
ENVIRONMENTAL MODIFICATION NURSING PRACTICE ANALYSIS WITH ADDITIONAL LIGHTING IN THE ELDERLY WITH CATARACT

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Abstract

Cataract is an eye disorder that occurs due to changes in the lens which was originally clear and translucent to cloudy. As a result, human vision becomes blurred. Visual disturbances caused by cataracts are not spontaneous, but slowly and over time will cause blindness. Cataracts are not contagious, but they can occur in both eyes at the same time. Cataracts may be asymptomatic and may be discovered incidentally during an eye examination. This happens because cataracts do not cause pain but interfere with vision, such as blurred vision and if not treated properly will cause blindness. The aim is to analyze the results of the implementation of nursing care with the intervention of modifying the environment by adding lighting to the elderly with cataracts. This KIAN aims to provide an overview of nursing care for the elderly with cataracts with nursing problems with sensory-perceptual visual perception disorders and the nursing intervention itself is to modify the environment by adding lighting. Lighting is one source of light that can illuminate objects. Lighting can come from natural light, namely sunlight and artificial light, namely lamps. The main functions of artificial lighting in the environment are; create an environment that allows residents to see in detail and carry out tasks and visual activities easily and precisely, allows residents to walk and move easily and safely, does not cause excessive air temperature increase in the workplace, provides lighting with an intensity that remains evenly spread, does not flicker, does not dazzle and does not cause shadows and enhances the comfortable visual environment and improves performance.

Keywords: Cataracts in the elderly, environmental modification and addition of light.

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Abstrak

Katarak merupakan kelainan mata yang terjadi akibat adanya perubahan lensa yang semula jernih dan tembus cahaya menjadi keruh. Akibatnya penglihatan manusia menjadi kabur. Gangguan penglihatan yang disebabkan oleh katarak tidak secara spontan, melainkan secara perlahan-lahan dan lamakelamaan akan menimbulkan kebutaan. Katarak bukanlah penyakit menular, namun dapat terjadi pada kedua mata secara bersamaan. Katarak bisa terjadi tanpa gejala dan dapat ditemukan secara kebetulan saat dilakukan pemeriksaan mata. Hal ini terjadi karena katarak tidak menimbulkan rasa sakit tetapi mengganggu penglihatan, seperti penglihatan menjadi kabur dan jika tidak ditangani dengan benar akan menyebabkan kebutaan. Tujuannya untuk menganalisa hasil implementasi asuhan keperawatan dengan intervensi memodifikasi lingkungan dengan penambahan pencahayaan pada lansia dengan katarak. KIAN ini bertujuan untuk memberikan gambaran tentang asuhan keperawatan pada lansia dengan katarak dengan masalah keperawatan gangguan persepsi sensori-perseptual penglihatan dan intervensi keperawatan sendiri yang dilakukan adalah memodifikasi lingkungan dengan penambahan pencahayaan. Pencahayaan merupakan salah satu sumber cahaya yang dapat menerangi benda-benda. Pencahayaan dapat berasal dari cahaya alami yaitu sinar matahari dan cahaya buatan yaitu lampu. Fungsi pokok pencahayaan buatan di lingkungan yaitu; menciptakan lingkungan yang memungkinkan penghuni melihat secara detail serta terlaksananya tugas serta kegiatan visual secara mudah dan tepat, memungkinkan penghuni untuk berjalan dan bergerak secara mudah dan aman, tidak menimbulkan pertambahan suhu udara yang berlebihan pada tempat kerja, memberikan pencahayaan dengan intensitas yang tetap menyebar secara merata, tidak berkedip, tidak menyilaukan dan tidak menimbulkan bayang-bayang dan meningkatkan lingkungan visual yang nyaman dan meningkatkan prestasi.

Kata Kunci: Katarak pada lansia, Modifikasi lingkungan dan Penambahan cahaya.

Introduction

The eyes are a very important organ in human life where most of the visual information can be absorbed and used in various forms of activities because of the role of the eyes (Ministry of Health of the Republic of Indonesia 2014). As much as 95% of the information obtained by the brain will enter and be translated by the eyes as the five senses of sight. A person is very dependent on the ability to see where a feeling of helplessness will appear in a person when trapped in an unfamiliar environment in darkness (Cameron 2006). Globally, it is estimated that at least 2.2 billion people have vision impairment or blindness, of whom approximately 1 billion have preventable or untreated vision impairment. Around 1 billion people have moderate distance vision problems, 88.4 million blindness due to untreated refractive errors, 94 million cataract cases, 7.7 million glaucoma, 4.2 million corneal opacities, 3 diabetic retinopathy, 9 million, and trachoma as many as 2 million, and near vision disorders caused by untreated presbyopia as many as 826 million (WHO, 2020). Cataract is an eye disorder that occurs due to changes in the lens which was originally clear and translucent to become cloudy. As a result, human vision becomes blurry. Visual impairment caused by cataracts does not occur spontaneously, but slowly and over time will lead to blindness. Cataracts are not an infectious disease, but can occur in both eyes simultaneously (Tamansa, Saerang and Rares, 2016). Blindness due to cataracts occurs if the cataract is so cloudy that the lens cannot transmit light at all (Hutauruk and Siregar, 2017). Although

cataracts can be removed surgically, many countries still have barriers to patients accessing surgery. This causes cataracts to become the main cause of blindness in the world. In addition, life expectancy in the world is getting longer, so the number of people suffering from cataracts is expected to increase. Cataracts are also an important cause of low vision in developed and developing countries (WHO, 2019). Cataracts are one of the causes of visual impairment in Indonesia. Cataracts cause around 70%-80% of severe visual impairment and blindness. Indonesia as a developing country experiences many eye health problems (IAPB 2017). The estimated incidence of cataracts is 0.1% of the population, so new cases of cataracts in Indonesia are estimated at 250,000 per year. This burden will become greater over time if a comprehensive and accommodated cataract eradication program is not carried out (Ministry of Health of the Republic of Indonesia, 2014). The results of the 2013 Basic Health Research show that the prevalence of blindness in the Indonesian population aged over 6 years has decreased, compared to 2007, from 0.9% to 0.4% in 2013. Cataracts are the main cause of blindness in Indonesia . The national prevalence of cataracts is 1.8%. The highest prevalence of cataracts is in the provinces of North Sulawesi (3.7%), Jambi (2.8%), and Bali (2.7%). The lowest prevalence of cataracts was found in DKI Jakarta province (0.9%) and 1.1% in West Sulawesi. The prevalence of blindness due to cataracts in 2014-2016 in the population aged ≥ 50 years and over in Indonesia was 1.9%. The highest prevalence was in the provinces of West Nusa Tenggara (3.1%), East Java (2.9%), and South Sumatra (2.4%). South Sulawesi with a

prevalence of 1.8% ranks 5th (fifth) out of 15 provinces in Indonesia which has the highest prevalence of blindness due to cataracts in people aged ≥ 50 years (Infodatin, 2018).

Case Report Assessment

Mrs. Ma Gho Bi entered the True Love nursing home 1 year ago, client age 71 years, address in Batu Aji, Christian religion, marital status widow, education at least junior high school, job as housewife. The client said the reason the client went to the orphanage was because her child was taking her, the client felt her child did not want to live with her.

Health history of the client suffering from diabetes and cataracts. What is currently felt is that the client feels that his vision is getting worse, it hurts when he opens his eyes, and his vision seems foggy. The client also said it was difficult to walk, his leg muscles were weak so he used a wheelchair.

Nursing diagnoses

Ineffective individual coping is related to lack of confidence in one's own ability to overcome problems

Sensory-perceptual visual perception disorders are related to impaired sensory reception/sense organ status characterized by decreased sharpness

Knowledge Deficit is related to Lack of Information about the disease

Impaired physical mobility is associated with decreased strength and endurance

The risk of falling is related to visual impairment.

Nursing Intervention

From the problems found by the author, the plan made by the nurse is to use intervention in the NIC NOC, for the first diagnosis, namely ineffective individual coping - related to disbelief in one's own ability to overcome the problem. The plan made is, examine the causes that influence the client and feelings of inadequacy. empowered, establish a therapeutic nurse-client relationship, assess the emergence of positive abilities, for example the use of relaxation techniques, the desire to express feelings and encourage clients to talk about what is happening now and what has happened to anticipate feelings of helplessness.

For the second diagnosis of sensory-perceptual vision disorders related to impaired sensory reception/sense organ status characterized by decreased sharpness, the plans made are to assess the client's visual function, maintain eye hygiene, monitor eye vision and visual field function, modify the environment with additional lighting. For the third diagnosis, knowledge deficits are related to lack of information about the disease. The plan that is made is to explain the pathophysiology of the disease and how this relates to anatomy and physiology, in an appropriate way, describe the signs and symptoms that usually appear in the disease, in an appropriate way and provide inform patients about conditions, in an appropriate manner. For the fourth diagnosis, physical mobility disorders related to decreased strength and endurance, the plans made are Early Ambulation, passive and active ROM exercises. For the fifth diagnosis of risk of falls

related to visual impairment, the plans made are: Provide a safe environment for the patient, Place a light switch in a place that is easy for the patient to reach, Provide sufficient lighting, Provide educational material related to strategies and actions to prevent injury.

Nursing Implementation

Implementation carried out from 16 May 2022 to 18 May 2022: for the first diagnosis, namely, ineffective individual coping related to lack of confidence in one's ability to overcome problems. The implementation made is, examining the causes that influence the client and feelings of helplessness, establishing a therapeutic relationship nurse-client, assessing the emergence of positive abilities, for example the use of relaxation techniques to express feelings and encourage clients to talk about what is happening now and what has happened to anticipate feelings of helplessness. For the second diagnosis of sensory-perceptual vision disorders related to impaired sensory reception/sense organ status characterized by decreased sharpness, the implementation made is to assess the client's visual function, maintain eye cleanliness, monitor eye vision and monitor visual field function, modify the environment by adding lighting. For the third diagnosis, the knowledge deficit is related to lack of information about the disease. The implementation made is to explain the pathophysiology of the disease and how this relates to anatomy and physiology, in an appropriate way, describing the signs and symptoms that usually appear in the disease, in

an appropriate way and informing the patient. patient about the condition, in an appropriate manner. For the fourth diagnosis of physical mobility disorders related to decreased strength and endurance, the implementation made is to help clients ambulate early, train clients with passive and active ROM movements. For the fifth diagnosis of fall risk related to visual impairment, the implementation made is to provide a safe environment for patients, place light switches in places that are easily accessible to patients, provide sufficient lighting, provide educational material related to strategies and actions to prevent injury.

Nursing Evaluation

Ineffective individual coping related to disbelief in one's own ability to overcome problems, the author conducted an evaluation on May 18 2022 S: the patient said he had resigned himself to his current life. O: patient appears relaxed and calm A: Problem resolved P: maintain intervention. Sensory-perceptual visual perception disorders related to impaired sensory reception/vision sense organ status, evaluation on May 16 2022 S: the patient said his vision still looked like it was shadowy and blurry. O: the patient seems to often close his eyes. A: the problem has not been resolved. P: Intervention continues. Evaluation on May 17 2022 S: the patient said his eyes seemed fresher after cleaning. O: The patient seems to be starting to open his eyes. A: The problem has not been resolved. P: Intervention continued Evaluation on May 18 2022 S: The patient said it helped when he added moaning to his room. O: The patient seemed happy when his ADL was no longer assisted.

Q: Problem resolved. Knowledge Deficit related to Lack of Information about the disease, evaluation date 16 May 2022 S: the patient said he did not know if his eyes had cataracts, O: the patient seemed to let the disease go A: The problem had not been resolved P: The intervention was continued. Evaluation on May 17 2022 S: the patient said he understood what the nurse explained, O: the patient seemed to understand more about cataracts, A: The problem was partially resolved, P: the intervention was continued. Evaluation on May 18 2022 S: the patient said he understood how to clean his eyes O: the patient seemed to have cleaned his eyes independently, A: The problem was partially resolved, P: Maintain the intervention. Impaired physical mobility related to decreased strength and endurance, evaluation on May 16 2022, S: the patient said it was difficult to walk because he was no longer strong enough to walk and activities were always assisted, O: the patient seemed to always use a wheelchair, A: The problem had not been resolved, P: Intervention next. Evaluation on May 17 2022, S: the patient said that the activities were no longer assisted by employees, O: the patient appeared to be carrying out activities independently, even though he was still using a wheelchair, A: The problem was partially resolved, P: The intervention was continued. Evaluation on May 18 2022, S: patient says he has difficulty using crutches, and will practice using crutches again, O: patient seems to have difficulty using crutches, A: Problem has not been resolved P: Maintain intervention.

Risk of falls related to visual impairment, evaluation on May 16

2022, S: patient said he was afraid of falling if activities were carried out alone due to unclear, foggy vision, O: patient appeared to be assisted with ADL, A: Problem not yet resolved, P: Intervention continued, evaluation May 17 2022, S: the patient said he was helped by sufficient lighting, O: the patient seemed to no longer be helped with ADLs, A: The problem was partially resolved, P The intervention was continued. Evaluation on May 18 2022 S: the patient said he was no longer afraid of falling because there was sufficient lighting, O: the patient appeared to no longer be helped with ADL, A: Problem resolved, P: Maintain intervention.

DISCUSSION

Practice Land Profile

This research was conducted at the True Love Batam Nursing Home. True Love Batam Nursing Home is a foundation that serves or cares for Grandparents from various backgrounds (religion, ethnicity and social status) who are paralyzed, weak and disabled and need intensive assistance. True Love Batam Foundation is located at Jl. Camping ground, Kabil Indah Plot Block A7 no 56-57 Punggur, Batam. The True Love Batam Foundation is managed by Mr. Wilson Zalogo, S.Pd, M.Si and chaired by Mrs. Intan Lia Waoma. There are 7 employees and 61 volunteers who visit once a month to carry out health checks, bringing basic necessities and medicines. The True Love Batam Foundation has been legalized by Notary's deed: Debora Ekawati Lukman Dadali, SH, No.2 dated November 6 2015 and renewal deed No.10 dated July 12 2021, and has been officially registered with SK MENKUMHAM

RI AHU 0021773.AH. 01.04 of 21015 and MENKUMHAM Renewal No. AHU-0000933.AH.01.05 of 2021. The category of parents who are cared for by this foundation are neglected parents, meaning parents in this category do not have any family at all, parents who are not well off, meaning that their economic ability is very low so they are unable to take care of their lives and entrusted parents, means the parents concerned. still have a family, but have the weaknesses and inability of the family.

Analysis of one intervention with related concepts and journals

More interventions applied in the case of Mrs. M with problems with visual sensory disorders, namely MODIFICATION of the environment with the addition of light. Lighting may be the best way to increase contrast, so if Mrs. M will be active, make sure the room is lit with enough bright lighting. Good lighting is also needed in the house in areas going up and down stairs or toilet rooms.

Poor lighting can cause eye fatigue with reduced work efficiency, mental fatigue, complaints of soreness in the eye area and headaches around the eyes, damage to visual equipment and increased accidents. Good lighting is lighting that allows Mrs. M can see the surrounding environment clearly, quickly without unnecessary effort (Richa, 2019). Low intensity lighting can cause eye fatigue, eye strain, and complaints of soreness around the eyes. However, if the lighting intensity is high, this can also cause glare which can

interfere with activities. Therefore, efforts must be made to ensure lighting with sufficient and adequate lighting intensity, namely not too low and not too high (Santoso, 2014).

This research is in line with research conducted by Naning Sari Noorhidayah (2019) with the results of a significant relationship between lighting intensity and complaints of eye fatigue. Elderly people with cataracts need sufficient lighting to help with their daily activities.

Alternative Problem Solving

The challenges that the writer faced in the case of Mrs. M, namely the lack of facilities from the orphanage, where employees were initially hesitant to recommend to the foundation that there was a lack of lighting in the environment around the orphanage. An alternative solution to the problem is by providing education and health education to nursing home employees.

The addition of light around the nursing home environment is very beneficial for other elderly people in the nursing home, the benefits are as follows; Creating an environment that allows residents to see details and carry out visual tasks and activities easily and precisely, allows residents to walk and move easily and safely, does not cause excessive increases in air temperature in the home, provides lighting with intensity that remains evenly distributed, does not flicker, does not dazzle and does not create shadows and increases a comfortable visual environment and improves performance (Supriati, 2012). Implementation is a nursing action in accordance with gerontic nursing care. Implementation is generally carried

out according to plan. The gerontic nursing care provided to Mrs. M is more focused on modifying the surrounding environment with the addition of light. The author tries to provide education and health education about cataracts to Mrs.M. From the implementation that had been carried out for 3 days, on the third day Mrs. M has been helped by the addition of room light in the environment around the orphanage, as well as Mrs. M's ADL. M is no longer helped because of the addition of lighting. The evaluation stage assesses the success of the nursing care that has been carried out based on the objectives that have been set. The implementation that was carried out in accordance with the gerontic nursing care plan resulted in the results being included in the evaluation sheet for progress notes, in this case the progress notes were carried out from May 16 2022 to May 18 2022. After modifying the environment by adding light to the environment around the nursing home, Mrs. M can carry out activities independently.

CONCLUSION

Nursing care is carried out starting from an assessment by collecting data through direct observation and carrying out physical examinations as well as information from the client's family based on a comprehensive analysis of Mrs. M's situation including bio-psycho-socio-cultural. During the assessment, Mrs. M's vital signs were checked, a physical examination was carried out on Mrs. M, and her health history was reviewed. Based on the nursing care intervention implemented, namely environmental modification with the addition of

light, it can be concluded that:

Cataract is cloudiness of the eye lens inside the eyeball. Lens clouding or cataracts will prevent light from entering the eye, resulting in decreased vision. Protein clumps in the lens of the eye cause a decrease in the sharpness of the image reaching the retina. People who suffer from cataracts initially have small lumps in the eyes that do not interfere with vision and over time the lumps will get bigger so that visual acuity gradually decreases. The vision of cataract sufferers will be impaired and can even result in blindness if left to get worse and not treated properly.

The results of the study are:

Mrs. Ma Gho Bi entered the True Love nursing home 1 year ago, client age 71 years, address in Batu Aji, Christian religion, marital status widow, education at least junior high school, job as housewife. The client said the reason the client went to the orphanage was because her child was taking her, the client felt her child did not want to live with her. Health history of the client suffering from diabetes and cataracts. What is currently felt is that the client feels that his vision is getting worse, it hurts when he opens his eyes, and his vision seems foggy. The client also said it was difficult to walk, his leg muscles were weak so he used a wheelchair.

Nursing diagnoses

Ineffective individual coping related to disbelief in one's own ability to overcome problems, impaired sensory-perceptual vision related to impaired sensory reception/sense organ status characterized by

decreased sharpness, knowledge deficit related to lack of information about the disease, impaired physical mobility related to decreased strength and endurance and fall risk are related to visual impairment. The priority diagnosis for Mrs. M with cataracts, namely sensory-perceptual visual perception disorders related to impaired sensory reception/sense organ status characterized by decreased sharpness.

Nursing Intervention

The nursing care plan carried out for Mrs. M with cataract cases based on the main diagnosis, namely; assess the client's visual function, maintain eye hygiene, monitor eye vision, monitor visual field function, modify the environment with additional lighting.

Nursing Implementation

In carrying out the implementation carried out in By.Ny. In cases of LBW, no difficulties are found, the main implementation is assessing the client's vision function, maintaining eye hygiene, monitoring eye vision, monitoring visual field function and modifying the environment with additional lighting.

Nursing Evaluation

In carrying out the evaluation carried out on Mrs. M with cataract cases resolved on the third day of treatment. Which is where there is 5 evaluations for each nursing diagnosis, namely: Ineffective individual coping related to disbelief in one's own ability to overcome problems, the author conducted an evaluation on May 18

2022 S: the patient said he had resigned himself to his current life. O: patient appears relaxed and calm A: Problem resolved P: maintain intervention. Sensory-perceptual visual perception disorders related to impaired sensory reception/vision sense organ status, evaluation on May 16 2022 S: the patient said his vision still looked like it was shadowy and blurry. O: the patient seems to often close his eyes. A: the problem has not been resolved. P: Intervention continues. Evaluation on May 17 2022 S: the patient said his eyes seemed fresher after cleaning. O: The patient seems to be starting to open his eyes. A: The problem has not been resolved. P: Intervention continued Evaluation on May 18 2022 S: The patient said it helped when he added moaning to his room. O: The patient seemed happy when his ADL was no longer assisted. Q: Problem resolved. Knowledge Deficit related to Lack of Information about the disease, evaluation date 16 May 2022 S: the patient said he did not know if his eyes had cataracts, O: the patient seemed to let the disease go A: The problem had not been resolved P: The intervention was continued. Evaluation on May 17 2022 S: the patient said he understood what the nurse explained, O: the patient seemed to understand more about cataracts, A: The problem was partially resolved, P: the intervention was continued. Evaluation on May 18 2022 S: the patient said he understood how to clean his eyes O: the patient seemed to have cleaned his eyes independently, A: The problem was partially resolved, P: Maintain the intervention. Impaired physical mobility related to decreased strength and endurance, evaluation on May 16 2022, S: the

patient said it was difficult to walk because he was no longer strong enough to walk and activities were no longer assisted by employees, O: the patient appeared to be carrying out activities independently, even though he was still using a wheelchair, A: The problem was partially resolved, P: The Evaluation on May 18 2022, S: patient says he has difficulty using crutches, and will practice using crutches again, O: patient seems to have difficulty using crutches, A: Problem has not been resolved P: Maintain intervention. Risk of falls related to visual impairment, evaluation on May 16 2022, S: patient said he was afraid of falling if activities were carried out alone due to unclear, foggy vision, O: patient appeared to be assisted with ADL, A: Problem not yet resolved, P: Intervention continued, evaluation May 17 2022, S: the patient said he was helped by sufficient lighting, O: the patient seemed to no longer be helped with ADLs, A: The problem was partially resolved, P The intervention was continued. Evaluation on May 18 2022 S: the patient said he was no longer afraid of falling because there was sufficient lighting, O: the patient appeared to no longer be helped with ADL, A: Problem resolved, P: Maintain intervention.

SUGGESTION

For Educational Institutions

It is hoped that educational institutions will be able to add sources of books or references to reading books in the library related to material on nurses' final scientific papers, so that they can support and assist nursing care in compiling nurses' final scientific papers, and this KIAN can become one of

intervention was continued. Evaluation on May 18 2022, S: patient says he has difficulty using crutches, and will practice using crutches again, O: patient seems to have difficulty using crutches, A: Problem has not been resolved P: Maintain intervention.

KIAN's source materials regarding modification. environment with the addition of light for elderly people with cataracts.

Share Practice Places

It is hoped that the True Love Batam Nursing Home practice will increase knowledge about cataracts in the elderly.

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