

The urgency of nurse-based peritoneal dialysis unit in remote areas a case study

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ABSTRACT

The trend of prevalence rate increase of Chronic Kidney Disease (CKD) with dialysis therapy which is not matched by the availability of adequate peritoneal dialysis units in the community will risk increasing patient morbidity and mortality. Meanwhile, the number of trained dialysis nurses is very limited. The objective is to obtain an overview of nurses' opinions regarding the concept of establishing a nursing-based CAPD unit. This research used a case study method with a descriptive design. Data were obtained through in-depth interviews conducted with 4 nurses from Papua, North Sulawesi, South Sulawesi, and East Java. The instrument was an in-depth interview guide. The dependent variable of the study was the CAPD unit and the independent variables were PD nurses and rural areas. Data were analyzed using the Rapid Assessment Procedures (RAP) model. The results of this study showed that the four informants agreed on four problems related to the urgency of establishing a CAPD unit under nurse management, namely the understanding of the term CAPD with limited socialization, the absence of training for general nurses, the role of general nurses was not yet arranged in a standard operating procedure (SOPs), and the requirements for establishing a CAPD unit by nurses were not yet available. The study recommended the importance of establishing CAPD units under the management of trained nurses, the supervision of certified CAPD nurses, and CAPD consultants, in addition to fulfilling other administrative and technical requirements.

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INTRODUCTION

The tendency to increase cases of Chronic Kidney Disease (CKD) over the last decade which is not matched by the availability of adequately trained dialysis nurses in the community could be the trigger for increasing problems for CKD patients after CAPD therapy in the community (Naser et al., 2021; Xue et al., 2019). The absence of access to information by nurses regarding CAPD in particular and dialysis therapy in general for CKD cases in the long term will have a risk of increasing them (Ambarsari et al., 2019; Lajuck et al., 2016; Smolander & Bruchfeld, 2021). The

involvement of various dialysis-trained nurses in particular, and the role of trained community nurses need to be considered (Afzal, et al. 2021). CAPD nurses in Indonesia have an active role in handling public health problems that have been explored by many researchers (Afzal et al., 2021; Wirentanus, 2019). Their involvement in CKD care is very important considering that they are the frontline healthcare professionals who deal directly in the early stages with CKD patients in the community (Hermalia et al., 2019). The problem is that currently CAPD units are still limited in big cities, especially in five provinces in Java and Bali (IRR, 2018). Cases of CKD and CAPD in remote communities need to get adequate services as part of the national health goals for equitable distribution of health services.

Around 17% of the Indonesian population suffers from CKD and the majority do not report themselves so they do not get attention from healthcare professionals (Tukayo et al., 2022). In 2017, 77,892 patients received dialysis therapy (IRR, 2018). This means that most people who do not have any access to health services carry the risk (Halcomb et al., 2020; Victor Tseng, 2021). The number of new patients in 2018 who received dialysis therapy reached 123,000 people (IRR, 2018). Even though the management of dialysis patients is still centralized in Jakarta, West Java, Central Java, East Java, and Bali. This fact is a reality that the distribution of services for CKD patients, especially by dialysis nurses, is still not evenly distributed in other areas. Currently, the number of dialysis nurses reaches 7660 throughout Indonesia, 70% of whom are not certified (5336 nurses) (Hardy et al., 2021). In the future, if this condition is not handled with proportional management, it will have an impact on decreasing the quality of service for CKD cases (Li et al., 2021). Another worst impact is the increasing prevalence of morbidity and mortality in CKD cases (Ikizler et al., 2020). In addition, it must be recognized that the success of peritoneal dialysis (PD) procedures involving the role of a dialysis nurse will be hampered (Thaiyuenwong et al., 2011).

The Indonesian Ministry of Health through the Agency for the Development and Empowerment of Health Human Resources (BPPSDM) has organized training for dialysis nurses (Kemenkes, 2018). The training aims to sharpen the competence of nurses in handling CKD cases receiving dialysis therapy (Kemenkes, 2018). It's just that their number is still limited (30%) of the 7660 nurses on duty in the dialysis unit (IRR, 2018). Of the 13033 units of existing machines, ideally, there are 6517 skilled nurses. Therefore, a strategy is needed for equitable distribution of patient services after CAPD and CKD in general (Kusumawardhani et al., 2020). Those data are evidence that the problem of CKD nursing services in the community needs to be optimized for CAPD-trained nurses, not only centered in the hospital.

This research used a case study method with a descriptive design. The aim was to obtain an overview of the concept of establishing a CAPD unit under the management of a trained PD nurse. The implication is that it is expected to help reduce the density of CAPD patient services that are centered in the hospital and facilitate the patient care system after CAPD therapy in remote areas. This effort is the implementation of equitable distribution of public health. In the field of science, this research can contribute thoughts on aspects of public health, especially in the treatment of chronic kidney failure in the community.

RESEARCH METHODS

This research method is a case study with a descriptive design. The study began by observing the phenomena or problems that existed in the community related to patients after dialysis therapy or CAPD. The study was conducted in May 2022. Observations were made on cases of chronic kidney disease (CKD), its handling, and the role of CAPD nurses in overcoming CKD problems in the community. Literature studies as secondary data were carried out in reputable journals (2017-2022) as well as scientific books published in the last 10 years (2012-2022). The results of the problem identification were then hypothesized to find out whether the involvement of CAPD-trained nurses in the care of post-CAPD patients in hospitals can be carried out in the community. It also identified the possibility of CAPD unit establishment under nursing management that can be used

as a recommendation for the preparation of the CAPD nursing management concept by CAPD nurses in the community.

Primary data collection was obtained through semi-structured in-depth interviews with four senior nurses from South Sulawesi, North Sulawesi, East Java, and Papua. They were considered professionals who knew cases of CKD and CAPD in the field and were directly involved in the incident so that when asked, the author could get valid data. The determination of the informants was based on educational qualifications, skills, work experience, and participation in activities related to PD nursing. The informants were objects that actively provide answers to what was being asked. The interview material was obtained from a list of questions collected from previously validated research (Darmayanti et al., 2019; Novelia et al., 2017). The strategy for asking questions was delivered with the Snowball strategy. Other steps during the data collection and interview process included coding the names of informants (IT from Papua, IP from North Sulawesi, AS from South Sulawesi, and IN from East Java). The focus of the interview was on identifying keywords (CKD, peritoneal dialysis training, the role of CAPD nurses, and requirements for establishing a CAPD unit). Data were collected and processed using Rapid Assessment Procedures (RAP) where in-depth information was obtained about the urgency of establishing a CAPD unit under the control of nursing management. The same method has been used by previous studies as an effective method (Cupisti et al., 2017).

RESULTS AND DISCUSSION

Interviews were conducted online using telephone or WhatsApp to IT from Papua, IP from North Sulawesi, AS from South Sulawesi, and IN from East Java. There are 5 themes that we talked about with the following results:

Theme 1: Understanding of CAPD

Several studies mention that in developing countries the term CAPD is not yet popular. Therefore, it is understandable if the understanding related to CAPD is still limited.

"I have never met an independent practice nurse who has a practice institution in Papua...I believe there are cases of CKD and CAPD therapy that require nursing intervention. This is the challenge of nursing in Papua.... nurses need to take part in events related to dialysis or CAPD to catch up with science related to renal care....." (IT)

"Never mind the general public, many of us professional nurses don't know about CAPD. The most commonly known is Hemodialysis or HD. Therefore, the most important thing is the socialization of internal CAPD in the nursing profession first. Organizing webinars and workshops are very helpful. Besides, of course, during lectures, it needs to be taught....In a city or village, we think it's the same, now we in the digital era can use gadgets to socialize the understanding of this term..." (IP).

"Honestly, I don't know much about CAPD, except hemodialysis. Therefore, we hope that there will be seminars or training events related to CAPD so that we can help provide health education to the community, especially in remote areas. This strategy is rarely used by us. As a result, yes.....nurses are blind to knowledge about CAPD, of course, many parties are harmed. And the ones who suffer the most are the people who are in dire need..." (AS).

"We are aware that many regions do not know CAPD. But in big cities, many nurses already know. Maybe because the association is also very influential...however I agree that the familiarization of CAPD must be intensively carried out....." (IN).

Theme 2: Peritoneal dialysis training

PD training has so far been limited to nurses working in dialysis units. And that's not in big quantities. Only 30% of them are trained.

"We hope that trained CAPD nurses will be able to share their knowledge and experience with general or community nurses...that's the way we must go about overcoming the gap due to the lack of CAPD specialist nurses..." (IT)

"...I have never heard of the term...this is the first time...that's why our challenge going forward is the competence that can only be answered through training by specialist nurses or trained in CAPD...." (US).

"For us, because of our work in the Dialysis unit, we have received training and there are always updates....it is different from general nurses who have not been trained..." (IP)

"We received training not only from the ministry of health but also from companies related to CAPD... so we benefited from updating knowledge and skills about CAPD. It's just that the lack of this program has not seen a clear strategy on how to spread this information, knowledge, and skills so that it can be extended to remote areas...." (IN).

Theme 3: Role of CAPD nurses

One of the CAPD training content for nurses is their duties, responsibilities, and roles for CAPD patients. Wider socialization is needed for nursing professionals as a strategy for distributing knowledge and skills to general nurses in the community.

"I believe that CAPD nurses have associations whose duties, responsibilities, and roles have been written down in their organizations. The question is, can a similar role be transferred to general nurses who handle CAPD in the community as their extension in remote areas? In the future, it is necessary to arrange general nurses who receive CAPD training so that in the future they can have clear roles related to patient care, especially in areas that do not have CAPD units..." (IT).

"As CAPD nurses, we already have a clear role. So far, we have not thought about what if we transmit this CAPD nursing knowledge to general nurses. It's a very good idea to sort out which are our roles and which are theirs..." (IP).

"...I don't have an idea of how our role will be in the future until we get CAPD nursing training...." (US)

"In our organization it is clear. Moreover, we have attended training related to CAPD several times. So, our role is clear. The obstacles for general nurses in remote areas who face cases of CKD are indeed severe because they do not know what to do. Their role will be clear if they have received training from us CAPD-trained nurses...don't have to wait for training from the Ministry of Health....But we can't move on our own without someone organizing it....." (IN)

Theme 4: Conditions for establishing a CAPD unit

So far, CAPD units are only available in major hospitals with CAPD consultants. In the future, our challenge is with the growing number of cases that are not accompanied by the number of trained CAPD nurses, will threaten to increase the morbidity rate due to post-CAPD complications. It is necessary to consider optimizing the establishment of CAPD units by nurses in the community. Of course with professional requirements. Informants from Papua, North Sulawesi, South Sulawesi, and East Java all agreed to involve nurses in the establishment of the CAPD unit.

"As long as the requirements are clear, I don't think it's a problem... including in Papua, where the population is still small. However, in the future, this service is very much needed and must be handled by trained nurses...." (IT).

"We believe we can do it because we already have the facilities. Just add to the existing shortcomings. we need support..." (IP).

"I think it's a very good idea because the nursing law already regulates the right of independent practice for nurses. So that competence can be expanded. As long as the rules are clear, why not?" (IN).

Rapid Assessment Procedures (RAP) Analysis

Table 1: The list of problems identified based on RAP analysis

Theme	Problems	informant
1	Understanding of the term CAPD whose socialization has not been evenly distributed	1T, IP, US, IN
2	There is no training for general nurses	IT, IP, US, IN
3	The role of the general nurse has not yet been formulated	IT, IP, US, IN
4	The requirements for establishing a CAPD unit by nurses	IT, US, IP, IN

have never been discussed

The summary of the table above shows that the four informants agreed regarding 4 problems faced related to the urgency of establishing a CAPD unit under nurses' management, namely understanding the term CAPD which has limited socialization, no training for general nurses, the role of general nurses have not been arranged in standard operating procedures (SOPs), and the requirements for establishing a CAPD unit by nurses are not yet available.

Study Limitations

This study did not involve a wider case sample that could adequately represent the phenomena that exist in the community, due to limited time, funds, and the number of researchers. However, this study contributes novelty because many previous studies have only raised technical problems of CAPD nursing without raising efforts to optimize the role of trained CAPD nurses in establishing CAPD units.

Discussion

The results of this study indicate that the urgency of establishing a CAPD unit in nursing professional control was faced with four obstacles as the evidence, namely understanding the term CAPD which is limited in socialization, the absence of training for general nurses, the role of general nurses have not been arranged in standard operating procedures (SOP), and the requirements for establishing CAPD. unit by nurses is not yet available.

First, related to the very limited socialization of CAPD. Many studies reveal the background why the CAPD procedure is not yet popular in developing countries, partly because the understanding of the community, even health professionals is still not optimal (Ambarsari et al., 2019; Cullis et al., 2021; Kosmadakis et al., 2018). Besides the government support has not been concrete for this program (Manaf et al., 2017; Sola et al., 2020). So there is no organized socialization program from the center to the regions. Moreover, if those CAPD programs have not been included in the educational curriculum, certainly, students do not understand it. What happened was predictable, namely the general nurse's lack of understanding of CAPD. Therefore, structured collaboration is needed from various parties, ranging from the ministry of health, education, lecturers, professional organizations, and health professionals to private organizations.

Second, there is no widely available CAPD nursing training. So far, CAPD nursing training has only been provided by a certified Ministry of Health (Nugraha et al., 2017). Semi-formal training is provided by a private company engaged in renal care equipment. This gap causes the number of trained and certified CAPD nurses to be very small, even only 30% of the total nurses who work in the dialysis unit. To distribute the knowledge and skills of general nurses to increase their competence, trained CAPD nurses must be involved in the short training for general nurses on CAPD (Figueiredo et al., 2016; Kontos et al., 2018). So even though they are not certified, they have additional competence. Of course, its implementation needs to get support from related agencies, and professional organizations.

Third, about the role of general nurses in CAPD nursing. So far, this study shows no document is used as a guide regarding the role of general nurses in CAPD nursing. The role of CAPD nurses is transparently seen in the dialysis training manual published by the Ministry of Health and the dialysis nurse association (BPPSDM, 2018). This fact must be understood because the general nurse was never involved in CAPD nursing even though it was known that the number of dialysis nurses was very limited. This problem if it lasts in the long term will make general nurses unable to carry out CAPD nursing procedures when their roles and functions are not introduced early on in CKD cases including CAPD. Therefore it is necessary to involve those who are interested in CAPD nursing given short training by trained CAPD nurses who are inexpensive,

The fourth one, the requirements for establishing a CAPD unit by nurses are not yet available. The number of CAPD units in Indonesia is around 80 units spread mostly in Java and

Bali (Afzal et al., 2021). The rest is lacking due to various technical constraints and insufficient human resources. the CAPD units. The unavailability of CAPD units in remote areas has hampered services for CKD cases in general and dialysis in particular (Lew et al., 2021; Ye et al., 2019). The hardest sufferers are CAPD patients because they do not have access to adequate public health services. Especially if the requirements need a consultant as the person in charge who is physically available. On the other hand, the involvement of trained CAPD nurses who give limited authority to general nurses who are licensed, and competent independent practitioners will greatly help this gap. Therefore, their involvement after being trained, having adequate facilities and infrastructure, and clear SOPs need to be considered in the urgency of establishing the institution, namely the nurse-based CAPD Unit. Of course, other administrative and technical requirements such as facilities and infrastructure, feasibility, occupational safety, and health to the presence of a CAPD consultant need also to be considered.

CONCLUSION

The purpose of this study was to obtain an overview of nurses' opinions regarding the concept of establishing a CAPD unit under the control of trained nurse management. With the hope that it will help reduce the density of services centered on hospitals and facilitate access to CAPD services for people in remote areas. The results of this study indicate that the urgency of establishing a CAPD unit under professional nursing control is faced with four obstacles, namely understanding the term CAPD which is limited in socialization, the absence of training for general nurses, the role of general nurses have not been arranged in standard operating procedures (SOP), and requirements of the CAPD unit establishment by nurses is not yet available. The results that have been achieved in this study are evidence of contribution as well as implications of the research. We recommend the importance of establishing a CAPD unit under the control of a trained nurse with the supervision of a certified CAPD nurse and a CAPD consultant, in addition to fulfilling other administrative and technical requirements. The limitation of this research is that it did not involve wider case examples that can adequately represent the phenomena that exist in the community, due to time, funding, and number of researchers. In the future, further research is greatly appreciated, specifically involves wider CAPD nurses, the community, CAPD consultants, health policyholders, and CAPD users so that the feasibility of this research is more real.

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