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ORIGINAL

Nurses' Experiences In Post-Cataract Surgery Patient Care Education Management

Experiencias de enfermeras en la gestión educativa del cuidado del paciente postoperatorio de cataratas

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ABSTRACT

Introduction: the prevalence of post-cataract surgery infection or endophthalmitis in Bali is increasing. Educating patients on post-cataract surgical care is one preventive intervention that can be implemented. Targeted, purposeful, effective, and efficient education can be achieved through good educational management by nurses. The purpose of this study was to explore the experiences of nurses in managing education for post-cataract surgery patients.
Method: this study used a qualitative design with a descriptive phenomenological approach. Participants consisted of 16 ophthalmic nurses selected using purposive sampling. Data collection techniques involved in-depth interviews using semi-structured interview guides. Data analysis techniques used thematic analysis from Braun and Clark.
Results: this study revealed four themes, namely suboptimal planning function, suboptimal organizing function, suboptimal implementation function, and suboptimal control function.
Conclusions: the management of post-cataract surgery patient care education is generally not optimal and needs improvement at every stage of management function. Nurses need to increase their knowledge and awareness of the importance of education management as well as support facilities and infrastructure from the hospital.

Keywords: Post-Cataract Surgery; Endophthalmitis; Education of Health Professionals; Nurses.

RESUMEN

Introducción: la prevalencia de infecciones o endoftalmitis postoperatorias de cataratas en Bali está aumentando. Educar a los pacientes sobre los cuidados postoperatorios de cataratas es una intervención preventiva que puede implementarse. Una educación dirigida, con un propósito claro, eficaz y eficiente puede lograrse mediante una buena gestión educativa por parte del personal de enfermería. El propósito de este estudio fue explorar las experiencias del personal de enfermería en la gestión de la educación de pacientes postoperados de cataratas.
Método: este estudio utilizó un diseño cualitativo con un enfoque fenomenológico descriptivo. Participaron 16 enfermeras oftalmológicas seleccionadas mediante un muestreo intencional. Las técnicas de recolección de datos incluyeron entrevistas en profundidad utilizando guías de entrevista semiestructuradas. Las técnicas de análisis de datos utilizaron el análisis temático de Braun y Clark.
Resultados: este estudio reveló cuatro temas: planificación deficiente, organización deficiente, implementación deficiente y control deficiente.

Conclusiones: la gestión de la educación para el cuidado del paciente postoperatorio de cataratas generalmente no es óptima y necesita mejoras en cada etapa de la gestión. El personal de enfermería debe aumentar sus conocimientos y concienciación sobre la importancia de la gestión de la educación, así como de las instalaciones e infraestructura de apoyo del hospital.

Palabras clave: Cirugía Post-Cataratas; Endoftalmitis; Educación de Profesionales de la Salud; Enfermeras

INTRODUCTION

Cataracts are the leading cause of blindness worldwide. The worldwide prevalence of cataracts is estimated at around 17 % of the 2,2 billion people who experience blindness and visual impairment.[1] According to data from the American Ophthalmology Association, cataract prevalence in developed countries like the United States is estimated at 22 million people aged 40 and over.[2] The prevalence of cataracts in developing countries is estimated to be four times higher than in developed countries. An estimated 62 % of all cases worldwide occur in Asia.[3] Meanwhile, the prevalence of cataracts in Indonesia, based on the results of the Rapid Assessment of Avoidable Blindness survey, shows that 81,2 % of the eight million population over the age of fifty experience visual impairment and blindness due to cataracts.[3] Data from Bali Mandara Eye Hospital shows an increase in cataract cases from 2022 to 2024. In 2022 there were 10,505 cases, increasing to 11 466 in 2023, and 16 937 in 2024.[4]

Currently, the treatment for blindness caused by cataracts is surgical. This surgery is performed to prevent serious consequences such as decreased vision and even blindness.[5] The final result of cataract surgery will improve the patient's vision, but post-operative complications can occur. One of these complications is endophthalmitis.[6] Endophthalmitis is a severe intraocular infection that can result in vision loss or even loss of the eye.[7]

The prevalence of post-cataract surgery endophthalmitis varies worldwide. A meta-analysis of studies conducted in several countries in the Americas, Europe, Asia, and Oceania found that post-cataract surgery endophthalmitis occurred in approximately 0,107 %.[8] The incidence of post-cataract surgery endophthalmitis in China based on the results of a study at Qingdao Eye Hospital from 2008 to 2019 was 0,076 %.[9] Cases of post-cataract surgery endophthalmitis in Sweden and Argentina were 0,029 % and 0,102 %, respectively.[10,11] Meanwhile, the incidence of endophthalmitis in Indonesia reached 0,18 %.[12] Research in 6 hospitals in Indonesia, including 2 private hospitals in Bali, found that the rate of post-cataract surgery endophthalmitis complications reached 1,2 %.[12] Meanwhile, data from Bali Mandara Eye Hospital, the primary eye referral hospital in Bali, shows a significant increase in cases. In 2022, the incidence of endophthalmitis reached 0,07 %, 4,61 % in 2023, and 4,39 % in 2024.[4]

Experts and the government have been working to prevent post-cataract surgery endophthalmitis early on, but its prevalence remains high. This prevention is being implemented to mitigate the impact of endophthalmitis. Endophthalmitis can lead to blindness and loss of the eye, impacting individual activity and productivity, increasing morbidity, length of stay (LOS), and increasing the cost of the National Health Insurance. To anticipate these impacts, prevention efforts need to be implemented using pharmacological and non-pharmacological techniques. Pharmacological techniques involve administering antibiotics,[13] Meanwhile, non-pharmacological techniques improve patient knowledge and skills in post-cataract surgery care.[14] One way to improve patient knowledge and skills is through education provided by nurses.[2,11,15,16,17,18,19]

Nurses, in their role as educators, must provide a good education. Education that is targeted, on-target, effective, and efficient can be achieved using a management function approach.[20] Management function is a systematic process or method for carrying out an activity.[21] Management is viewed as a process, meaning that its implementation involves several stages based on their respective functions. According to George R. Terry, these management processes are: Planning, Organizing, Actuating, and Controlling.[21,22,23] Based on observations indicate that nurses have provided patient education through IEC and leaflets, yet cases of endophthalmitis remain high, this is due to poor educational management.[24,25] Further exploration of nurse education management is important because targeted, effective, and efficient education can be achieved through good education management. Several previous studies have demonstrated the crucial role of nurses in providing education.[17,26] Previous research generally focuses more on quantitative experimental studies, so far researchers have not found qualitative studies related to post-cataract surgery management education and previous research populations have focused more on patients. Based on that gaps the purpose of this study was to explore nurse's experiences in post-cataract surgery patient care education management at the Bali Provincial Hospital.

METHOD

This study employed a qualitative design with a descriptive phenomenological approach. The research was

conducted in several hospitals in the province of Bali, Indonesia, with data collection period from August to October 2025. The populations on this study were nurse and the sample or participants were ophthalmic nurses, selected using a purposive sampling technique. Inclusion criteria included being an ophthalmic nurse, having experience providing post-cataract surgery patient care education, and more than two years of work experience in the ophthalmology field. Uncooperative participants were excluded from the study to ensure data quality and depth. Data were collected through semi-structured interviews. Each interview was audio-recorded and transcribed verbatim to ensure accuracy and completeness. Interviews were conducted in a hospital room and arranged by the researcher to maintain participant privacy and depth of exploration. Participants were interviewed for 15-20 minutes. Data was analyzed using Braun and Clarke's Thematic Analysis.[27] This systematic approach allows researchers to identify, analyze, and report patterns (themes) in the data. These phases include data identification, initial coding, theme discovery, theme review, defining and naming themes, and finally, report preparation.

The number of participants were 16 followed data saturation, meaning no new data was found and several participants had already expressed similar concerns. To ensure the data saturation every interview was compared with the previous data. The researcher did not find any new codes or categories after interviewing sixteen participants. To ensure the accuracy and validation on the data, researchers applied four key criteria from Lincoln & Guba 1985 (credibility, transferability, dependability and confirmability). Credibility was guaranteed, through member verification and conversations with the research team. By keeping an audit trail that detailed every step of the study process, reliability was attained. Field notes, transcripts, and coding findings were used to demonstrate confirmability and validate data sources. Contextual descriptions and actual quotes from participants were used as proof to improve transferability.

Ethical Clearance in this study underwent ethical review and received approval from the Health Research Ethics Committee of ITEKES Bali Approval No. 03,198/KEPITEKES-BALI/VII/2025. All participants were fully informed about the study's objectives and procedures, provided signed informed consent, and were assured of confidentiality and anonymity throughout the research process.

RESULT

Data saturation was achieved after interviewing 16 ophthalmic nurses/participants coded P1-P16. The sixteen participants consisted of three nurse coordinators and 13 nurses. The age range of the participants was mostly between 35 and 44 years (43,75 %). Participants had diverse experiences, with the majority having more than 10 years of work experience (62,50 %). Based on gender, the majority of participants were female (93,75 %). Based on education, the majority of participants were bachelor of nursing (68,75 %). More detailed participant characteristics are presented in table 1.

Table 1. Participant demographics (n=16)

Characteristics	Scale	Frequency (f)	Percentage (%)
Age (Years)	25-34	6	37,50
	35-44	7	43,75
	45-54	3	18,75
Work experiences (Years)	<10	6	37,50
	>10	10	62,50
Gender	Male	1	6,25
	Female	15	93,75
Education	Diploma	5	31,25
	Bachelor	11	68,75
Nurse position	Nurse Coordinator	3	18,75
	Nurse	13	81,25

Table 2. Themes and subthemes within the data

Themes	Subthemes
Suboptimal planning function	1. Ineffective equipment planning 2. Ineffective SOP planning
Suboptimal organizing function	1. Unclear educational duty 2. Ineffective collaboration
Suboptimal actuating function	1. Ineffective media usage 2. Unconducive educational implementation
Suboptimal controlling function	1. Lack of evaluation standard 2. Unscheduled supervision

All participants provided rich and diverse perspectives on the interview topics based on their experiences.

Thematic analysis revealed four main themes and eight subthemes (table 2).

Suboptimal Planning Function

The planning function is described as not yet achieving the expected ideal condition and still has potential for improvement. This is supported by the experiences of nurses who stated that equipment planning was ineffective (subtheme 1). Nurses prepared the equipment as needed according to what was provided by the hospital. The educational media available were leaflets, but their availability was limited, so nurses mostly provided education verbally without media.

“Education during wound care after cataract surgery uses verbal methods, no leaflets.” (P3)
“Special tools are not used for wound care after cataract surgery education; only verbal methods are used.” (P4)
“The media used are verbal; not all leaflets are used because leaflets are limited.” (P8)

Patients were reported not to have received leaflets as educational media to take home. The limitations of leaflets are addressed with alternative media, such as educational papers, which are plain paper without images, making them unattractive and giving the impression of being merely educational.

"Educational media for patients are in the form of educational sheets... they're plain sheets of paper with no pictures." (P4)
"The educational media is only in the form of writing... no pictures, just writing. The only media used is educational sheets, no other media." (P14)
"Uh... this is a kind of small piece of paper that contains written dos and don'ts after cataract surgery." (P16)

Other data indicate that the planning function is not optimal, as the nurse directly stated that the planning of the SOP for post-cataract surgery patient care education was ineffective (subtheme 2). The nurses' statements suggest confusion, as evident from observations of nurses responses during interviews. Nurses stated that there are no specific standards or plans for post-cataract surgery patient care education.

"There's no special planning, just working as usual" (P2)
"So far, there's no special planning" (P4)
"There's no special planning, but there's a care sheet that...um...points out what points to cover for post-cataract surgery care at home" (P11)

In addition to the lack of planning standards for post-cataract surgery patient care education, there are also no standards for evaluating the implementation of this education. Nurses have been conducting verbal evaluations, with no established evaluation standards.

"...there's no specific form for educational evaluation" (P2)
"So far, there hasn't been a form or questionnaire used to evaluate the education provided" (P6)
"As for evaluations like questionnaires, to be honest, there haven't been any" (P9)
"There's also no specific form like a questionnaire" (P11)

Suboptimal Organizing Function

The organizing function is described as not yet reaching the ideal level expected and still has potential for improvement. Data in this theme is supported by experiences shared by nurses who stated that the division of educational duty was unclear (subtheme 1). The data indicate that nurses directly stated that the division of educational duty was unclear. Nurses themselves determine who and when education will be provided without specific guidance from management.

“Um...usually the nurses themselves determine the tasks, there’s no specific assignment from management.” (P1)
“Usually, the wound care provider gives the treatment directly, there’s no specific assignment.” (P4)

The division of educational tasks is sometimes determined by the on-duty team leader, but there are no specific criteria. On-duty nurses take the initiative to create IEC sheets without any involvement from management.

"...they were just randomly selected, there were no specific criteria" (P4)
"Direct education from the nurses themselves, no special team" (P5)
"In my opinion, management involvement is still lacking, so the nurses are the ones who are responsible for conducting the IEC. We even prepare the IEC sheets ourselves based on the doctor's advice" (P16)

Furthermore, data showed that collaboration in educational implementation was ineffective (subtheme 2).

This subtheme illustrates that the collaboration is still not ideal to support the implementation of post-cataract surgery patient care education. Nurses provide post-cataract surgery care IEC but rarely collaborate with other healthcare team members. Nurses believe that providing post-cataract surgery patient care education is sufficient. Based on their experience, nurses are the ones who most often provide education.

"There's no collaboration. Only nurses provide IEC in the post-cataract surgery room." (P8)
"Uh...we don't collaborate. Usually, we just work with other nurses." (P14)
"There's no collaboration during post-cataract surgery. Nurses providing IEC is sufficient." (P16)
"So far, the nurses are the ones who provide education more often" (P9)

Suboptimal Actuating Function

The post-cataract surgery education process was described as not yet achieving the ideal conditions expected and still has potential for improvement.[28] The use of educational media in the implementation of education was ineffective (subtheme 1). This subtheme illustrates that the use of educational media is not yet ideal to support the implementation of post-cataract surgery patient care education. Nurses primarily provide education verbally without the use of media. Nurses stated that the education was delivered verbally and without educational media due to limited leaflets.

"...when providing wound care, we only provide verbal instruction" (P1)
"Education during wound care uses verbal instruction, no leaflets are provided" (P3)
"Special tools are not used during wound care education; only verbal instruction is provided" (P4)
"The media used is verbal, not all use leaflets because leaflets are limited, right?" (P8)
"... there are no leaflets, patients don't take any home. Sometimes we use them or sometimes we don't, depending on the patient's ability. If the patient understands easily, we just use them verbally." (P10)
"We don't give each leaflet to each patient because leaflets are limited." (P12)

In addition to the suboptimal use of media, data revealed that the educational process was unconducive (subtheme 2). This subtheme describes nurses' experiences in providing post-cataract surgery patient care education, and the process was perceived as less than conducive. Nurses reported that the educational environment was less than conducive and less supportive for the implementation of education.

"Actually, the education room itself isn't conducive because it's directly connected to the post-operative room." (P5)
"The education room is conducive if there aren't too many patients. When it's busy, it becomes less conducive." (P6)
"If patients are finishing surgery one at a time, it's more comfortable, but if patients are all together, it's less comfortable." (P14)
"The post-op or recovery room at the hospital where we work is small and doesn't have a table, so it's uncomfortable when there's more than one post-operative patient." (P16)

Interviews also revealed that the educational process was less than ideal due to the nurses' high workload. Nurses stated that when there were a lot of patients, it was a burden, but they still provided education according to procedures.

"So, for example, if a patient has had surgery, they're not educated anymore because we're overloaded with patients." (P9)
"There are a lot of patient...sometimes during the IEC session, some patient comes immediately interrupted." (P11)
"If the patients arrive in the morning at the same time, it's a rush. it's quite a burden." (P13)

Suboptimal Controlling Function

This theme describes nurses' experiences in the process of controlling or evaluating post-cataract surgery patient care education.[29] Each process is described as having not yet achieved the ideal expected conditions and still has potential for improvement. Data indicate that the evaluation process is not using optimal evaluation standards (subtheme 1). Nurses evaluate post-cataract surgery patient care education by simply asking whether the patient understands. When the patient states they understand, it is assumed they have understood the education provided. Repetition and feedback from the patient are rarely used.

"There's no repetition or re-demonstration from the patient" (P4)
"Repetition accuracy from the patient is rare. We just ask them to repeat the instructions, and that's it." (P5)
"No, we just ask the patient to repeat the instructions. The patient just observes." (P7)
"Patient demonstrations are sometimes performed and sometimes not." (P10)

In addition to the lack of validation of education, interviews also revealed that evaluation of education implementation was not measurable. Educational evaluation forms were not provided. Evaluations were conducted verbally only.

"...there's no specific form for educational evaluation" (P2)
"So far, there hasn't been a form or questionnaire used for evaluation" (P6)
"As for evaluations like questionnaires, to be honest, there hasn't been one yet" (P9)

The evaluation process for providing post-cataract surgery patient care education was deemed suboptimal due to unscheduled supervision (subtheme 2). Data showed that nurses directly stated that the supervision process was suboptimal. Management did not conduct a specific evaluation of the education implementation.

"...there's no specific evaluation from management regarding education provision" (P3)
"There hasn't been any specific evaluation from management so far" (P7)
"There hasn't been any direct evaluation from management, and there's no special form like a questionnaire either." (P11)

In addition to the lack of specific evaluations of management, the timing of supervision was also said to be unclear. Management only conducted supervision occasionally, and there was no specific schedule for evaluating the implementation of post-cataract surgery education.

"The evaluation from management directly on that day (participants were a bit hesitant to answer)? No, not really." (P6)
"There's no specific schedule for evaluations; they just do them occasionally." (P13)
"Management doesn't have a specific time for evaluations; they just do them occasionally, unscheduled." (P14)

DISSCUSION

Health education management is a continuous, dynamic, complex, and planned teaching and learning process between clients and health professionals using existing resources through the stages of planning, organizing, implementing, and controlling to improve their knowledge, skills, attitudes, and beliefs in relation to their health-related needs and behaviors within a positive health paradigm.[21,30,31] Educational management includes several stages according to George R. Terry emphasized that there are 4 management functions, namely planning, organizing, implementing (actuating), and controlling/evaluating.[32] These stages of management functions have their respective functions that cannot be separated. Based on the results of the analysis of the four management functions in post-cataract surgery patient care education, it was found that good educational management can improve knowledge, skills, and reduce the incidence of post-cataract surgery infections.[33]

A different phenomenon occurred in the implementation of post-cataract surgery patient care education management at the Bali Provincial Hospital. Data showed an increase in post-cataract surgery infections (endophthalmitis) from 2022 to 2024.The results of the study showed that, in general, the implementation of post-cataract surgery patient care education management at the Bali Provincial Hospital was said to be suboptimal. At the educational planning stage, it was said that educational media planning was not optimal, this tends to contradict the results of previous studies which stated that the preparation of effective educational media can improve the knowledge and skills of patients and families, and reduce the incidence of post-cataract surgery infections.[2,15,17,34,35] Nurses provided education using makeshift educational media prepared by the hospital. The educational media used mostly used leaflets, but the availability of leaflets was still limited so patients did not receive leaflets to take home. The results of this study align with previous research which stated that hospitals need to create programs to support patient education and equip all existing facilities and infrastructure.[36] Educational facilities and infrastructure, especially educational media, are still inadequate in some hospitals. Meanwhile, good media planning can improve nurses' performance in providing education. This is based on previous research which states that there is a significant relationship between the planning function and nurses' performance in providing healthcare services.[37] The same thing is also stated in research conducted by Tampa which states that there is a relationship between the planning function and the implementation of healthcare services in hospitals.[38]

In addition to suboptimal tool planning, the results of this study also found that operational procedure planning was suboptimal. Nurses stated that in providing their education, there was no specific planning and no standards or indicators to assess the success of the education provided. The results of this study contradict George R. Terri's concept of the planning function, which states that standards/indicators of success in achieving goals and targets must also be established at the planning stage. This is prepared as an initial plan to assess the level of success of a program, whether targets or objectives are achieved or not, so that follow-up can be carried out.[21] To create a structured and systematic education, standards or SOPs are needed so that nurses can work according to standards. However, the results of this study indicate confusion among nurses

when asked about the planning standards they implement before providing post-cataract surgery patient care education. These findings align with previous study, which found that not all hospital work units have SOPs.[39] Meanwhile, other research indicates that SOPs have a significant impact on improving nurse performance in providing health education services.[40] This indicates that post-cataract surgery patient care education planning must be collaborative between nurses and hospital management to improve media planning and standard indicators of educational success.

In the organizing stage of post-cataract surgery patient care education, the division of tasks and roles of each nurse is crucial.[41] The concept of organizing is defined as the overall management activity of grouping people and assigning their respective authorities, duties, and responsibilities to achieve established goals. Organizational activities include the division of tasks and responsibilities of educators and collaboration in providing education.[36] The results of this study indicate that the organizational function is not optimal, with unclear division of educational tasks and suboptimal collaboration. The results of this study contradict the analysis of previous research which states that a clear division of tasks and optimal collaboration can reduce symptoms of infection in patients receiving education.[26] A clear division of tasks and optimal collaboration between nurses and other healthcare professionals can increase the effectiveness of education.[41]

In the implementation stage of education, the results of the study indicate that the process of implementing post-cataract surgery patient care education is not optimal. This is supported by data stating that the use of educational media is not optimal due to limited educational media and less conducive implementation of education. The results of this study contradict previous research that stated that the use of educational media such as leaflets, booklets, and audiovisuals is effective in increasing patient knowledge.[19,35] The results of the study indicate that nurses provide education using more oral methods without media due to limited educational media. The limited media suggests that hospitals need to create supporting programs for providing patient education and complete all existing facilities and infrastructure to support the implementation of education.[42] In addition to educational media, hospitals must also provide educational rooms to support the implementation of conducive education.

At the control or evaluation stage, research results indicate that the control function is not optimal, where it is stated that control is not optimal due to a lack of evaluation standards and unscheduled supervision. Based on the concept of control, it is an effort to systematically and continuously observe, record, provide explanations, instructions, coaching and correct various inaccuracies, as well as correct errors.[36] Evaluation requires assessment standards to determine whether the goals we have previously planned are achieved or not. Based on the results of previous research, evaluations with demonstrations or re-enactments from patients and evaluations using questionnaires show significant results in increasing patient knowledge and skills in post-cataract surgery care.[2]

LIMITATION OF THE STUDY

The limitation of this study are the participants are mostly female nurse. This homogeneity has the potential to narrow the perspective on an existing phenomenon, thus reducing the transferability and credibility of this study. The other limititation on this study is lack of similar study in Indonesia has led to limitations in comparing the study results with previous research.

CONCLUSSION

Post-cataract surgery patient care education management at Bali Provincial Hospital is generally suboptimal. Every stage of the management function, from planning, organizing, implementing, and controlling, still requires improvement. Nurses play a crucial role in post-cataract surgery patient care education management. Nurses need to improve their knowledge through education and training in education management, as well as strong support from the hospital to provide adequate facilities and infrastructure to support optimal post-cataract surgery patient care education.

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CONFLICT OF INTEREST

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