The Model of Nursing Administration and Quality of Working Life Management of Nurses after COVID-19 Pandemics, in Thailand

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KEYWORDS	ABSTRACT
Nursing administration, quality of working life, nurses, COVID-19	The research results showed that 1) Conditions and guidelines the nursing administration and quality of working life in during and after the pandemics COVID-19 were explored and found that executives understood their personnel and emphasized that relevant personnel must perform their duties according to the measures to prevent the spread of COVID-19. Problems found included insufficient personnel for the work and overlapping roles. Factors that supported personnel to manage their work quality after the COVID-19 outbreak included teamwork, participation in planning and solving work safety issues, having time for work and family, and job satisfaction. The guidelines for operations after the COVID-19 outbreak should include changes to the work system, building morale, participation, teamwork, and job satisfaction. Good time management could affect the quality of life of nurses. 2) In the study of measurement model, it was found that all sub-component latent variables were suitable as the observed variables of each main component, and all main components were suitable as the observed variables of the nursing administration model and the management of working life quality of nurses after the COVID-19 outbreak. When checking the consistency of the measurement model, the measurement model was consistent with the empirical data, thus confirming the development of the nursing administration model and the management of working life quality of nurses after the COVID-19 outbreak in Thailand, by the linear structural component analysis method. 3) the model of nursing administration and quality of working life management of nurses after the COVID-19 pandemic in Thailand or SWAP FECT MODEL; it was found that all experts confirmed that the model was a model with practical steps, consisting of 2 main components, 10 sub-components, and 66 indicators. The main components of nursing administration in the VUCA model had 3 sub-components: transparency, empowerment of subordinates, and collaboration. The main components of management of working life quality had 7 sub-components: agency support, work safety, work participation, work satisfaction, well-being, self-development, and free time management. There were 3 steps of good management: 1. Inputs 2. Processes and 3. Outputs.

1. Introduction

Since the outbreak of the Coronavirus Disease 2019 (COVID-19), which has spread rapidly and widely throughout the glob, resulting in many infected and dead people, The World Health Organization (WHO) has declared the outbreak of COVID-19 as a Public Health Emergency of International Concern (PHEIC) on January 30, 2020. Medical and public health personnel are at risk of exposure to the coronavirus while they are on duty, especially in the situation of widespread outbreak of the disease. When medical and public health personnel become ill, it will affect their duties and lead to the spread of the disease to their colleagues, other patients, and family members. That means that the quality of life of nurses is negatively affected.

In Thailand, according to data reported by the Disease Control Investigation Operation Group, Department of Disease Control (2022), the situation of the coronavirus disease 2019 among the medical personnel group between January 1, 2020 - March 12, 2022 (waves 1-4), it was found that 18,428 medical personnel were infected, accounting for 0.58 percent of all infected persons. Among the infected medical personnel, the male to female ratio was 1:3.2. The most infected persons were found in the age group of 20-29 years (36.36 percent), followed by the age group of 30-39 years (30.43 percent).When classifying the occupations of medical personnel infected with the 2019 coronavirus, there were 3,974 cases, the highest number was found in the group that identified as other medical personnel, such as public health officers, pharmacists, medical record officers, and other personnel working in hospitals, at 89.81 percent, followed by nurses at 6.6 percent, nursing assistants or patient assistants at 2.09 percent, doctors at 1.48 percent, medical technicians or laboratory personnel at 0.25 percent, and medical students or nursing students at 0.15 percent, respectively (Jiraporn Phrom Mongkol et al., 2022, page 442).It can be seen that if we consider by

profession, we will find that nurses are a group of medical personnel who are infected at 6.6 percent, which is a very high rate. As we know, when infected, it affects life, risk of disease, work, family, economy and society respectively.

The factors that affect the quality of working life are mostly organizational commitment, job characteristics, organizational atmosphere, which have a positive relationship with the quality of life of nursing personnel (Kongkaew Yuanboonlim, Kitiyakon Klongdee, Pitiya Phirunamornphan, Panjit Phothong, and Piyathida Rungmatcha, 2021, p 59).In addition, there are personal factors, emerging disease factors such as COVID-19, and an increase in the number of people seeking health services, which has increased the workload of nurses working in health care facilities at all levels across Thailand. This is because there is already a shortage of nurses in a normal situation, which has a significant impact on quality of life. In addition, the nature of the work has changed from the original. In addition to nursing work that requires knowledge, skills, and specific skills in nursing operations, they must coordinate with various multidisciplinary professions. While working, they must deal with stressful situations which pressurize them to beware of their safety while performing nursing care to the patients and trying to keep themselves from being infected. This affects the work atmosphere, causing anxiety, irritation, and leading to physical illness and poor mental health.

Quality of working life is an important factor affecting the efficiency of work in an organization. If the quality of working life of employees is good, it will make them feel happy while working and work with dedication, sacrifice and determination. On the contrary, if the quality of working life is not good or there is dissatisfaction of the workers, it will have a negative effect on the work and on the organization. Therefore, the nursing organization, which is the highest organization for nurses in the hospital, should give importance to the quality of life of nurses, especially after the outbreak of COVID-19 since the end of 2019, which the Thai government has designated as a dangerous communicable disease until now. Later, on October 1, 2022, the situation decreased in severity and vaccines had been widely available. Therefore, the severity of communicable disease management had been upgraded to a communicable disease under the Communicable Diseases Act B.E. 2558 for the purpose of surveillance, prevention, and control of communicable diseases and was removed from the list of dangerous communicable diseases (Department of Disease Control, 2022). The emergence of the new coronavirus disease 2019 (COVID-19) has affected the lives of people around the world. Therefore, there has been a search for techniques and methods to live in a society of change, which has affected the crisis of values, attitudes, and behaviors in life, and to develop people to be complete, have good values, have skills for the 21st century, and have good health (National Economic and Social Development Board, Office of the Prime Minister, 2016).This has led to the emergence of an economic and social phenomenon in the modern world called the VUCA World, which means a world of rapid change.

VUCA is an abbreviation for Volatility, Uncertainty, Complexity, and Ambiguity (Giles, 2018). This rapid and drastic change can be collectively called the emergence of Disruption, that is, what we used to understand, what used to be, and what we are familiar will change rapidly into something more complex and unpredictable. Many businesses and jobs will disappear, and new ones will emerge. There will be unemployment, retraining and learning of new skills, and new social arrangements in a volatile world. VUCA World is considered "The New Normal" or a new normal of the world where people in society need to find techniques, methods or tools to live with VUCA World in order to keep up with or lead the changes that occur and access new opportunities that come by creating readiness to cope with volatility, uncertainty, complexity and ambiguity (Namprom, 2019). The changes in the era of social transformation of Thai society in the context of the world with volatility, uncertainty, complexity, ambiguity or VUCA World have resulted in changes in the environment of Thai society. Organizational management must therefore create a leadership that is up-to-date, can adapt to changing environments and make decisions with confidence, can communicate and create understanding of the organization's goals into a single image, have confidence in themselves and others who can support growth mindset, so that colleagues understand the organization's goals and

directions and are ready to change together (Saruta Chaisuwan, Sanesitlarom, and Wirachak Saengwong, 2020).

However, during the outbreak, nurses are a profession that must face patients all the time and 24 hours a day, from the first admission to the quarantine center, sub-district health promotion hospital, community hospital, central hospital and university hospital. Due to the major outbreak of a new disease and the large number of patients that need to be cared for everywhere, nurses, who are already in short supply, must face an increased shortage. And with the policies and duties of the nursing organization or the head nurse, they must order and/or ask the nurses in each hospital to stay on duty continuously for several months before they can go home to see their families. Some of them were infected with the disease and had to be hospitalized for continuous treatment and were shunned by society. Some of them were infected and died, causing great sadness and loss to their families and friends. This is an invaluable loss because producing each nurse requires a lot of resources, and nurses can help care for patients and their families to have a better quality of life. If there is no better quality of life management for nurses, the country will lose even more nurses if another epidemic occurs (Jintana Ajsanthia, Sunan Lee-Issarapong, and Patchanee Thamwattananukul, 2022, page 2).

The researcher is a lecturer in the Faculty of Nursing, Rajabhat Rajanagarindra University, which is the only local university in Chachoengsao Province. Recognizing this importance, the researcher proposed a research project on nursing administration models and management of nurses' working life quality after the outbreak of the coronavirus disease (COVID-19) in Thailand. The benefits of this research will help create a nursing management model and guidelines for developing the quality of working life of nurses in Thailand in the future that responds to rapid changes, is adaptable, flexible, but has quality appropriate for the world in the 21st century.

Research Objectives

　　　　1. To explore the nursing management situation during the COVID-19 outbreak and the guidelines for nursing management after the COVID-19 outbreak in Thailand.

　　　　2. To identify the problems and management guidelines for quality of working life of nurses after the outbreak of coronavirus disease (COVID-19) in Thailand.

　　　　3. To create a model of nursing management and quality of working life management of nurses after the outbreak of coronavirus disease (COVID-19) in Thailand.

4. To evaluate the model of nursing management and quality of working life management of nurses after the outbreak of coronavirus disease (COVID-19) in Thailand.

Research Conceptual Framework

The researcher has applied VUCA, according to the concept of Puckett (2020), for creating the conceptual framework of the model for nursing administration and management of working life quality of nurses after COVID-19 outbreak in Thailand. The research conceptual framework consists of 3 main pillars:1) Transparency, 2) Empowerment of subordinates, 3) Empowerment. The Quality of Working Life, according to the concept of Gonzalez-Cruz et al. (2016), has 7 dimensions: 1) Organizational support, 2) Work safety, 3) Work participation, 4) Work satisfaction, 5) Well-being gained from work, 6) Self-development, and 7) Free time management, as shown in Figure 1 below.
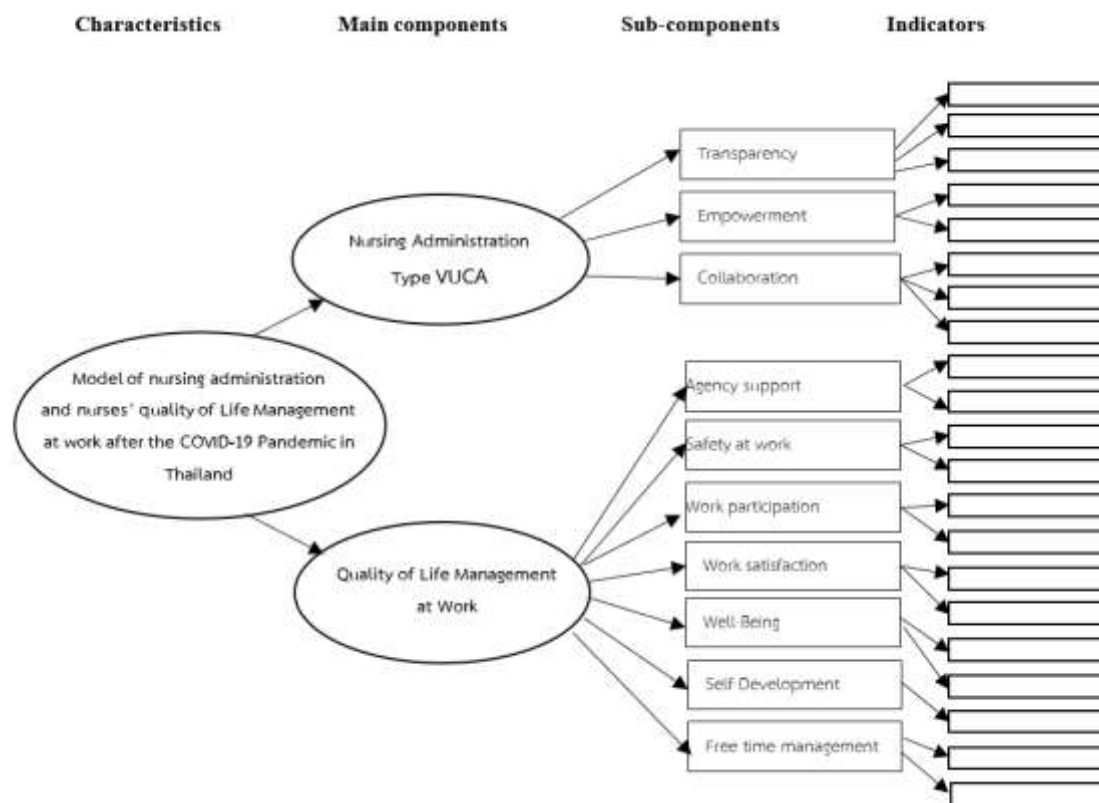
Figure 1 Research Conceptual Framework

Research Methodology

This study has the following research steps:

Step 1 Qualitative data collection: Qualitative data were collected by interviewing the nursing management situation during the COVID-19 outbreak, guidelines for nursing management after the COVID-1 9 outbreak, problems and guidelines for managing the quality of working life of nurses after the COVID-1 9 outbreak, and quantitative data collection from a questionnaire on nursing management, VUCA model, and management of the quality of working life of nurses after the COVID-19 outbreak.

Step 2 Qualitative data analysis: The researcher analyzed the data obtained from step 1 according to the content analysis principles to analyze the main issues and sub-issues of nursing management during the COVID-19 outbreak, guidelines for nursing management after the COVID-19 outbreak, problems and guidelines for managing the quality of working life of nurses after the COVID-1 9 outbreak for the general characteristics of the key informants with descriptive statistics, frequencies, percentages and quantitative data analysis using linear structural equation models with the Lisrel program. The findings were used to create a draft model.

Step 3 Summarizing, evaluating, and confirming the model through focus group discussions: The researcher summarized the results of data analysis, found the components of the model from the findings according to the theoretical concept, and drafted the nursing administration model and the management of the quality of life of nurses after the COVID-19 outbreak. The draft was presented to nine experts, including the President of the Nursing Council or representatives, hospital executives, and nurses at provincial hospitals, regional hospitals, community hospitals, sub-district health promoting hospitals, and academic representatives, to consider the model and confirm the appropriateness of the model. Then, the model would be presented by publishing in an international journal.

Population and Sample

Qualitative Research

Population: They included nursing leaders and nurses from provincial hospitals in the Eastern Economic Corridor, totaling 5,212 people (Chonburi 2,395 people, Rayong 1,414 people, and Chachoengsao 1,406 people).

Sample: Key informants were 30 nursing leaders and nurses who worked during the COVID-19 outbreak and continued working after the outbreak at provincial hospitals in the Eastern Economic Corridor, based on the sampling method of a theory-building study because a model would be created from the data found (Grounded Theory) (Creswell, 2007, 2013 cited in Chamnian Chuangtrakul, 2018). Purposive sampling was used from those who met the population criteria, were able to communicate information, and gave their consent to provide information.

The experts in the focus group discussions included the Nursing Council President or representative, hospital executives, and nurses from provincial hospitals, regional hospitals, community hospitals, sub-district health promoting hospitals, and representatives of academics who were involved during the COVID-19 outbreak and continued working after the outbreak. There were 9 people in total. The selection of key informants was done by purposive sampling, which had the most qualifications that matched the research objectives, and the snowball technique.

Quantitative Research

Population: They were nursing leaders and nurses from provincial hospitals in the Eastern Economic Corridor, totaling 5,212 people (Chonburi 2,395 people, Rayong 1,414 people, and Chachoengsao 1,406 people).

Sample: They were nursing leaders and nurses who worked during the COVID-19 outbreak and continued working after the outbreak at provincial hospitals in the Eastern Economic Corridor, totaling 372 people. The researcher determined the sample size using the sample calculation formula according to the Krejci and Morgan table (Krejcie & Morgan, 1970, p.608). The confidence level was set at 95%, resulting in a sample size of 372 people, calculated in proportion to the 3 provinces as follows: Chonburi 172 people, Rayong 100 people, and Chachoengsao 100 people. Once the sample size was obtained, the researcher used the stratified random sampling and then used the simple random sampling method until the sample size reached the specified number.

Inclusion Criteria for Volunteer Participation in the Project

Qualitative research was conducted among nursing leaders and nurses who were working during the COVID-19 outbreak and continued working after the outbreak at provincial hospitals in the Eastern Economic Corridor. While the researcher collected data, gender was not limited, participants were willing to cooperate in providing information, and were able to communicate with the researcher via Thai language.

Quantitative research was conducted among nursing leaders and nurses who worked during the COVID-19 outbreak and continued working after the outbreak at provincial hospitals in the Eastern Economic Corridor. The participants were not limited by gender while collecting data. They were willing to cooperate in providing information and were able to communicate with the researcher using Thai language.

Exclusion Criteria: Leaders with insufficient information, not engaged during the COVID-19 outbreak. They were likely to move out or be absent in the research process

Tools used for data collection

Tools used to collect qualitative data:

Tools included in-depth interviews and field notes. The interview data were transcribed verbatim; the interview questions were created by the researcher based on the concept of Patton (1 9 9 0). The content was about the nursing administration conditions during the COVID-1 9 outbreak and the management of nurses' working life quality after the COVID-1 9 outbreak. And the researcher as interviewer was an important tool for collecting data. Therefore, the researcher was prepared before going to the actual field by preparing knowledge of qualitative research methodology, knowledge content by herself from reading documents, textbooks and related research to cover the issues to be interviewed.

Qualitative tool quality assessment

The quality of the instrument in terms of content validity was examined by 3 experts. The interview form was tested with 3 non-sample participants before being revised and used in practice as a guideline for adjusting the questions to be understandable.

The equipment used for data collection included: 1) a camera. The researcher selected photos related to the topic under study and obtained permission from all parties involved every time; 2) a voice recorder; and 3) a notebook.

Tools used to collect quantitative data:

The tools included questionnaires on nursing management and management of working life quality of nurses after the COVID-1 9 outbreak. The quality of the instrument was tested by giving the questionnaire to 5 experts to consider the content validity by finding the index of consistency between the questions and the research objectives of each item (index of items objective Congruence: IOC). Then, the researcher selected questions with an IOC value of 0.5 or higher, revised the questionnaire as recommended by experts before trying it out with a group with similar characteristics in Hua Sai Subdistrict, Chachoengsao Province, 30 people. The questionnaire was tested for reliability using the alpha coefficient method according to Cronbach's method (Cronbach, 1990), with the reliability value of the entire questionnaire = 0.91, meaning that the questionnaire was reliable. The tested questionnaire was made into a complete version to collect further data.

Data Collection

The method of collecting qualitative data by in-depth interviews was as follows:

Preparation stage: The researcher prepared in-depth interview guidelines before proceeding with data collection. The researcher asked for permission from the sample group to conduct the study, explained the research objectives and procedures, and the duration of the research. All sample participants signed a consent form to participate in the research and were informed that they could refuse to participate and withdraw from the research without any impact on the sample group. In addition, the information obtained from this research would be kept confidential and would not be disclosed to cause damage to the sample group. The researcher would use the research results for academic purposes only.

Procedure: The researcher requested to conduct the interview at a location convenient for the key informant. The key informant could select a convenient day and time for the researcher to meet and ask for information about Part 1. After the informant trusted and was ready to provide in-depth information, the researcher began the in-depth interview in Part 2. During the interview, the questions would be adjusted for clarity according to the context and facial expressions and emotions of the informant. In-depth interview skills would be used, considering the rights and dignity of the informant. There would be a 2-minute break for each question to prevent stress. After the interview was complete, researcher expressed gratitude to the respondent.

Observation and recording: The researcher used observation of the sample group's behavior and expression of opinions during the interview. After the observation, the researcher recorded the data as well.

Methods of collecting quantitative data:

Using a researcher-created questionnaire based on the conceptual framework of VUCA nursing administration and management of working life quality of nurses after the COVID-1 9 outbreak, a total of 372 people. The questionnaire was divided into 3 parts:

Part 1 General information of the respondents included gender, age, and marital status.

Part 2 VUCA Nursing Administration Opinion Questionnaire. The questionnaire was a 5-level rating scale.

Part 3 A questionnaire on opinions about the management of working life quality of nurses. The questionnaire was a 5-level rating scale.

Data Analysis

Qualitative data analysis:

By coding the data and using the method of translating and interpreting the data, the researcher created concepts by comparing with theories and research works that had already been researched according to the qualitative study guidelines (Content analysis).Data analysis consisted of 3 steps according to the guidelines of Strauss and Corbin (1998) as follows: 1) Open coding was the process of defining codes or creating indexes (Supang Chantawanich, 2010) from the data obtained from the interview. It was an analysis to find consistency reflecting the types or groups of data obtained from the interview. The researcher considered opening the code line by line. If there was any text indicating the nursing administration model and the management of the quality of life in working life of nurses after the COVID-19 outbreak according to the research objectives, it would be coded. 2) Axial coding was the process of defining codes by processing the types of data and the characteristics (Properties) of the data types together. It was creating a relationship between the data of each code in the first step. 3) Select coding was the process of selecting events. That is the key to leading to the conclusion of the findings of decoding from the data obtained from the interview. It was the process of taking the types and relationships or cores of the data to summarize the characteristics of the relationships or phenomena found about nursing management and the management of the quality of life in working life of nurses after the COVID-19 outbreak.

Data reliability testing (Rigor criteria) by researchers using the method of testing the same data from multiple sources (Data Triangulation) such as annual reports, newspapers, analysis of related documents, etc. and recording reflections (Reflexive note) after data collection to record ideas, beliefs based on data and connections found in data collection to be used in data analysis completely and correctly.

Quantitative data analysis: The steps were as follows: 1) The returned questionnaires were given scores (codes) in each item and recorded the results in a computer using a ready-made program. 2) Analyzed the data according to the research objectives by analyzing the linear structural equation model using the Lisrel program.

Statistics used in data analysis

Qualitative research: Content analysis was applied.

Quantitative research: 1) Checked and analyzed preliminary data 2) Checked the structural validity of the measurement model 3) Analyzed the confirmatory factors by analyzing the linear structural equation model using the Lisrel program.

Research Results

Results of the analysis of nursing management conditions during the outbreak of coronavirus disease (COVID-**19**), problems and guidelines for nursing administration and management of the quality of

working life of nurses after the outbreak of coronavirus disease (COVID-**1 9)** in Thailand: The research results were summarized that executives understood their personnel, emphasized that the related personnel work to their full potential, and strictly comply with measures to prevent the spread of COVID-1 9 for their own safety and that of others. The problems found were that there were not enough personnel to perform the work, causing each person to work very hard. The roles and responsibilities overlapped, making it difficult to manage one's work and life. Therefore, factors supporting personnel to be able to manage their working quality of life after the COVID-19 outbreak included all parties working together as a team, participating in planning and solving the emerging problems, having good friends, helping each other, resulting in stability and safety in work, dividing work time and having time for family appropriately and in balance, resulting in job satisfaction. The working style of nurses after the COVID-1 9 outbreak, when the COVID-1 9 policy was set as an endemic disease, should adjust the working system to be more relaxed, safety control measures, allocate working time and spend more time with family, boost morale for staff, cooperation, participation, teamwork, instilling a love for the profession, job satisfaction, appropriate time allocation, work and personal life balance. These things also affected the quality of life of nurses. Therefore, the nursing management model and the management of nurses' working life quality are related to each other because the administrators understand the differences in personnel. The personnel who work have good relationships with each other, join forces and do not give up on their work. They have a good working system and clear steps; work is not complicated; and each department has a clear structure. The budget allocation is transparent and can be verified. This will make the personnel work happily, which will also affect their quality of life both at work and in their families.

Results of the analysis of model for nursing administration and management of working life quality of nurses after the outbreak of coronavirus disease (COVID-**1 9)** in Thailand: It was found that the results of the analysis and synthesis of concepts, theories, documents, articles, abstracts, and research works related to nursing administration and management of working life quality in both national and international articles resulted in 2 main components, 1 0 sub-components, and 6 6 indicators. They were examined for content validity, accuracy and coverage of theoretical content, and reliability from experts, as follows:

1. Nursing Administration as VUCA	There are 23 indicators in total.
1.1 Transparency	10 indicators
1.2 Empowerment of subordinates	6 indicators
1.3 Collaboration	7 indicators
2. Managing Quality of Work Life	total indicators 43 indicators
2.1 Agency support	6 indicators
2.2 Safety at work	7 indicators
2.3 Participation in work	5 indicators
2.4 Work satisfaction	7 indicators
2.5 Well-being from work	5 indicators
2.6 Self-development	8 indicators
2.7 Free time management	5 indicators

The results of the analysis of model of nursing management and management of nurses' working life quality after the outbreak of coronavirus disease (COVID-19) in Thailand are the results of quantitative analysis to support the main components, sub-components, and indicators of nursing management and management of nurses' working life quality after the outbreak of coronavirus

disease (COVID-1 9) in Thailand as follows: 1) The results of the analysis of general data, the respondents were generally female, aged 20-30 years, and married.

2) The results of the analysis of the main components of nursing administration and management of the quality of working life of nurses, overall, had a high average value when considering the main components of nursing administration and management of the quality of working life of nurses. The two main components, ranked from highest to lowest values, were VUCA nursing administration and management of the quality of working life.

3) The results of the analysis of the sub-components of nursing administration and management of the quality of working life of nurses showed an overall average at a high level. When considering the sub-components of nursing administration and management of the quality of working life of nurses, all 10 sub-components, ranked from highest to lowest values, were work participation, transparency, self-development, collaboration, empowerment of subordinates, job satisfaction, work safety, support from the agency, free time management, and well-being gained from work, respectively.

Results of the confirmatory factor analysis of each component of the nursing management model and the management of working life quality of nurses after the outbreak of coronavirus disease (COVID-19) in Thailand:

1) The results of analysis of the confirmatory components of each model of nursing administration principles and management of nurses' working life quality found that the model of nursing administration principles and management of working life quality in nursing administration in VUCA type and management of working life quality had statistical values that did not pass the specified criteria. Therefore, it was necessary to adjust the model to be more consistent. The researcher adjusted the model according to the suggested values from the model adjustment index. (Model Modification Indices: MI). The results of the analysis of the adjusted model showed an insignificant chi-square statistic value of 0.07426 (p-value >.05), a relative chi-square value of 1.59, a Goodness of Fit Index (GFI) value of 0.99, and a Root Mean Square Error of Approximation (RMSEA) value of 0.040, all of which passed the specified criteria, indicating that the measurement model of all sub-component latent variables was appropriate as the observed variables of each main component. When examining the consistency of the measurement model, the VUCA model of nursing administration and quality of work life management components and quality of work life management were consistent with the empirical data. 2) Results of the confirmatory factor analysis of the nursing administration model and the management of working life quality of nurses after the outbreak of coronavirus disease (COVID-19) in Thailand: (NuAQLM) It was found that the confirmatory component model of nursing administration and management of working life quality of nurses after the outbreak of coronavirus disease (COVID-19) in Thailand (NuAQLM) with empirical data had statistical values that did not pass the specified criteria. Therefore, it was necessary to adjust the model to be more consistent. The researcher adjusted the model according to the suggested values from the model adjustment index. (Model Modification Indices: MI). The results of the analysis of the adjusted model showed an insignificant chi-square statistic value of 0.08746 (p-value $>.05$), a relative chi-square value of 1.84, a Goodness of Fit Index (GFI) value of 0.99, and a Root Mean Square Error of Approximation (RMSEA) value of 0.047, which passed the specified criteria and were therefore consistent with the empirical data.

In conclusion, it was found that the measurement model of all sub-component latent variables was suitable as the observed variables of each main component, and all main components were suitable as the observed variables of the overall characteristics of nursing administration and management of working life quality of nurses after the outbreak of coronavirus disease (COVID-1 9) in Thailand. And when checking the consistency of the measurement model, the measurement model was consistent with the empirical data, thus confirming the development of the nursing administration model and the management of the quality of working life of nurses after the outbreak of the coronavirus disease (COVID-19) in Thailand by the linear structural component analysis method.

3. Presentation and evaluation of nursing administration model and quality of work life management of nurses after the outbreak of coronavirus disease (COVID-19) in Thailand: The study results of model of the nursing administration and management of the quality of working life of nurses after the outbreak of the coronavirus disease (COVID-19) in Thailand (SWAP FECT MODEL) were found that everyone agreed with this model, consisting of 2 main components, 1 0 sub-components, 6 6 indicators obtained from studying, researching, synthesizing, and analyzing related research documents. The indicators had been tested for content quality and reliability by experts, making the main components, sub-components, and indicators more reliable. The main elements of nursing administration in the VUCA model consist of 3 sub-elements: transparency, empowerment of subordinates, and collaboration. The main elements of quality of work life management consist of 7 sub-elements: agency support, work safety, work participation, work satisfaction, well-being, self-development, and free time management. There are 3 steps of good management: 1 . Inputs, 2 . Processes, and 3 . Outputs. Therefore, we would like to confirm that the presented model has steps that can be truly implemented, as shown in the picture.
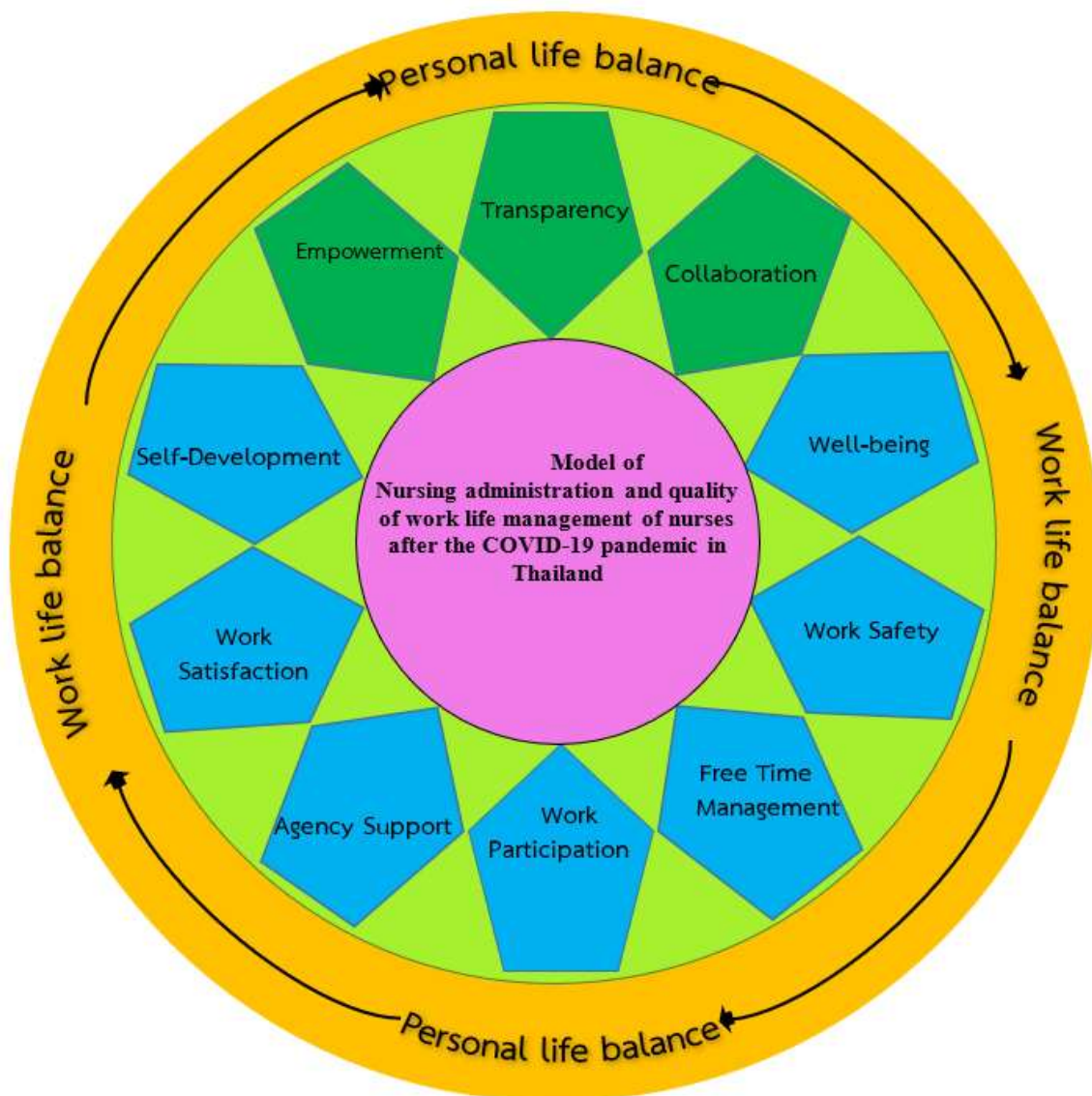

Figure 1. Model of Nursing Administration and Quality of Work Life Management of Nurses after the COVID-19 Outbreak in Thailand (SWAP FECT MODEL)

From Figure 1 , the nursing administration model and management of the quality of working life of

nurses after the outbreak of the coronavirus disease (COVID-19) in Thailand or SWAP FECT MODEL, which means "perfect exchange" referring to a balance between work life and personal life that is perfect, abbreviated from the following words:

S_1 Stands for Work **Safety** which means a safe working environment for both the nurses themselves who are healthily prepared and the environment is convenient, clean and organized.

S_2 Stands for Work **Satisfaction** which means a good feeling towards the assigned work and towards the management system of the organization.

S_3 Stands for **Self**-Development which means developing one's own potential to be able to work appropriately.

W Stands for **Well**-being which means good housing conditions and appropriate income.

A Stands for **Agency** Support which means that the agency has a system to support wages, compensation and benefits that are appropriate and meet the needs.

P Stands for Work **Participation** which means assigning work to each person to participate in working together to their full potential.

F Stands for **Free** Time Management which means allocating working days and free time appropriately each day, week, month and year.

E Stands for **Empowerment** which means empowering subordinates to work more effectively**.**

C Stands for **Collaboration** which means good cooperation in working among each professional field and other related agencies.

T Stands for **Transparency** which means being honest and sincere with each other in our work, understanding each other and not gossiping or criticizing others.

Discussions

The results of the confirmatory factor analysis of the indicators of the VUCA nursing management model were found that when considering the index values of consistency, all values met the criteria. This might be because the results of the examination of the indicators in the main components of the VUCA nursing management model, the sub-components with standardized component weights, and all the observable indicators were statistically significant. The indicator with the highest standard component weight is the subcomponent of empowerment of subordinates, followed by the subcomponent of transparency and collaboration. This is because the executives realize that nurses play an important role in their work. Therefore, the management is systematic and has clear steps. They are experts with knowledge, understanding, and the ability to provide good service, screen risk groups, provide advice, provide consultation, and provide self-care advice. They must also prevent and control the spread of infection, monitor and follow up on complications in all patients equally, and have colleagues who understand their roles, work willingly and fully in every situation, and promote knowledge. This will help create good results for patients, enabling them to control and prevent COVID-19 infection, which will lead to successful work. This is consistent with Warantorn Photharin and colleagues (2022) who stated that professional nurses are important personnel in screening, monitoring respiratory distress and promoting adequate oxygenation, preventing and controlling the spread of infection, monitoring and tracking complications, managing psychosocial crises, resuscitation, managing infected persons, and promoting knowledge. This helps to produce good outcomes for patients, control and prevent COVID-19 infection, and nurses are safe from work while caring for COVID-19 infected persons. It also was consistent with Chen et al. (2020) stating that nurses are healthcare professionals with diverse and important roles during the COVID-19 pandemic, such as educating the public and screening at-risk groups, monitoring nosocomial infections by strictly following standards, preparing for patient care, planning patient care, and taking

care of facility safety.

The results of the confirmatory factor analysis of indicators of the work quality life management model were found that when considering the index values of consistency, all values were in accordance with the criteria. This might be because the result of the examination of the indicators in the main components of work quality life management, the subcomponents with standardized component weights, and all the observable indicators that were statistically significant. The indicator with the highest standardized component weight was the subcomponent of well-being, followed by the subcomponents of free time management, work satisfaction, self-development, and work safety. And the indicators with the lowest standard component weights are the subcomponents of agency support and participation in work, respectively. This is because nurses are satisfied with their work, are happy with their work, know how to allocate time appropriately for both work and family, develop themselves for career advancement, have good relationships with colleagues, and make work more efficient. It is consistent with Punyanuch Phimjaisai, Manthana Thewapokinkun and Atchara Srisupornkarakun (2022) who stated that professional nurses give importance to the balance between work and personal life, regarding the division of time for work and life well, contributing to creating good work discipline and having an efficient work system, having good physical health and mental health, feeling satisfied with work, and clearly and appropriately defining roles and responsibilities in work. These includes the allocation of adequate resources to perform assigned duties, holiday policies, vacations, flexible working hours, overtime and shift work strategies, which contribute to worker satisfaction and good relationships with supervisors and coworkers.

The model of nursing administration and nursing quality of life management after the COVID-19 outbreak in Thailand was found to be nursing management guidelines that take into account the management of quality of life in a balanced way between work life and personal life of each nurse, consisting of 1) well-being, 2) work safety, 3) empowerment of subordinates, 4) free time management, 5) transparency, 6) work participation, 7) support from the organization, 8) job satisfaction, 9) self-development, and 10) collaboration. They are very appropriate for use in nursing management in the post-COVID-19 era. Because it emphasizes on management that has all aspects of working in a hospital and considers the balance of work life and personal life in every aspect. Because the qualitative research results were found that nurses working during the COVID-19 outbreak do not have enough free time for family or personal life, lack of good rest, work too much, are physically weak, and eventually get infected with the disease leading to death, causing families, colleagues in the profession, and the profession to lose a valuable person that cannot be calculated in terms of money. Managing all 10 elements with balance is very important and nursing leaders or administrators should always take this into account when applying this management principle. It will make nurses have a better quality of life, be happier at work, and result in higher quality of public health care. This is consistent with the survey study of HRD Connect (2024) revealing that key principles of what leaders or administrators should consider in modern management among 15,000 managers in 30 countries worldwide. It was found that it should consist of the following key principles: There must be a hybrid working model, in which the key to this principle is the balance between personal and work life. Therefore, the model of nursing administration and the management of the quality of working life of nurses after the outbreak of the coronavirus disease (COVID-19) in Thailand is very appropriate for application in this changing world. They are, for example, when assigning nurses to develop themselves by going for training outside the hospital at a certain time, leaders must ask the nurses' opinions whether they agree that planning for self-development in this way is consistent with their needs or not, does not match their desired career advancement, and does it affect their personal or family life. In order to plan for self-development in a way that is appropriate for each nurse and balances their work and personal life, they will be able to work happily and sustainably. It is in line with Dropsta (2021), one of the major challenges facing healthcare is ensuring the well-being of nurses. Nurses are at the heart of healthcare, and their work is essential in keeping patients safe, healthy, and comfortable. However, nurses mist struggle to achieve work-life

balance, resulting in absenteeism, reduced job satisfaction, high levels of anxiety and burnout.

Suggestions

Suggestions from research

1. The results of the study found that VUCA nursing management in the aspect of collaboration had the lowest standard component weight. Therefore, nursing leaders should promote personnel to participate in all aspects of work, included, planning the meetings, implementation, monitoring and evaluation, and problem solving and various obstacles, which includes the aspect of empowerment of subordinates which had the highest standard component weight as a promoter and supporter of successful work.

2 . The study results found that the management of working life quality in the aspect of self-development had the lowest standard component weight. Therefore, the Nursing Council or nursing leaders should promote and support nurses to receive training to develop their potential for continuous work and reduce resignation, in addition to the current welfare, such as unlimited time for research in regular work, allowing study leave at any time desired, allowing everyone to take leave for training and study tours both domestically and internationally, allowing unlimited career growth examinations with experience to open opportunities for good and capable people to manage, etc.

3 . The Nursing Council should apply this model to relevant agencies to use as information in determining policies that promote good nursing management leading to effective management of nurses' working life after the COVID-19 outbreak, such as managing life insurance for nurses in the entire profession by the Nursing Council or overall to promote the quality of life of nurses and their families when unexpected accidents result in loss of life.

4. From the study, it was found that nurses who have good quality of life must be able to balance all tasks well. Therefore, nursing leaders should set policies for all nurses to give importance to balancing all tasks in life well, both work and personal life.

Suggestions for future research

1. It should have mixed methods research to investigate factors associated with improving working life quality in nurses after the COVID-19 outbreak.

2. It should also have qualitative studies such as in-depth interviews and participant observation being conducted to obtain in-depth details, especially among village health volunteers and other personnel other than nurses, as a guideline for creating a model for use in the management of other agencies to be more efficient.

3. It should have a comparative study in the implementation of the model of nursing administration and the management of working life quality of nurses after the outbreak of the coronavirus disease (COVID-19) in Thailand (SWAP FECT MODEL) for trial use in different levels of hospitals.

Acknowledgment

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