



**CONCEPT ANALYSIS OF CAREER DEVELOPMENT
INFECTION PREVENTION CONTROL NURSE (IPCN)**

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ABSTRACT

Infection Prevention Control Nurses (IPCN) are a vital component in preventing the impact of Healthcare Associated Infections (HAIs), advocating and implementing infection control practices. Conditions in service, IPCN's large and risky role has not been balanced with rewards in its career which must be developed in accordance with increased competence. The purpose of this article is to explain the concept of IPCN career development in hospitals. The method used is the Walker and Avant concept approach. To advance knowledge, concept analysis will help refine and clarify IPCN career development. Walker and Avant's framework is used to clarify the current understanding and use of IPCN career development in practice and research across a variety of disciplines. Important attributes of this concept include IPCN competency, professionalism, career advancement ladder, improving performance quality and productivity, a structured career framework, as well as coaching and evaluation based on performance assessments to gain appreciation and self-actualization. The conclusion of this analysis concept is to increase nurses' knowledge about IPCN career development in hospitals to provide recognition and appreciation for the performance that has been carried out towards patient and staff safety through infection prevention and control in hospitals.

Keywords: career development, IPCN, infection prevention and control.

ABSTRAK

Infection Prevention Control Nurse (IPCN) atau perawat pengendali infeksi di rumah sakit merupakan komponen vital dalam mencegah dampak Healthcare Associated Infection (HAIs), mengadvokasi, dan mengimplementasikan praktik pengendalian infeksi. Kondisi di pelayanan, peran IPCN yang besar dan penuh risiko ini belum diimbangi dengan penghargaan di dalam kariernya yang harus dikembangkan sesuai dengan peningkatan kompetensi. Tujuan artikel ini adalah untuk menjelaskan konsep pengembangan karier IPCN di rumah sakit. Metode yang digunakan adalah pendekatan konsep Walker dan Avant. Untuk memajukan pengetahuan, analisis konsep akan membantu menyempurnakan dan mengklarifikasi pengembangan karier IPCN. Kerangka Walker dan Avant digunakan untuk memperjelas pemahaman dan penggunaan pengembangan karier IPCN saat ini dalam praktik dan penelitian di berbagai disiplin ilmu. Atribut penting konsep ini mencakup kompetensi IPCN, profesionalisme, tangga kemajuan karier, peningkatan kualitas kinerja dan produktifitas, kerangka karier yang terstruktur, serta pembinaan dan evaluasi berdasarkan penilaian kinerja untuk memperoleh penghargaan dan aktualisasi diri. Kesimpulan dari konsep analisis ini adalah meningkatkan pengetahuan perawat tentang pengembangan karier IPCN di rumah sakit untuk memberikan pengakuan dan penghargaan terhadap kinerja yang telah dilakukan terhadap keselamatan pasien dan petugas melalui pencegahan dan pengendalian infeksi di rumah sakit.

Kata Kunci : pengembangan karier, IPCN, pencegahan dan pengendalian infeksi.

INTRODUCTION

HAIs are a major health problem that has an impact on significantly increasing morbidity, mortality, Length of Stay (LOS) and quality of life, as well as the financial burden on the health care system (Burnett, 2018; Dekker, Jongerden, Van Mansfeld, et al., 2019; L.-M. Liu et al., 2014; Lobo et al., 2019a; Pogorzelska-Maziarz et al., 2018). HAIs are associated with patient safety, cause increased mortality and morbidity, and greatly affect health resources (L. M. Liu et al., 2014) WHO reported that the estimated HAIs cases in 2016 were two million patients each year. It is reported that between 6% and 27% occur in patients treated in developing countries with a mortality rate of 18% to 22% (Mugomeri, 2017) According to the European Center for Disease Prevention and Control, 2017 estimates that there are more than 2.6 million cases of new hospital infections in Europe every year. German national statistical data shows that 1.5% to 2.5% of patients die from serious conditions after being infected with HAIs every year (Peter et al., 2018). The US Center for Disease Control and Prevention reports that the economic burden as a result of the incidence of HAIs in the USA ranges from US \$ 35 to US \$ 45 million annually, while in Europe it is more than € 7 million (WHO, 2016). The current data of HAIs incidents in Indonesia is not yet clear because recording and reporting mechanisms still need to be improved. The implementation of HAIs bundles to prevent and control infections has also not been implemented optimally. Based on surveillance of 10 teaching hospitals that carry out active surveillance, it was found that the incidence of HAIs was 6 to 16% with an

average of 9.8% each year (Perdalin, 2014).

Infection control is evolving rapidly and becoming increasingly complex, due to resource-intensive responses to outbreaks related to the use of medical devices, global epidemics, and evolving policies. This increased complexity is compounded by changes in the health care system that present significant challenges for infection control staffing and resources (Smathers & Sammons, 2020). Among multi-disciplinary as health service providers, nurses who constantly provide care for 24 hours have the opportunity to transmit HAIs to patients. Nurses can create a safe environment for patients from the transmission of infection through hand hygiene, implementing aseptic techniques, standard precautions, patient education, and equipment decontamination techniques. Nurses have a unique and critical opportunity, not only to implement appropriate nursing care, but also to conduct the research that underlies the delivery of education and infection control practices. Continuously update knowledge and skills to increase compliance with infection control standards (Burnett, 2018; Dekker, Jongerden, Mansfeld, et al., 2019; Lobo et al., 2019b; Mohammad, 2018) This encourages collaboration skills to work as a team, be optimistic and consistently maintain commitment and professionalism values in increasing compliance with infection control in hospitals (Pungus & Musharyanti, 2022; Wijayanti et al., 2022)

Infection control in this hospital is monitored by infection control nurses who are more familiarly called Infection Prevention Control Nurses (IPCN), part of infection control professionals. IPCN is a vital component in preventing the impact of HAIs, role as coordinator, motivator, advocating for, and implementing infection control (Fitria et al., 2022; Freeman & Gray, 2013; Kalp et al., 2018; L. M. Liu et al., 2014). IPCN is able to bring a vision of discipline, strength, responsibility and high dedication, which consistently from day to day becomes a motor in preventing and controlling hospital infections (Assariparambil Shalini G. et al., 2021; Vassallo & Boston, 2019) in service, IPCN's large and risky role has not been balanced with rewards in its career which must be developed in accordance with increased competence. This affects IPCN's performance and motivation in implementing infection control practices, job satisfaction and self-confidence in carrying out its role (Denton et al., 2019) There are still many problems found in implementing career development even though there are regulations governing it.

Until now, there are still problems and changes in health services very quickly. Increasing cases of infection increase stress at work and contribute to psychosocial responses in the work environment which can cause burn out (Colindres et al., 2018) Meanwhile, work overload, role conflict as a professional IPCN, lack of personnel, psychological pressure from institutions, lack of knowledge about infection control, and support from nursing organizations risk causing turn over (Choi & Kim, 2020). Continuously unequal work rewards contribute to the chain of infection because it will reduce nurses' compliance in preventing and controlling infections (Colindres et al., 2018). This phenomenon is still felt in Indonesia, IPCN is still a matter of controversy and contradiction, on the one hand IPCN occupies an important role in infection control, on the other hand leadership support is still neglected regarding facilities and infrastructure, rewards and career paths. Efforts are needed to increase the value of professionalism by providing additional support through increasing competence, career development opportunities, and rewarding performance (Sonniya et al., 2023) To increase knowledge, concept analysis will make it possible to clarify the understanding of the importance of career development for IPCN in hospitals.

METHOD

The Walker and Avant concept technique which has eight steps is used in concept analysis to clarify the meaning of a concept. The steps are as follows: 1) choose the concept to be analyzed; 2) determine the purpose of the analysis; 3) identify all applications of the concept; 4) determine the

attribute definition; 5) identify case models; 6) identify bordering, related, and contradictory cases; 7) identify fabricated and illegitimate cases; 8) define empirical references (Brush et al., 2011)

By using the Walker and Avant concept approach which has eight steps, concept analysis is carried out to clarify an idea. The steps are: 1) choose the concept to be analyzed, 2) find out the purpose of the analysis, 3) find out all the ways the concept is used, 4) find out its attributes, 5) find the case model definition, 6) find the case- connected, incompatible, artificial, and invalid border cases, 7) selecting antecedents and consequences, and 8) defining empirical references (Walker & Avant, 2014). The terms “career development” and “infection prevention and control” are frequently used in literature findings. Articles published within the last ten years, written in English and Indonesian, must also meet certain inclusion requirements.

RESULTS AND DISCUSSION

Select a concept

The concept chosen for the above phenomenon is IPCN career development in hospitals, the reason for choosing is because career development is very important for IPCNs who have competence in preventing and controlling very risky infections in hospitals which affects motivation and rewards as well as performance productivity in preventing and controlling infections in the hospital.

Defining the Purpose of the analysis

The purpose of the analysis is to explain the concept of career development and clarify the various meanings of career development for IPCN, by using attributes used as case models, borderlines, related cases, and vice versa, explaining antecedents and consequences, and considering the empirical references obtained.

Identify Concept Uses

The definition of attribute according to Walker & Avant, (2014) is to find as many uses for the concept as possible by using dictionaries and available literature. A literature search through the EBSCOhost, ProQuest, Science Direct, Google Scholar, and PubMed databases was carried out to identify various definitions of the concept of career development, the process of identifying the characteristics or characteristics of definitions used in each field of science as a first step in determining the definition of an attribute .

Career Development

Career development is a process of activities carried out by someone to fulfill their needs in developing or advancing their work (KBBI). Professional career development is an important phase of lifelong learning in which nurses are involved in developing and maintaining competence, improving professional nursing practice, and supporting the achievement of career goals (ANA, 2010). Career development is a career planning activity through procedures for optimal self-development according to organizational goals, which influences job performance and satisfaction. Supervision, support and increased competency are needed, which foster motivation, commitment, job satisfaction and performance, as well as preventing burn out and turnover (Irma Kue et al., 2023). Career development is a function of all components of human resources, including the results of good recruitment and selection, appropriate placement, having the ability to carry out tasks (performance) specified in the structure, receiving appropriate compensation (rewards), providing employee development in improving performance for current positions and preparing for positions that will be held in the future (Ardiyansah, 2018) Career development is an activity between individual employees and the organization, both parties must do what is expected to ensure a successful work climate that will bring maximum productivity, requiring the latest attitudes, knowledge and skills (Gyansah & Guantai, 2018).

Career development for registered nurses, from practitioner level to consultant level which describes the broad scope of responsibilities or roles of nurses and recommended professional requirements. Information at each level is built to determine the level of the framework that identifies various aspects of practice, roles and responsibilities, knowledge, skills and behavior (Freeman & Gray, 2013). Career development involves various alternatives such as developing abilities, preserving, providing new skill attainment, job enrichment, career advancement ladders, employee workshops, and job rotation with the outcome of employees performing well and providing them with a promising environment for taking risks and increasing career resilience. Career development programs enable all workers to make progress within the organization from the start. It also helps determine career paths and removes all obstacles to the advancement of workers (Kaya & Ceylan, 2014)

Career development is a formal step used by institutions and individuals to improve skills and knowledge in achieving a planned career through promotional opportunities (Putra, 2020) Opportunities for developing careers are linked to expectations through strategies designed to respond to changes in the profession and developing health services (Syahrir & Fatmawati, 2023) Career development can meet human resource needs in an organization in a timely manner through potential career paths within the organization, and make maximum use of existing human resource programs by integrating activities that select, assign, develop and manage individual careers with organizational plans through the platform measurable variables consisting of skills, experience, promotion, values, recognition and awards (Osibanjo et al., 2014) Nurse professional career development is a system for improving performance and professionalism according to the field of work through increasing competency in formal education and competency-based continuing education, as well as recognized clinical practice experience, which results in professional, accountable, ethical performance, within the limits of authority, followed by material rewards that take into account the career level of each professional career level. Its application from one level to another higher level is evaluated based on performance assessments (Permenkes, 2017). Appropriate career management is needed through career planning and control as well as strategies to achieve career goals through self-evaluation by identifying strengths and weaknesses, forming networks, and competing for awards (Rustiana et al., 2023)

Based on the analysis of the attribute components above, it can be concluded that the operational definition of career development or IPCN career development is a career planning flow process for IPCN to maintain and develop the latest competencies that describe the roles and responsibilities of IPCN in implementing accountable nursing practices, according to the limits of its authority within the framework structured work, there are career levels at each level, from practitioner to consultant level that require coaching and evaluation based on performance assessments to obtain promotions, compensation, rewards or material awards, certified recognition, as well as achieving career goals in the form of IPCN self-actualization, and increasing the productivity of IPCN's performance as professional infection prevention and control nurses.

Defining Attribute Definitions

According to Walker and Avant (2011), attributes are characteristics of a concept that are recorded repeatedly in the literature. Based on a review and analysis of various definitions, it shows that several attributes are career development concepts.

- 1) Competency: maintaining and developing maximum ability or potential which includes the latest knowledge and skills, as well as attitudes based on ethics
- 2) Professionalism: describes the roles and responsibilities of accountable nursing practice, within the limits of authority
- 3) Career advancement ladder: path to planning a future career.
- 4) Increased quality of performance, maximum productivity and organizational progress.
- 5) A structured, planned, standardized framework, there are career levels at every level, from practitioner to consultant level.

- 6) Career development requires coaching and evaluation based on performance assessments to obtain promotions, compensation, material rewards or awards, certified recognition, as well as achieving career goals in the form of self-actualization.

Cases Model

The case model in this case uses the IPCN career development concept based on infection prevention and control competencies in hospitals, by showing all the attributes determined by this concept (Walker & Avant, 2014). The case below is a model case using all the attributes obtained from the IPCN career development concept.

IPCN D is a professional nurse who completed a master's program in nursing management three years ago. He has joined the PPI Committee ten years ago as IPCN level I or Competent after completing his basic competencies through basic and advanced infection prevention and control courses by Perdalin. Currently, IPCN D has been at level III or IPCN expert for two years. IPCN D is also part of the HIPPI and Perdalin professional organizations in the field of education and training to train certified IPCN candidates and is part of the Indonesian Ministry of Health in providing guidance to hospitals that will take part in accreditation in the PPI field.

At hospital IPCN D has been able to design an Infection Control Risk Assessment (ICRA) with the help of five other IPCNs to identify risk factors that have the potential to cause infection in the hospital. So that the work program is right on target and measurable and more effective to implement. In its daily life, IPCN D carries out monitoring and evaluation and provides consultations to the five IPCNs under it, namely three IPCN level I, two IPCN level II. Once a month, IPCN D, assisted by five other IPCNs, analyzes and compiles recommendations for the results of audits and surveillance of hospital infections (HAIs) to be reported to the Committee Chair and Head of the Hospital, as well as facilitating the dissemination of leadership recommendations as a follow-up. Collaboration mechanisms with the medical team, IPCN Link in the room, and other health workers are often carried out to discuss strategies for controlling infections that occur.

IPCN D analyzes phenomena and evaluates infection data to be researched and used as a basis for creating PPI work programs and innovation programs in preventing and controlling infections in hospitals. The service area is PPI monitoring in the Emergency Room, Operating Room, ICU, Negative Pressure Isolation Room, Surgical Treatment Room, and Stroke Unit. Over the past two years, there has been an increase in officer compliance in implementing isolation precautions, as well as a decrease in the incidence of surgical site infections (SSI). This makes IPCN D feel satisfied with its performance and encourages IPCN D to be more enthusiastic about developing its competencies and becoming a role model for the five IPCNs under it.

This situation shows the competence needed to achieve the expected performance productivity as an IPCN who really understands his role and responsibilities in implementing infection prevention and control programs in hospitals. This example makes it clear that IPCN D improves its competencies through continuing education and work experience. He acts as a role model and preceptor for IPCN under him and carries out interprofessional collaboration, as well as reporting and compiling recommendations to leadership based on the results of evidence-based analysis. He is able to act as a manager, clinical practitioner, educator, and researcher in the field of infection prevention and control in hospitals, and he shows satisfaction in his developing career and gaining recognition and awards that are in line with expectations. This encourages IPCN D to be motivated to improve its professional competence.

Border case (borderline)

The borderline case is an example of using most of the attributes that define a concept but not all (Walker & Avant, 2014).

IPCN H is IPCN Level II (Proficient) is conducting surveillance in the Internal Medicine Treatment Room. There, a doctor was seen after carrying out post-operative wound care together with a nurse who did not carry out hand hygiene according to the SOP and then continued visiting the patient next to him. The doctor said that his hands were still clean and he was wearing sterile gloves. IPCN H understands this and advises the nurse in the room to remind the doctor again regarding the implementation of standard precautions so as not to risk infecting the patient.

IPCN H continued his surveillance to the Clinical Pathology Installation, where he saw that the laboratory staff did not carry out hand hygiene before moving on to take blood samples from the next patient, and were using gloves with a hole in the index part. The officer said that a lot of blood had been taken from the patient, after four or five patients had only carried out hand hygiene, and when wearing gloves, the index finger was not sensitive enough to be able to find the stabbing site. IPCN H firmly and politely reminded and provided education that the laboratory staff had the potential to transmit infections to patients and themselves. Urge the laboratory staff to have a culture of safety. From this case, it appears that IPCN H lacks confidence and is reluctant towards doctors who show behavior that is not in accordance with PPI standards, but with other officers they can act firmly. At the end of the month, IPCN H began to recapitulate the incidence of infections in its service area for discussion with IPCN Expert, but the investigation data was not yet accompanied by laboratory culture results showing MRSA incidents, which should have been completed when carrying out investigations and coordination in the internal medicine room with the link nurse (IPCLN) and the doctor responsible for the patient. After discussion within the team, IPCN H again coordinated with the link nurse who reported the MRSA incident, even though investigating cases of infection is the competence of IPCN Intermediate (Proficient), and has been understood by IPCN H. From this case it appears that IPCN H is not consistently carrying out case investigations according to SPO which is carried out daily.

Related Cases

Related Cases are examples that show ideas that are almost identical to the main idea but are different if considered carefully (Walker & Avant, 2014).

IPCN V has experience in the field of infection prevention and control since joining the PPI Committee eight years ago. Every day carry out HAIs surveillance and standard alert audits in scheduled survey areas. IPCN V collaborates with the Infection Prevention Control Doctor (IPCD) to diagnose HAIs, and collaborates with the PPRA Team to prevent and control antimicrobial resistance. IPCN V provides infection prevention and control education for patients, families, health workers and students who will practice in hospitals. to improve compliance with standard precautions. IPCN V periodically participates in ongoing training to improve competency and provide updates on required infection prevention and control. IPCN V also received recognition as a very experienced senior IPCN, acting as a role model and preceptor for more junior IPCNs, collaborating and discussing in carrying out investigations as well as presenting and interpreting PPI reporting data. IPCN V has also been a research member several times and disseminated the results of his research at the hospital. IPCN V feels very proud to be able to dedicate his competence in preventing and controlling infections in hospitals, even though up to now he has not been able to increase his level of career development because he has not continued his formal education to master's level as required to take the competency test as an IPCN Expert. However, IPCN V is very happy to be able to contribute to the safety of patients and staff.

From this case, IPCN V is very experienced and feels happy with his current achievements, although his career development level still needs to be improved to be able to reach expert level by continuing to higher education (master). In this way, their leadership and management skills will be more applicable, and they will be able to improve their ability to research and apply Evidence Based Practice (EBP). This will be directly proportional to the welfare, appreciation and self-actualization obtained as well as achieving better performance.

Contrary Case

IPCN A has been with the PPI Committee for two years in carrying out infection prevention and control programs together with two other IPCN people who have three years and one year experience as IPCN. As with the other two IPCNs, IPCN A carries out its role as a general IPCN by monitoring PPI in each room together without dividing the service area. Work regularly according to the work program. There is no division of competency levels because it is assumed that as IPCNs they can carry out their main duties in preventing and controlling infections together, and all have been certified as IPCNs through basic and advanced training. So they have the same knowledge even though their work periods vary. Material rewards are also equalized because all work is carried out together, there is no difference in roles. So they feel less motivated to develop their education and start to feel bored. Competence has not increased, this has an impact on IPCN performance and the quality of hospital services. Meanwhile, fellow clinical nurses at IPCN A level in the room have started to increase their level, followed by developing competence and well-being.

In contrast to the scenario above, it turns out that IPCN A is less motivated to carry out its role as a professional IPCN and carries out routine tasks, where its performance management is also less systematic. Management support is very necessary to carry out supervision and design competency standards as an effort to increase IPCN motivation in designing professional IPCN career paths.

Antecedents and Consequences

According to Walker & Avant, (2014) Antecedents are events or occurrences that occur or exist before the concept occurs. Consequences are events or occurrences that occur as a result of the occurrence of a concept, in other words its predecessor.

Antecedents

The antecedents of the concept I am discussing can be interpreted as what occurs before career development occurs or career development is influenced by the following factors:

- 1) Competence is the main factor that must be possessed in terms of knowledge, skills and attitudes that are always updated according to the targets determined to support the improvement of your abilities.
- 2) Work Experience will provide an overview of the abilities that have been possessed over a certain period of time from the most basic to expert
- 3) The collaboration mechanism shows IPCN's ability to collaborate with various scientific disciplines that support the successful implementation of the PPI program.
- 4) Professionalism which describes moral responsibility, objectivity, honesty and commitment.
- 5) Motivation to develop
- 6) Continuous professional education, which must always be updated
- 7) Supra system support is very influential in achieving goals in developing IPCN careers

Consequences

The consequence of an individual demonstrating career development achievements is a sign of achieving recognition for a profession that is based on increasing competence and continuing education. This is directly proportional to the welfare and self-actualization of IPCN regarding its performance and productivity as an infection prevention and control agent in hospitals.

The consequences that occur after implementing career development are:

- 1) IPCN has a standardized framework in stages from Young or Competent IPCN (level I), Intermediate or Proficient IPCN (level II), and Expert (Level III), easily adaptable and innovative in identifying the required competencies to focus on patient safety.
- 2) IPCN gets more recognition for competencies based on work experience and performance in infection prevention and control practices.
- 3) Increase work morale and reduce burn out and career deadlock
- 4) Organize a promotion system based on predetermined requirements and criteria so that career mobility as an IPCN functions well and correctly
- 5) Develop continuing professional education according to the recommended competency level (Junior, Intermediate and Expert)
- 6) Facilitate the credentialing process and competency testing to improve career path and material prosperity.
- 7) Increasing the professionalism of IPCN which is able to implement PPI safely and cost effectively
- 8) Increase IPCN satisfaction with their professional field as infection control nurses.

Defining Empirical Reference

Judging from the competency measurement instrument, the empirical concept of career development or IPCN career development that is related to and contains the attributes formulated above is as follows:

- a. *Nurse professional development tool research competencies.* Tools used to explore self-assessment in carrying out the professional roles and responsibilities of a nurse or used by managers and nurse educators. It contains attributes of knowledge and skills for nurses to develop a professional career. Consists of six levels of professional development, where each level has four competency assessment standards, namely: Grade 1 requires training and clinical skills; Score 2 is sufficient knowledge, but requires development of clinical skills; A score of 3 is competent, while a score of 4 is an expert who can teach others (Converse et al., 2015)
- b. *The Nurse Professional Competence (NPC) Scale.* The instrument used to measure the abilities of professional nurses is based on national competencies developed from international guidelines (WHO, 2001; ICN, 2006; WHO, 2009) (WHO, 2019) for new nurses and experienced nurses to develop their competencies, which contain knowledge, skills, professionalism, management support, and nurse job satisfaction (Nilsson et al., 2014)
- c. *Observed Clinical Competency Assessment' (OCCA)*
It is an instrument developed to assess the ability of nurses to carry out their role according to the desired results which contains competency assessments, increased formal education and training for expert nurses or consultants as a means of career development (Franklin & Melville, 2015)

Discussion

Career planning is an exploration, opportunity, and change. Starting through self-assessment and work environment, performance analysis, education, professional specialization certification that shows competency, and work experience. Infection Prevention Control Nurse (IPCN) is a professional nurse who has special competence, the ability to think critically, be open to changes and developments in the latest technology, commitment, and have autonomy and authority in making decisions and responsibilities for infection prevention and control in hospitals (Sonniya et al., 2023). As an IPCN, infection prevention and control training certification and other specific supporting training are required to become a competent IPCN in implementing their roles and responsibilities. IPCN's very vital and risky position must of course be balanced with professional career development. This is very useful in motivating IPCN to improve its competencies which support performance productivity, and patient safety when receiving nursing services (Harwanto et al., 2020). His experience is in acting as a role model, motivator, auditor, communicator, collaborator, educator and clinical practitioner. An IPCN's managerial and leadership skills, work environment, and management support are very necessary in implementing an infection control program.

Designing an IPCN career development strategy requires an understanding of the characteristics, roles and responsibilities of the IPCN, obstacles and management support in implementing infection prevention and control programs, as well as the IPCN's desired expectations for gaining recognition and awards in accordance with its competence. The results of the concept analysis show that the instruments used to assess competencies as a basis for achieving the expected career path are the Nurse professional development tool research competencies, The Nurse Professional Competence (NPC) Scale, and the Observed Clinical Competency Assessment (OCCA) model. Competency testing is the right mechanism to see achievement of IPCN competency standards which are increasing gradually. Based on the portfolio and increasing achievement of infection prevention and control programs as well as officer compliance with standard precautions are the indicators considered. IPCN's work experience in implementing infection prevention and control and increasing education and research shows increased competence that influences the achievement of patient and officer safety programs.

Management capability is required to assess and provide supervision of IPCN performance according to established standards. Guidance in the form of preceptorship and mentorship will provide comfort and a sense of security for IPCN, feeling accompanied and given the opportunity to be guided and improve their competence gradually and continuously. Increasing education and training encourages IPCN's self-confidence to become more professional in its special expertise in infection prevention and control. In this regard, a competency test assessment specifically based on IPCN's roles and responsibilities is very necessary and encourages motivation to increase the productivity of IPCN's performance in the field of infection prevention and control. Achieving career levels is based on increasing competencies as required at each level.

Implications for Nursing Practice

The aim of examining the IPCN career development concept is to identify characteristics, antecedents and consequences. This is defined based on the findings of a career development analysis. IPCN characteristics, roles and responsibilities, professionalism, collaboration, work productivity, management support, recognition and awards are aspects of IPCN career development. Education and training certification, competency improvement, and work experience are mechanisms that must be taken by IPCN which are assessed in stages and in a structured manner. The nursing manager provides opportunities and guidance and supervision of IPCN career planning and development and understands the IPCN career development model according to the IPCN competency level in

preventing and controlling infections. IPCN must plan their career development in stages and follow the regulations that have been set for competency tests.

Conclusions and recommendations

The concept analysis process is an important part of the knowledge and understanding of nurses in general and IPCNs who work full time on Infection Prevention and Control Committees in hospitals in particular by identifying the attributes, antecedents, and consequences of career development concepts. IPCN needs to develop competency and evidence-based research to innovate in implementing infection prevention and control programs in hospitals. A fundamental change is needed, where career development is used as a specific framework for IPCN.

A career development model is needed that is based on grading IPCN competencies by identifying competencies related to education, certification, length of service as an IPCN, duties and responsibilities, as well as regulations and management support. Through this career development model, IPCN will accommodate competencies so that they can reflect the expected career level level. This career development is expected to encourage the performance and leveling of IPCN competency qualifications which can be compared and integrated into the Indonesian National Qualifications Framework (KKNI) to encourage innovation in the PPI program in an effort to reduce the incidence of infection.

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