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COMPETENCE STANDARDS IN INDONESIAN NURSING, ADAPTED TO THE INDUSTRIAL REVOLUTION 4.0

ESTÁNDARES DE COMPETENCIAS EN LA ENFERMERÍA INDONESIA, ADAPTADAS A LA REVOLUCIÓN INDUSTRIAL 4.0





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RESUMEN
El propósito de la investigación es analizar los estándares de competencias que debe tener el personal de enfermería en indonesia en función de la revolución industrial 4.0. El método aplicado es el modelo de evaluación CIPPO. Los resultados mostraron que existe un vínculo entre los objetivos de establecer e implementar SKPI con la satisfacción de las partes interesadas.
Palabras clave: Evaluación, SKPI, Renovables, Normas de competencia

ABSTRACT
The purpose of the research is to analyze the nursing competency standards of Indonesia based on the industrial revolution, the competency standards that nursing personnel in Indonesia should have based on the industrial revolution 4.0. The method of this applied research is the CIPPO evaluation model. The results showed that there is a link between the goals of establishing and implementing SKPI with stakeholder satisfaction.
Keywords: Evaluation, SKPI, Renewable, Competence standards.

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INTRODUCTION

The globalization of the industrial revolution 4.0 affects every side of human life, including aspects of health care and nursing that will change work patterns, work procedure standards and labor competency standards. Nursing staff who do not prepare to take on the changes of the industrial revolution 4.0 will be out of date with respect to their peers in the area (Leanne, Cowin, Cecily Hengstberger-Sims, Sandy Eagar, Linda Gregory, Sharon Andrew & John Rolley, 2018; Rakhmat 1997; Riadi, 2016; Riant, 2017).

Foreign nurses who have the ability to cope with advances in science and technology, have and will continue to work in Indonesia, are the country's nurses ready to deal with it so that staff can still host their own countries in nursing practice for the public?. Ideally, each Indonesian nurse has the skills adapted to the changes resulting from the Industrial Revolution 4.0.

The answer to the challenge above is to renew Indonesian Nurse Competency Standards. What currently applies is the Indonesian Nurses Competency Standard, which was set in 2009, not yet accommodating nurses' competencies adapted to the digitalization era. In the future, it should be noted and anticipated so that Indonesian nurses can compete nationally and even internationally. Indonesian Nurse Competency Standards need to be rearranged, which is able to answer the challenges of digitalization in the Industrial Revolution 4.0.

LITERATURE REVIEW

The era of Industrial Revolution 4.0 represents a new challenge for the nation and state of Indonesia and even the world today. This also has an impact on nursing services. The changes that took place in the era of industrial revolution 4.0 had an effect on the character of work so that the required competencies also changed. Nursing human resources need to adapt and anticipate competencies towards new systems and equipment as well as digital technology-based work procedures (Samodra, 2016; Setiadi, Nugroho, 2017; Simamora, 2018; Stufflebeam, Daniel dan Chris, Coryn, 2014; Stufflebeam, Daniel L. dan Guili Zhang, 2017).
The globalization of 4.0 industrial revolution in nursing is a special phenomenon that continues to move in society. The presence of information and communication technology accelerates the globalization process and work processes in nursing. The fact that globalization indeed touches all important aspects of human life. The globalization of the industrial revolution 4.0 creates various challenges and problems faced, answered and resolved in an effort to utilize globalization for the benefit of a better life (Hye-Young and Ji-Soo, 2017).

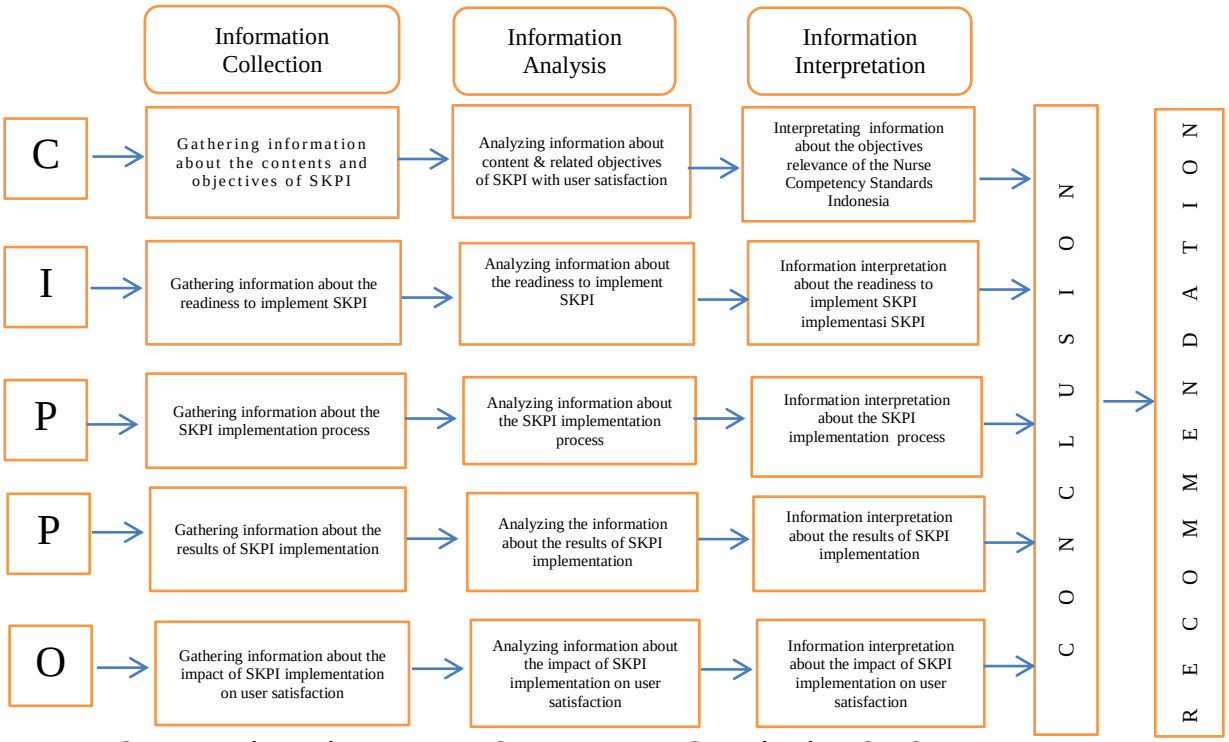
MATERIALS AND METHODS

The process facilitates standard evaluation, it is necessary to look at the indicators used:

1. Context evaluation, evaluation and analysis processes of the contents of the Indonesian Nurse Competency Standards with the relevance of objectives to stakeholder satisfaction.
2. Inputs evaluation, resources analysis including human resources, budget, facilities and infrastructure used to describe the effectiveness of the use of inputs as the key to the successful implementation of the Indonesian Nurse Competency Standards.
3. Process evaluation, to see how the implementation and evaluation of the Indonesian Nurse Competency Standards are implemented.
4. Product evaluation, to measure the successful of the aim achievement .
5. Impact evaluation to analyze implication of the Indonesian Nurse Competency Standards.

Research design is described as follows:

Figure 1. Evaluation design CIPPO of the Indonesian Nurse Competency Standards



Note: SKPI: Indonesian Nurse Competency Standards, C: Context, I: Input, P: Process, P: Product, O: Outcome
Source: By Authors (2019)

RESULTS

RESULTS OF CONTEXT EVALUATION

Table 1. Results of Context Evaluation of the Indonesian Nurse Competency Standards

The aspects being evaluated	Evaluation criteria	Findings of evaluation	Rating			Decision
			R	M	T	
Analyzing the context of Indonesian Nurse Competency Standards	There are good contents of Indonesian Nurses Competency Standards and there is a link between the objectives of Indonesian Nurses Competency Standards in order to achieve stakeholder satisfaction	There are Indonesian Nurses competency standards which are determined based on Decree of Chairman of the Indonesian National Nurse Association No. 024/PP.PPNI/SK/K/XII/2009. The established Indonesian Nurse Competency Standards has compilation objectives that have relevance to achieving stakeholder satisfaction			√	All evaluation criteria are met

Source: By Authors (2019)

The table above illustrates the results of evaluating high ratinging contexts because the contents of the Indonesian Nurse Competency Standards are complete and detailed in each competency according to each nurse category.

RESULTS OF INPUT EVALUATION

Table 2. Result of Input Evaluation of the Indonesian Nurse Competency Standards

The Aspects Being Evaluated	Evaluation Criteria	Findings of Evaluation	Rating			Decision
			R	M	T	
Human resources used in the	The implementation of the Indonesian	Human resources from DPK PPNI have not yet participated in the making and		√		Evaluation criteria are partially fulfilled:>
implementation of the Indonesian Nurse Competency Standards	Nurse Competency Standards is supported by PPNI and stakeholders or users of the Indonesian Nurse Competency Standards	monitoring.of evaluations of Nurse Competency Standards in health care institutions. But the budget and facilities are well available				50% of the number of criteria items
Budget resources used in the implementation of Indonesian Nurse Competency Standards	The implementation of the Indonesian Nurse Competency Standards is supported by an adequate budget	Budget resources are sufficient			√	All evaluation criteria are met
Facility resources used in the implementation of the Indonesian Nurse Competency Standards	The implementation of the Indonesian Nurse Competency Standards is supported by adequate facilities	Facility resources are sufficient			√	All evaluation criteria are met
Organizational structure involved in the implementa-	PPNI involves the Provincial PPNI Management	PPNI has involved the Provincial PPNI Management to the Commissariat and		√		Evaluation criteria are partially fulfilled:>

Source: By Authors (2019)

Table 3. Result of Input Evaluation of the Indonesian Nurse Competency Standards

The Aspects Being Evaluated	Evaluation Criteria	Findings of Evaluation	Rating			Decision
			R	M	T	
Evaluation of the Indonesian Nurse Competency Standards	To the Commissariat and Association of Nursing Education (AIPNI & AIPViKI)	Association of Nursing Education (AIPNI & AIPViKI) in establishing Indonesian Nurses Competency Standards but have not been directly involved in making and monitoring evaluations of the implementation of Nurses' Competency Standards in health care institutions where nurses work				50% of the number of criteria items
Planning for determining the organizational structure involved in the implementation of the Indonesian Nurse Competency Standards	Every party involved that has a plan for Indonesian Nurse Competency Standards	Each party involved that has a plan for the Nurse Competency Standards for health service institutions based on the Indonesian Nurses Competency Standards but have not been involved by DPK PPNI		√		Evaluation criteria are partially fulfilled:> 50% of the number of criteria items
Determination procedure of the Indonesian Nurse Competency Standards	The Indonesian Nurse Competency Standards is made pursuant to Law, Government Regulation	The Indonesian Nurse Competency Standards in health service institutions have been referred to the Indonesian Nurse Competency Standards that also have been made pursuant to Law,		√		Evaluation criteria are partially fulfilled:> 50% of the number of criteria items.

Source: By Authors (2019)

Table 4. Result of Input Evaluation of the Indonesian Nurse Competency Standards

The Aspects Being Evaluated	Evaluation Criteria	Findings of Evaluation	Rating			Decision
			R	M	T	
	Determination procedure of the Indonesian Nurse Competency Standards and the prevailing regulations	Government Regulation and the prevailing regulations but have not yet involved by DPK PPNI in those health service institutions.				
Design of the Nurse Competency Standards	Description and specifications of the Indonesian Nurse Competency Standards	Descriptions and specifications of Nurse Competency Standards in health care institutions are clear and have referred to the Indonesian Nurse Competency Standards			√	All evaluation criteria are met
Establishment stage of the Indonesian Nurse Competency Standards	The implementation of the Indonesian Nurses Competency Standards determination stage takes place in accordance with the established procedures	The implementation of the determination stages of the Nurse Competency Standards in health care institutions has taken place in accordance with the established procedures			√	All evaluation criteria are met
Establishment standard of the Indonesian Nurse Competency	Establishment standard of the Indonesian Nurse Competency	Establishment standard of the Indonesian Nurse Competency Standards in health			√	All evaluation criteria are met

Source: By Authors (2019)

Table 5. Result of Input Evaluation of the Indonesian Nurse Competency Standards

The Aspects Being Evaluated	Evaluation Criteria	Findings of Evaluation	Rating			Decision
			R	M	T	
Standards	Standards	Accordance with the determination standards for the Indonesian Nurse Competency Standards available				

Source: By Authors (2019)

The table above illustrates the results of input evaluation with moderate ratings on human resources that still need to involve the PPNI commissariat in monitoring the implementation evaluation of the Indonesian Nurse Competency Standards in user institutions where nurses apply their competencies. High-ratinging budget resources and facilities are available because they are sufficient t for determination and implementation of the Indonesian Nurse Competency Standards. The organizational structure, planning and implementation procedures for the Indonesian Nurse Competence Standards with moderate rating are available because they still need to involve the PPNI commissariat. The design, establishment stages and determination standards for the Indonesian Nurse Competency Standards are high because they are well available.

RESULT OF PROCESS EVALUATION

Table 6. Results of Process Evaluation of the Indonesian Nurse Competency Standards

The Aspects Being Evaluated	Evaluation Criteria	Findings of Evaluation	Rating			Decision
			R	M	T	
Implementation of stages of the Indonesian Nurse Competency Standards	Implementation of stages is in accordance with the established procedures	Implementation of stages of the Nurse Competency Standards is in institutions in accordance with established procedures			√	All evaluation criteria are met

Source: By Authors (2019)

RESULTS OF PRODUCT EVALUATION

Table 7. Results of Product Evaluation of the Indonesian Nurse Competency Standards

The Aspects Being Evaluated	Evaluation Criteria	Findings of Evaluation	Rating			Decision
			R	M	T	
Product of the Nurse Competency Standards in health service institutions and curriculum in nursing education institutions	Nurse Competency Standards are available in health service institutions based on the Indonesian Nurse Competency Standards and there is also a curriculum in each category of nursing education with a profile of graduates based on the Indonesian Nurses Competency Standards	Generally there has been available Nurse competency standards in nursing service institutions based on the Indonesian Nurse Competency Standards and also available curriculum in each category of nursing education with profiles of graduates based on the Indonesian Nurses Competency Standards			√	All evaluation criteria are met

Source: By Authors (2019)

The table above illustrates the results of product evaluation with high ratings. Nurse Competency Standards are available at health care institutions where nurses work. A curriculum is available on nursing education and training that has been guided by the Indonesian Nurse Competency Standards.

RESULTS OF OUTCOME EVALUATION

Table 8. Results of Outcome Evaluation of the Indonesian Nurse Competency Standards

The Aspects Being Evaluated	Evaluation Criteria	Findings of Evaluation	Rating			Decision Evaluation Criteria
			R	M	T	
Stakeholders' Satisfaction of on the services outcome of the Indonesian Nurse Competency Standards	Nurses have competencies that are successful in giving satisfaction to Stakeholders of the Indonesian Nurse Competency Standards	Health service leadership said that they were not satisfied with the quality of nursing services that had an impact on quality		√		Evaluation criteria are partially fulfilled:> 50% of the number of criteria items
Namely to improve the quality of nursing services in health care institutions where the nurses works	Namely successful in improving the quality of nursing services in health care institutions where the nurses works	In health services where the nurses works. When asked for satisfaction rates in the range 1-10, the participants submit score 5-6				

Source: By Authors (2019)

DISCUSSION

The Indonesian Nursing Competency Standard becomes a reference for every development in nursing services, education, training, determination of resource requirements and policy setting in this area of health.

Determination of the Indonesian Nurse Competency Standards has been mandated by the national consultation of PPNI professional organizations. National meetings hold the highest authority of the organization. However, for now it is necessary to accommodate technological developments, namely the era of the Industrial Revolution 4.0 where digitalization is being and will dominate the work system throughout the world. Therefore, it is necessary to renew an adapted Indonesian Nurses Competency Standards to the Industrial Revolution 4.0

The purpose of establishment and implementation of the Indonesian Nurse Competency Standards has been determined namely the first goal for educational institutions and training of nursing staff that will form a good curriculum so as to produce nursing staff who have good quality of the Indonesian Nurse Competency Standards. However, the curriculum in nursing education nationally has not been compiled in detail adapted to the Industrial Revolution 4.0. The curriculum and learning process in nursing education institutions need to change to accommodate the changing times of the Industrial Revolution 4.0 era of digitalization. The second objective of the Indonesian Nurse Competency Standards for health care institutions as users of nursing staff is a guide for establishing job descriptions, recruitment, performance evaluation and development of nursing staff to be implemented properly and standardized. It also needs to be renewed to be renewable and adapted to the Industrial Revolution 4.0. The third goal for nurse testing and certification institutions is as a guide to exam materials to be certified with good quality. For this, a renewable Indonesian Nurse Competency Standards are also needed with the mechanisms and competency test material material adapted to the Industrial Revolution 4.0

Nurse Competency Standards has clearly been related to the achievement of stakeholder satisfaction, especially the satisfaction of the community who will receive services from a competent nurse. The contents of the Indonesian Nurse Competency Standards in the future will be developed and adapted to the development of science and technology, especially the Industrial Revolution 4.0. We must carry out digitalization for the sake of accelerating the progress and effectiveness as well as the efficiency of the implementation of the Indonesian Nurse Competency Standards that have an impact on the stakeholders' satisfaction.

The Indonesian Nurse Competency Standards continuously and periodically need to be evaluated to be developed so that they are adapted to the development of science and technology and are able to answer global challenges. The Indonesian Nurse Competency Standards are also expected to be able to raise the dignity of nursing services so that nursing work is recognized by the community as a noble job because caring for human individuals who are in need of a helping hand and care from a competent nurse. The Indonesian Nurse Competency Standards are

able to improve the health status of the Indonesian nation and state. The largest number of nursing staff in a health care institution is expected to be able to leverage the quality or quality of service from the institution in the eyes of public.

Every program planning process needs to be well planned and prepared. The planning process starts with setting goals, setting targets, setting budgets and establishing good and sufficient resources to implement programs or activities. This preparation needs to be evaluated whether it is good to make the organizational goals achieved. Good preparation will have a good impact on the program.

The Indonesian Nurse Competency Standards are prepared and determined through careful discussion. It is also decided that those Standards are put into effect through Decree of the Chairman of the Indonesian National Nurse Association Center. The Indonesian Nurse Competency Standards has strong legality to be implemented nationally which can also have a national impact on the nation and state of Indonesia. That is why it must be well prepared about the content and weight as well as the quality of the Indonesian Nurse Competency Standards themselves and the preparation for their implementation.

Preparations carried out include human resources that will be involved in the discussion, preparation and stipulation of the Indonesian Nurse Competency Standards. Human resources are adapted to the Industrial Revolution 4.0 which is skilled at using digitalization in nursing practice and management. The Indonesian Nurse Competency Standards drafting team is good and has the knowledge, skills, and intelligence to use digitalization in the nursing area. Likewise with human resources that will be established to monitor and evaluate the implementation of the Indonesian Nurse Competency Standards themselves so that they are carried out with quality and are able to achieve the goals of stakeholders who are able to create a renewable Indonesian Nurses Competency Standards. With the availability of appropriate human resources and carrying out their respective functions so that the results of the implementation of the Indonesian Nurse Competency Standards will have a positive and current impact on stakeholders.

CONCLUSION

The evaluation results of the context aspects of the establishment and application of the Indonesian Nurses Competency Standards found the legal basis of the 1945 Constitution, Law of the Republic of Indonesia No. 36 of 2009, Law of the Republic of Indonesia No. 20 of 2017 regarding National Education System, the result of an agreement between the Professional Organization and the Center for Empowerment of Health Workers and the results of the national convention held on 1-2 June 2006 concerning Vocational Nurse Competency Standards and nurses of

the Indonesian Generalists. The researcher concluded that in the determination and implementation of the Indonesian Nurse Competency Standards had references or guidelines.

The researchers recommend on the context aspects so that the contents and objectives of the Indonesian Nurse Competency Standards are adapted to the industrial revolution 4.0. The input aspects, namely human resources, budget, facilities, organizational structure, planning for setting, procedures for setting, design, stages of stipulation and standards for establishing the Indonesian Nurse Competency Standards is renewable and adapted to the industrial revolution 4.0. The process aspect is starting from the discussion, determination, implementation of the Indonesian Nurse Competency Standards all adapted to the industrial revolution 4.0. Product aspects are procedures for establishing, implementing and monitoring evaluations of the Indonesian Nurse Competency Standards and nursing education curricula that have accommodated material adapted to the industrial revolution 4.0. The impact aspect is a system of periodically measuring stakeholders' satisfaction with the performance of the Indonesian Nurse Competency Standards with the aim of maintaining and developing the quality of continuously renewable Indonesian Nurses Competency Standards.

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