used to study abroad and are knowledgeable about respiratory therapy profession. Both experts were informed about the research protocol and were briefed on the coding frame before independently assigning codes and themes. Comparisons of codes and themes from all analyses yielded a satisfactory percentage agreement. The analysis results from all three analysts were then subjected to triangulation, where differing perspectives were discussed until a consensus was reached. The final analysis summary was subsequently reviewed by every analyst before being incorporated into the full paper report.

Ethical approval

The present research was a thesis submitted in partial fulfilment of the requirements for the degree of Master of Science in Health Science Education, Faculty of Graduates Studies, Mahidol University. The protocol was approved by the thesis committee and Siriraj IRB, Mahidol University, certificate of approval No. Si. 191/2023.

Results

Participants and characteristics

The researcher could get all of the target participants in all categories except Category D, which was the category of university executives. Only four universities participated, one university formally declined, while the rest did not respond despite repeated attempts to contact them. There were thirty-three actual participants. The target and actual number as well as occupations of the participants are presented in Table 2. Please note that the 33 participants referred to the cumulative number across all domains of studies. However, when considered separately by each specific domain, the number of participants is fewer than 33. For instance, the domain "impacts of the respiratory therapy profession" did not include input from university executive group, resulting in only 29 total participants. Similarly, the domains "technical feasibility and readiness of the program implementation" included only input from the university executive group, resulting only four participants. This pattern applied to other topics as well.

Impacts of the respiratory therapy profession in Thailand

All participants brought up the benefits of the respiratory therapy profession in Thailand across all sectors, with 29 counts out of 29 participants, including

1. Benefits to patients: All participants pointed out patient benefits, including:

1.1 Close care by specialists, as evidenced by the quotes:

A1: "The patients will receive better quality of respiratory care."

A2-4,B1-3,C1-6,E2-3,E5,E7-8,F1-7: "close and effective care by specialists"

E1: "We realize that doctors and nurses have inadequate knowledge and skills in respiratory care. If we have respiratory therapists, patients will receive care from specialists."

E4: "Respiratory therapists can surely provide respiratory cares that are correct, hit the spot, and have better outcomes."

E6: "Respiratory therapists seem to be better suited than physicians to serve as consultants and

troubleshooters in respiratory therapy issues for nurses."

F8: "Patient outcomes should be absolutely better."

1.2 Improved outcomes, as evidenced by the quotes:

B3,E4-8,F1,F4-8: "better outcomes of respiratory care"

B2,C2,E2,F4: "reduced complications"

F4: "reduced respiratory infections"

C2,E2,F4 "shorter ventilator days"

B2,C2,E2,F4: "shorter hospital stay"

C2: "reduced mortality"

E3: "increased patient safety"

1.3 Reduced cost, as evidenced by the quote:

F4: "reduced patient cost"

2. Benefits to healthcare personnel, including

2.1 Reduced workloads, as evidenced by the quotes:

A1-2,A4,B2-3,C2-3,C5-6,E1,E3-5,E7,F5,F7-8: "can reduce workloads of personnel." (including doctors, nurses, and physical therapists)

B1,C1,E6,F1-3: "can reduce workloads of nurses." (mentioned specially to nurses)

F4: "Respiratory therapists can reduce the workload of nurses the most, and reduce the workload of doctors to a significant extent."

2.2 Better professional duties, as evidenced by the quotes:

A1: "Nurses will have more time available for nursing care."

E2: "Nurses will be very pleased and they can provide better nursing care."

B1-3,C1,C3,E3,E6-7,F1,F3,F7: "Nurses can perform their professional duties better."

2.3 Reduced stress, as evidenced by the quotes:

B2-3,C3,E4-7,F1,F5-6,F8: "helps reduce stress"

E3: "Nurses responsible for respiratory therapy often experience high levels of stress. We are required to perform tasks we may not fully understand or feel confident about. When we report a ventilator problem to the doctors, they may not be able to solve it. We are often forced to witness patients suffering from respiratory distress. Doctors may not arrive in time to help in an emergency. We sometime face reprimands from doctors. For all what I have said, I am quite sure that every nurse involved in respiratory therapy would be immensely relieved and grateful to have respiratory therapists available."

F3: "I feel stressed at work. Undergraduate studies haven't taught me enough to help the patient effectively. Sometimes even doctors still can't help them. I feel pity bad we are unable to take better care of them. Moreover, respiratory therapy requires time and close monitoring, which leaves me with insufficient time to fulfill my nursing duties properly."

2.4 Improved respiratory therapy knowledge, as evidenced by the quote:

E4: "Respiratory therapists can help improve respiratory care knowledge of other personnel."

3. Benefits to hospitals, including

3.1 Better quality of care, as evidenced by the quotes:

C2-3,C5,E1-4,E6-7,F1-2,F4-5: "better quality of care"

E3: "Better outcomes reflect higher quality of care."

3.2 Decreased hospital expenses, as evidenced by the quotes:

C2-3,E3,E6,F1-2,F5: "decreased hospital expenses"

3.3 Reduced complaints, as evidenced by the quote:

E3: "reduced patient complaints"

3.4 More availability of beds, as evidenced by the quote:

E4: "more available beds"

4. Benefits to healthcare system, as evidenced by the quotes:

A4,B1: "We will have specialists to fill the gaps in respiratory care."

C2,C5,F5: "The healthcare system will be more complete."

C3,E7,E8: "Our healthcare system will reach international standards."

5. Benefits to the country, including

5.1 Higher standard of patient care, as evidenced by the quotes:

C2,C3,C5,E1,E4,E7,F1,F2,F4: "Raises the standard of health care to an international level"

E3: "Thailand will have a full range of health professionals, comparable to developed countries."

5.2 Reduced expenses, as evidenced by the quotes:

C3,E3,F1: "Reduced healthcare costs of the country"

5.3 Possibility of generating national income, as evidenced by the quote:

E3: "It serves as a channel for generating national revenue by attracting international students to study respiratory therapy programs in Thailand."

Regarding negative impacts, almost all of the participants could not see any drawbacks, with 28 counts out of 29 participants. Only one participant,

or one count out of 29 participants, did not mention that there was no drawback, and was the one who viewed respiratory therapy as a subset of an existing profession, not a new discipline, as evidenced by the quote:

C4: "Overlapping tasks may cause professional conflicts. There might be another professional litigation, just like that between nurses and pharmacists recently."

However, among those participants who mentioned no drawbacks, some pointed out the possibility of professional conflicts during the transition period with seven counts out of 28. All of these participants viewed these conflicts as a challenge rather than a drawback with seven counts out of seven participants. As evidenced by the quotes:

A1: "Theoretically, there should be no disadvantages of having a new health profession. However, in practice, professional conflicts may arise during transition period. These conflicts can be prevented by clearly defining professional roles and responsibilities, creating awareness and acceptance among current personnel in advance, and fostering communications and mutual understandings among working team. In fact, they are not drawbacks, but rather challenges of the new profession."

A2: "If professional roles is not set clear, overlapping tasks may cause competing work or evading work. Some procedures may be repetitive while some may be neglected."

A3: "Some interventions are overlapping, but they complement and fill the gaps of each other. A respiratory therapist can adjust oxygen and ventilator while a physical therapist performs chest physical therapy. Otherwise, the intervention would be cancelled."

B1: "Some nurses may feel that their roles and significance are being diminished. In fact, respiratory therapists can ease our non-professional burdens and help us fulfil our nursing duties better."

B2: "Overlapping tasks not necessary lead to conflicts, in contrast, they can complement the care needed by patients, for example, nurses have to perform respiratory therapy procedures when respiratory therapists or physical therapists are unavailable, or, for some procedures that cannot be performed by one person, a nurse and a respiratory therapist have to do them together."

C2: "There may be some conflicts at the beginning, but once effective teamwork is established, problems are unlikely to persist."

E7: "Differences in practice can cause conflicts in the initial phase. However, these conflicts must ultimately arrive at correct conclusions, rendering correct cares for the patients."

In summary, the establishment of the respiratory therapy profession in Thailand would benefit patients, healthcare personnel, hospitals, healthcare system, and the nation without significant drawbacks.

Feasibility of the Bachelor of Science program in respiratory therapy

The findings in the eight domains of feasibility study were as follows:

1. Impacts: As stated above, the establishment of the respiratory therapy profession in Thailand would benefit all relevant sectors without significant drawbacks.

2. Relevance: All participants agreed that the establishment of respiratory therapy profession aligns with national health policies as well as with the policies of their respective organization with 29 counts out of 29 participants. All participants agreed that a Bachelor of Science program in respiratory therapy aligns with national policies as well as with the policies of their respective institutions with seven counts out of seven participants.

3. Coherence: All participants agreed that the respiratory therapy profession would support and enhance existing professions in various ways with 29 counts out of 29 participants, as quoted:

A1,A3,B2-3,C2,C4,E3-6,E8,F1-8: "would support one another"

A1-2,A4,B1-2,C1-3,C5,E4,E6,F1,F3-6: "helps taking care of the patients"

A1-2,A4,B2,C1,C3,C5,E1-2,E5,E7,F1-8: "relieves the excessive workload"

A1,A4,C1,C3,C6,E4,E7,F1-4,F7-8: "more time to work with professional duties"

A4,C5: "improves respiratory therapy knowledge of current personnel"

E3: "solves clinical respiratory therapy problems encountered by doctors and nurses"

All participants believed that the respiratory therapy program could support and enhance existing academic programs in universities in various ways, with seven counts out of seven participants, as quoted:

B1,B2,D1: "more complete interprofessional education"

B3,D3: "can strengthen respiratory therapy science being taught in other programs"

B1: "filling the gaps in health science education"

4. Operational feasibility: Almost all participants believed that the respiratory therapy profession could

integrate into multidisciplinary patient care teams and into the Thai healthcare system with 28 counts out of 29 participants.

A1: "It is already integrated in patient care teams in many countries"

A3: "It certainly could. I haven't heard of any new health professional that cannot integrate into patient care teams."

A4: "Possible. Nowadays more and more health professionals emerge and integrate into patient care team."

B1-3,C1-6,E1-8,F1-8: "possible" or "absolutely possible" or "There should be no problems."

One participant had insufficient information to make a decision, as quoted:

A2: "I'd rather wait for information about roles and responsibilities of the profession before I can make a decision."

All participants were confident that a Bachelor of Science program in respiratory therapy could be incorporated into the culture of the educational system of Thailand as well as that of the university, with seven counts out of seven participants.

In summary, the findings showed strong support for the operating feasibility of the respiratory therapy profession and educational program.

5. Acceptability: Almost all participants accepted the respiratory therapy profession in Thailand, with 28 counts out of 29 participants. One participant did not accept the profession, viewing that respiratory therapy is not a new profession, as quoted:

C4: "It is not a new profession, but a subset of ..."

Regarding the acceptance of respiratory therapy program, all participants who had sufficient information accepted a Bachelor of Science program in respiratory therapy in Thailand and within their respective universities, with six counts out of six participants.

6. Demand: All participants agreed on the necessity of the respiratory therapy profession, with 29 counts out of 29 participants. Regarding a desire to establish the profession in Thailand, most participants agreed, with 26 counts out of 29 participants, while two participants rejected, with two counts out of 29 participants, and one participant could not yet make a decision, as quoted:

C4: "not a new profession, but a subset of ..."

A4: "not yet necessary at the present time because there are currently no gaps in workforce and quality of respiratory therapy service in Thailand."

C6: "I cannot answer it right now. I'll wait to see whether graduates could prove beneficial as expected before making a decision."

All current respiratory therapy providers expressed a strong and urgent desire to have respiratory therapists in their hospitals, with 16 counts out of 16 participants, as quoted:

E1-2,E4-5,E7,F1-2,F5,F8: "We want respiratory therapists."

E3: "Just can't wait to welcome them."

E6: "We want them as soon as possible."

E8: "We are praying for them."

F3: "It will be best if we have them in every shift of duty."

F4: "A great blessing for patients if this profession is established soon."

F6: "I hope we see respiratory therapists before I retire."

F7: "Thailand should have already had respiratory therapists."

Regarding the Bachelor of Science program in respiratory therapy, except for one participant who had insufficient information, all expressed a desire for the program in their universities, with six counts out of six participants.

7. Technical feasibility: All participants were confident that their universities have the technical capability to establish a Bachelor of Science program in respiratory therapy, with four counts out of four participants. However, the major challenges varied across institutions, including "lack of clinical training sites", "shortage of qualified instructors", and "still no program initiator and director".

8. Readiness: All participants agreed that if the curriculum were ready, their universities could enroll students within two years, with four counts out of four participants.

To provide a clearer summary of the findings, the researcher presented the results using bar graphs presented in Figure 2. These graphs illustrate the percentage of code frequencies identified through content analysis, relative to the number of participants who were able to provide a decision on each particular issue. Participants who responded that they were unable to decide or lacked sufficient information to answer were excluded from the denominator when calculating the percentages. The bars representing the "Yes" responses include the following interpretations, recognition of benefits, recognition of drawback, alignment with policies, coherence with existing professions or programs, perceived necessity, acceptance of the profession or the program, expressed a desire for the profession or

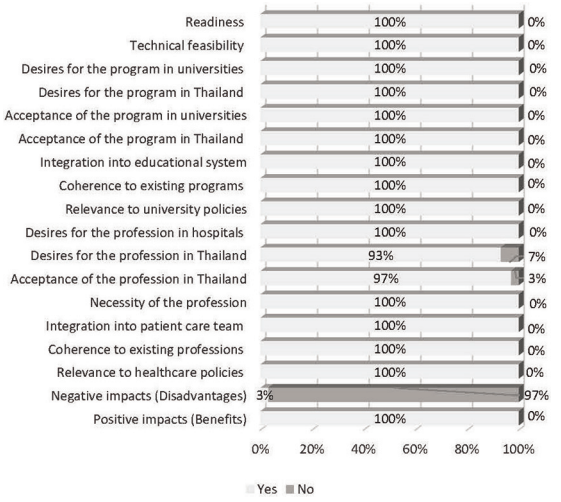

Figure 2. Graphic presentation of the research findings.

the program, confidence of the institutional capability to implement the program, and ready for student enrollment within two years. Conversely, the "No" bars represent responses that oppose or disagree with the above statements.

Suitability of the respiratory therapy profession is assessed by impacts, relevance, coherence, operational feasibility, acceptability, and demand. All stakeholders agreed that the profession of respiratory therapy is necessary, beneficial, aligns with national and hospital policies, supports and enhances existing professions, and can be integrated into patient care teams. Regarding acceptance and demand for the profession, one participant from professional association group did not accept the respiratory therapy profession in Thailand, believing that it is not a new profession but rather a subset of an existing one. One participant from professional council group accepted the profession but did not support its establishment, viewing that there is currently no respiratory therapy service gap. All other research participants accepted and expressed a desire for the establishment of this profession in Thailand. In particular, current respiratory therapy providers expressed a strong and urgent desire for respiratory therapists. Therefore, it can be concluded that establishing respiratory therapy profession in Thailand is appropriate and timely.

Suitability of the Bachelor of Science program in respiratory therapy is assessed by suitability of the profession, relevance, coherence, operational feasibility, acceptability, and demand. All stakeholders agreed that a Bachelor of Science program in respiratory therapy aligns with national and university policies, supports and enhances existing academic programs, can be integrated into the university's educational system, and all accepted and expressed a desire to have this program in their institutions. Therefore, it can be concluded that establishing a Bachelor of Science program in respiratory therapy in Thailand is suitable.

Technical capability of the universities to implement the Bachelor of Science program in respiratory therapy is guaranteed by all of the university executives.

Readiness of the universities to launch the program is evidenced by the confidence of all the executives that they can enroll students within two years.

In summary, a Bachelor of Science program in respiratory therapy in Thailand would be feasible due to the suitability of both the profession and the program, as well as the capability and readiness of the universities.

Discussion

The research findings were consistent with both initial hypotheses. However, several noteworthy issues emerged that warrant further consideration for a deeper understanding.

1. There are differing opinions regarding the acceptance of this profession in Thailand. One participant in the professional associations group did not accept it, viewing it as a subset of an existing profession despite the fact that respiratory therapy has been established as an independent profession globally for over 70 years. This phenomenon reflects the limited awareness of the existence of this profession within the Thai context. Anyone who intends to establish this profession in Thailand should first promote awareness of the profession and its benefits among all stakeholder groups.

2. There were differing perspectives on respiratory therapy service gaps in Thailand at the present time. One participant in professional councils group believed that there is currently no gap in respiratory therapy services. However, all participants from the respiratory therapy instructors group and current formal and informal respiratory therapy providers groups perceived a significant gap and expressed urgent desires for the introduction of this profession. This finding again reflects the limited awareness and understandings of this profession among stakeholders, providing an opportunity to further study how wide the gap in respiratory therapy services in Thailand truly is.

3. A contradiction was observed in the opinion of the same participant. Three participants perceived the necessity of the profession but rejected to introduce it in Thailand. One participant from the professional councils group felt there are no gaps at the present time. One participant from the professional associations group considered respiratory therapy a subset of an existing profession. Yet another participant from the professional associations group would rather wait to see whether the graduates could prove beneficial before making a decision. The researcher is unable to explain the reasons behind this contradiction. The interview questions in the present study were not designed to probe deeply into the underlying reasons behind the participants' responses. This presents an opportunity for further investigation into the causes of this contradiction.

Limitation

The researcher noted limitations of the present research, including

1. The actual number of participants in university executive group was significantly lower than the initial target. Although the researcher got only four participants, it was found that the management-related data provided by all participants were virtually the same, showed no variation and no new theme emerged. Therefore, the information can be considered saturated.

2. There might be a possibility of coercion. Since the researcher had taught respiratory therapy for over 30 years and most of the participants in Category B, E, and F had already known the researcher in a teacher-student relationship. However, even if the researcher has retired from government service for more than five years, there might be a little influence remaining. Importantly, the researcher did make every effort to clearly communicate the purpose of the study and to encourage participants to provide their genuine opinions.

3. The use of individual opinions to represent the collective views of entire organizations poses a methodological limitation. Even though the researcher clarified the necessity of this approach, requesting participants to consult with their organization's members, and allocated time for them to gather information prior to scheduling the interviews, only one participant brought the matter to a formal meeting to collect collective input. Therefore, the data obtained might not fully represent the collective perspectives of the stakeholder group. However, the researcher still believes that the data obtained from the executive is more credible than that from individual organizational members. In addition, some participants did not delegate a representative with sufficient knowledge of the profession to be interviewed, resulting in data that could not be utilized for certain aspects. Nonetheless, the interviews still provided reliable insights into organizational policies and workforce needs.

Conclusion

It can be concluded that all stakeholders acknowledge and support the establishment of the respiratory therapy profession and the Bachelor of Science program in respiratory therapy in Thailand. The findings of the present research can serve as supporting evidence for the decision to implement the program in the country. This will pave the way for the development of the respiratory therapy profession in Thailand, ultimately benefiting patients, healthcare personnel, and all relevant sectors.

What is already known about this topic?

The respiratory therapy profession has existed for more than 70 years and has been proven to benefit patients, healthcare personnel, hospitals, and nations. However, Thailand still does not have this profession. No university has yet offered a Bachelor of Science program in this field. No feasibility study on implementing such a program has ever been conducted.

What does this study add?

Stakeholders in Thailand have accepted and expressed a desire for the establishment of the respiratory therapy profession in the country. Universities also have the capability and are ready to offer this program. The results of this study should serve as supporting evidence for the establishment of a Bachelor of Science program in respiratory therapy in Thailand, helping the country to develop a more complete healthcare workforce.

Countries aiming to develop the respiratory therapy profession can use this feasibility study framework as a guideline.

During the interviews, the researcher gathered several suggestions that, while not directly related to the research objectives, provide valuable insights for implementing the curriculum and mitigating professional conflicts during the transition period. These recommendations include:

1. Curriculum development: The curriculum should emphasize educating the students about professional roles and responsibilities, which

include implementing physicians' respiratory therapy treatment plans to the patients and relieving respiratory therapy workload from the nurses. Students should be trained to work seamlessly in a multidisciplinary patient care team.

2. Professional legislation: Curriculum administrators should collaborate with the government representatives to pass legislation for the respiratory therapy profession before the first group of students graduate.

3. Job positions in governmental hospitals: Curriculum administrators should coordinate with the Office of the Civil Service Commission to set up job positions and job frameworks for respiratory therapists in governmental hospitals.

4. Professional regulation: While an independent professional council for respiratory therapy is not yet established, curriculum administrators should coordinate with one of the professional colleges to oversee licensing and regulation of the profession.

5. Prevention and mitigation of professional conflicts: clearly defining professional roles and responsibilities, creating awareness and acceptance in advance, and fostering communications and mutual understanding among working teams.

Acknowledgement

The author would like to express gratitude to all participants, thesis advisors, thesis committee, quantitative data analysts, and raters of IOC, for their time and dedication that make possible this thesis.

Data availability

The data that support the findings of the present study are available on request to the author.

Conflicts of interest

The author declares no conflict of interest.

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