

## Nursing training: Self-care in patients undergoing hematopoietic stem cell transplantation in a specialized oncologic institution

### [Entrenamiento enfermería: Autocuidado en pacientes sometidos a trasplante de progenitores hematopoyéticos en una institución especializada oncológica]

Melanie Amelia Salas Huamán <sup>id</sup>, Mónica Elisa Meneses-La-Riva <sup>id</sup>, Yovani Magali Salazar Campos <sup>id</sup>, Nelly Elva Paita Huata <sup>id</sup>, Rosabell Suárez López <sup>id</sup>,  
María Gioconda Lévano Cárdenas <sup>id</sup>

Instituto Nacional de Enfermedades Neoplásicas, Perú.

\* [melany\\_ash@hotmail.com](mailto:melany_ash@hotmail.com)

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#### Resumen

El autocuidado en el paciente postrasplantado de progenitores hematopoyéticos en su hogar es trascendente para mejorar sus condiciones de salud. La actividad educativa sobre el autocuidado tiene como finalidad de establecer estrategias comunicativas que mejore su situación, disminuyendo las complicaciones prevenibles postrasplante evitando los constantes reingresos. La consejería personalizada que brinda la enfermera al paciente y al familiar mejorar su calidad de vida. Objetivos: Determinar el nivel de autocuidado de pacientes sometidos a trasplante de progenitores hematopoyéticos en una institución especializada oncológica, 2022. Metodología: estudio cuantitativo, descriptivo, diseño no experimental de corte transversal. La población estuvo conformada por 108 pacientes que acuden al servicio de TAMO, el tipo de muestreo fue probabilístico. Se aplicó un instrumento con 2 dimensiones del autocuidado: conocimientos y habilidades con 30 ítems con una escala de Likert. Se validó el instrumento con un alfa de Cronbach de 0.8. Los resultados muestran que el 100% de los pacientes tienen autocuidado adecuado. En relación a las dimensiones: conocimientos 94.4%, en habilidades 87% presentaron niveles alto respectivamente. Se concluye que la educación continua de enfermería mantiene la solvencia en el autocuidado en su vida cotidiana en el paciente.

**Palabras clave:** Autocuidado, pacientes sometidos a trasplante de progenitores hematopoyéticos.

#### Abstract

Self-care in post-transplanted patients of hematopoietic progenitors at home is transcendental to improve their health conditions. The purpose of the educational activity on self-care is to establish communicative strategies to improve their situation, reducing preventable post-transplant complications and avoiding constant readmissions. The personalized counseling provided by the nurse to the patient and family members improves their quality of life. Objectives: To determine the level of self-care of patients undergoing hematopoietic progenitor transplantation in a specialized oncologic institution, 2022. Methodology: quantitative, descriptive, non-experimental, cross-sectional design. The population consisted of 108 patients attending the TAMO service, the type of sampling was probabilistic. An instrument with 2 dimensions of self-care was applied: knowledge and skills with 30 items with a Likert scale. The instrument was validated with a Cronbach's alpha of 0.8. The results show that 100% of the patients have adequate self-care. In

relation to the dimensions: knowledge 94.4%, in skills 87% presented high levels respectively. It is concluded that continuing nursing education maintains solvency in self-care in the patient's daily life.

**Keywords:** Self-care, hematopoietic stem cell transplant patients.

## 1. Introduction

Cancer is currently considered a public health problem due to its high incidence and mortality rate. The Pan American Health Organization (PAHO) reported that 8 million people die each year. It is the leading cause of death in developed countries and one of the leading causes in developing countries. It is predicted that by 2035, approximately 15 million people with cancer will die from cancer (PAHO, 2022). Historically, since the first transplant in the world was performed in 1979, it has been identified in 2018 that approximately 80% of people with cancer have an allogeneic donor, thus increasing their life expectancy by 60%. Even when these people count on this new alternative to treatment (bone marrow transplantation), it is necessary for patients to participate in their self-care (PAHO, 2021).

In Peru, cancer is the second leading cause of death. According to the National Institute of Neoplastic Diseases (INEN), the annual incidence of cancer in Peru (2014) is approximately 150.7 cases per 100,000 inhabitants, with an average of 45,000 new cases. The procedure of Hematopoietic Precursor Transplantation is of very high complexity and can only be performed in institutions that have a specialized multidisciplinary team and adequate infrastructure within the framework of international standards, being the Institute of Neoplastic Diseases (INEN) an Accredited Institution. The most frequent diagnoses that required an allogeneic transplant were: Acute Myeloid Leukemia (48%) and Acute Lymphatic Leukemia (31%). The most frequent diagnoses requiring autologous transplantation were: Multiple Myeloma (43%), Lymphomas (37%) and Testicular Germ Cell Tumors (17%) (INEN, 2022; Salazar, 2015).

The person who receives the diagnosis of cancer, whether in the initial or terminal phase, presents diverse emotional and physical reactions; the emotional impact causes a decrease in self-care, affecting the patient's life, which is why the person is required to make use of his personal resources to avoid further complications that put his life at risk; this is called self-care, which for patients who are recovering from cancer not only implies maintaining their health conditions but is an essential condition for guaranteeing the continuity of their existence. The increase in the prevalence of chronic diseases has a negative impact on the financial, social and health systems of societies. In response to this problem, health policies are involving patients and families in the self-care of their daily life activities (INEN, 2022).

Regarding the role of nurses in their activities, they start from patient assessment to education or counseling in order to contribute to the fulfillment of self-care guidelines, and also perform follow-up at home. Hematopoietic progenitor transplantation is a treatment provided to patients with a congenital or acquired disease. There are two types of transplantation: autologous and allogeneic, the first refers to the transplantation of hematopoietic cells that come from the same person, it consists of obtaining, preserving and reinfusing the cells to the person, after administration of chemotherapy or ablative radiotherapy; the second is a procedure that involves the infusion of hematopoietic progenitor cells from a healthy and compatible donor; it is given to patients who have undergone myeloablative or reduced-intensity conditioning treatment accompanied by previously administered total body irradiation; it is performed with the aim of eradicating the cancer and obtaining the patient's immune response capacity (Torres-Reyes et al., 2019).

It should be noted that the complications that a post-transplant patient may present depend on several conditions: 1) The type of transplant, the most common being in persons with allogeneic transplants, 2) The underlying disease, 3) The situation and degree of progression of the disease, 4) The conditioning treatment and its respective schemes, 5) The patient's age. 6) Comorbidities. These complications, infections due to the decrease in post chemotherapy immunity at high doses can be: respiratory, dermal, intestinal and mucosal, hemorrhages can occur due to the decrease in platelets, presenting bleeding, petechiae, ecchymosis, epistaxis, anemia and leukopenia. Bone marrow depression increases multiple organ failures. Mucositis causes lesions and severe pain that prevent the ingestion of food (Torres-Reyes et al., 2019).

The care actions are aimed at offering the patient the best chance of cure with the least toxicity. The indication of the type of transplant must be clear to the patient in terms of the capacity to eradicate the disease and the toxicity it can produce in the patient's organism. The patient or family member must have information about the type of cancer he/she has and the treatment plan proposed by the physician, which may include autologous or allogeneic transplantation, the chemotherapy he/she will receive and the length of treatment (INEN, 2022).

It is necessary to specify that self-care is associated with autonomy, independence, personal responsibility, supported by Dorothea Orem, who maintains that self-care are actions that the person performs to protect him/herself and regulate the factors that affect him/her. It is the core of health promotion, it is self-care because it is based on the patients' knowledge of their health condition and on the planning of their treatment; in addition to the need for education and training to monitor their emergency signals or alterations in their new post-diagnostic condition, interpret the meaning of these signals or symptoms, evaluate the different possibilities to manage their changes and finally select and execute the most appropriate actions for their health based on the "Nursing Role Effectiveness Model". For nursing professionals, the objectives and expected results are that the patient achieves empowerment of self-care capacity, symptom control and maintenance of healthy habits (Silva and Pontifice, 2015).

In this sense, the nursing professional, in turn, must have personal experiences, cultural aspects, skills and appropriate behaviors to help the patient to create levels of commitment in their self-care (Salazar et al., 2015). Self-care is assuming and achieving maturity to promote self-care. Likewise, in relation to the meta paradigms, it points out that the person is a being with biological, symbolic and social functions and with the potential to learn to develop, with the capacity for self-knowledge and can learn to meet the requirements of self-care. Likewise, the environment is understood in this model as all those physical, chemical, biological and social factors, whether family or community, that influence and interact with a person. On the other hand, nursing provides care with the aim of helping pe (Oliveira et al., 2020).

To measure self-care, the nurse needs to assess the patient to induce the promotion of self-care behaviors in the patient and family, these competencies arise from health education and are divided into two dimensions: Knowledge and skills for the patient's daily activities. These are detailed below: Dimension 1 Knowledge of self-care. It is important since the nurse interacts with the patient that the education can guide the patient to recognize the problems that affect his daily life. The patient should know his or her post-transplant general condition, in order to know the time required for recovery, the possible post-transplant complications, and the time required for reincorporation to his or her activities. The patient's general condition may have deteriorated during admission and may persist for the next few months post-transplant (López et al., 2022).

It is important to educate the patient to return to his or her pre-disease and pre-transplant physical condition. Several factors influence this, such as age, the intensity of the treatment received before transplantation, the type of transplantation and post-transplant complications. Patients without serious complications can usually return to normal activity within 6-12 months post-

transplantation (López et al., 2022; Martín-Hernández et al., 2020), indicates that the basic recommendations for healthy eating are to avoid the consumption of raw foods, unpasteurized milk, fresh cheeses, yogurt, unbottled water, unwashed fruits and vegetables, to consume a minimum of 2 liters of water daily (very important, especially if you are receiving cyclosporine or tacrolimus), not to consume alcohol or smoke, to avoid going to areas of high agglomeration (requires the use of masks to move around the hospital or in waiting rooms).

Likewise, you should avoid being in contact with children with exanthematous diseases, with children recently vaccinated with polio and with people who take care of such children, as well as avoiding contact with people with catarrhal conditions and the company of animals, it is advisable to exercise or take walks, you should avoid exposure to the sun, you should control your weight weekly, monitor your temperature regularly, take the prescribed medications and keep in contact with your doctor and hospital. Likewise, he should be vigilant of the presence of alarm signs that show infections, lack of appetite, vomiting, inability to drink water, if he presents skin lesions, if he sees any anomaly in the catheter (Martín-Hernández et al., 2020).

Dimension 2 skills for the activities of daily living that patients generally perform to improve their body image; because the changes can cause emotional problems in patients. In skin care may present dryness, irritations, sensitivity to radiation, should not be exposed to the sun, and should use broad-spectrum photoprotectors. Personal hygiene should be done with warm water and mild soap and it is necessary to intensify skin hydration by consuming water and using natural moisturizers (López et al., 2022; Martín-Hernández et al., 2020).

Regarding oral hygiene, the patient should perform dental hygiene with an extra soft toothbrush after every meal and before sleeping, rinse with chlorhexidine solution or sodium bicarbonate 3 times a day, check daily his mouth in front of a mirror looking for any change, do not use mouthwashes containing alcohol, or dentures until the doctor indicates otherwise, you should not smoke or drink alcohol and should avoid citrus, rough, very sweet or irritating foods such as coffee or chili. Hands should be washed frequently with soap and water, before eating, after going to the bathroom, after returning from the street, before and after handling food, after using the cell phone and the computer, after doing household chores (Hernández and González, 2022).

Hygiene in the home: Must be kept clean and free of dust, tidy room, avoid using curtains in your room, must have sealed windows, withdraw from the room when cleaning, avoid storing things, avoid too humid environments, the bathroom you use must be very clean (walls, toilet and showers), bed linen, towels and personal pajamas, personal cutlery is required. If you have a flower garden at home, do not touch plant soils unless you use gloves and masks, avoid plants and flowers inside the room, pets, do not touch animal saliva or feces, do not play rough with cats, scratches and bites can become infected (Huaman and Gutierrez, 2021).

When receiving visitors, receive only from healthy and not recently vaccinated people. Do not receive visits from children, people who have been in contact with TB patients, chickenpox, recently vaccinated, colds. When going out of home use a mask N°95 for protection, avoid dirty areas and construction sites, public places (markets, cinemas, restaurants, shopping malls, crowded public transport, etc. ), as for the handling of medicines, wash your hands before taking the medicines, read well the indications and schedules that are in your orientation notebook, fix the expiration date and dose to be administered, if the medicine is syrup, shake until the solution is homogenized, register the taking of the medicine in your orientation notebook, use gloves when taking cyclosporine. Also, comply with the medication schedule, weigh yourself at least twice a week on the same scale, check your temperature regularly with a thermometer, and record all the above data in the orientation notebook (Panader-Torres et al., 2020).

It is necessary to go to the doctor when you have diarrhea that does not disappear or presents with blood, intense nausea, vomiting or poor appetite, inability to eat and drink, extreme weakness, pain in the abdomen, difficulty breathing, fever, chills or sweating, may be signs of infection, a new rash or blisters, bleeding in sputum, urine, stool or blowing the nose (Hernandez et al., 2020).

International studies evidence according to Penagos et al., (2020), indicates that self-care measures improved efficacy and functional status at a high level, which in turn reduced the side effects of chemotherapy to a certain level.

Likewise, Nunes et al. (2020) pointed out that the patients only used the guidelines that were most convenient for their daily life and others maintained doubts and insecurity at home. It is suggested that the needs of patients and their environment should be identified in order to provide sufficient information to make self-care at home sustainable. Balbis et al., (2020), indicate that social influence had to do with the behavior of patients in relation to their self-care and the incidence and evolution of cancer.

Torres-Reyes et al., (2019), in their study showed that the greater the self-care, the better the quality of life of cancer patients. Likewise, Martell and Suarez (2017) indicated that the nursing team strives to help patients reduce their anxiety and at the same time increase their perception of support, which favors a positive response to treatment. Leppla et al., (2016), that educational intervention has succeeded in delaying oral mucositis. A result that can contribute to plan broader educational actions. In addition, Silva et al., (2015) refers that self-care of patients who received chemotherapy / radiotherapy, found that these people adopt strategies such as rest, relaxation, listening to soft music, had a good family support network, good disease management and used alternative medicines to combat the side effects of treatment.

For Alania (2021), indicates that the transfer and storage of knowledge with self-care in patients transplanted with hematopoietic progenitor cells favors their well-being. Gonzalez and Jiménez (2016), argues that the contribution of educational knowledge of the nurse progresses the common knowledge encouraging in the issue of donation of tissues and organs, because this empowers by the future decision of donations. In this sense, Espinoza (2018), states that the level of knowledge and self-care practices favors well-being and comfort in the course of the disease.

For Salazar (2015), indicates that physical self-care before during and after treatment with chemotherapy, giving priority to knowledge in the physical dimension and in a lower percentage the psychological and social dimension. On the other hand, Baca and Velásquez (2015) indicate that knowledge about self-care influences their daily practice.

Finally, the importance of self-care has the purpose of preventing disease, strengthening or restoring health; it responds to the survival capacity of the person and to the usual practices of the culture to which he/she belongs. People require support strategies that strengthen their motivation, improve their knowledge and skills, to participate in the care of their health and become an active patient, who manages to establish an adequate relationship with the health team; this concept is currently recognized as an important axis in the new chronic disease management model (Ayala de Calvo and Sepulveda, 2016; Carreras, 2016). Therefore, measuring self-care is essential in daily life to sustain healthy habits in people to favor their quality of life. Likewise, the oncology patient urges training and continuous care to avoid risk situations or complications in their health condition.

### 2. Materials and methods

Quantitative approach study, basic research type of descriptive level, non-experimental cross-sectional design (Hernández et al, 2014; Hernández & Mendoza, 2018). The technique was the survey, instrument was elaborated referencing to the theoretical bases included in the study. It includes two dimensions of self-care: knowledge and skills, at the same time the knowledge dimension has five sub dimensions and the life skills dimension has four sub dimensions. It has 30 items rated on a Likert scale. It consists of 30 questions that will be answered by the study population with a Likert scale, where high =3, medium= 2 and low=1 correspond to the knowledge dimension and much=3, little=2 and nothing=1 to the daily living skills dimension, finally the self-care variable had a score between 60 to 90 points, its self-care is adequate and less than 60 points its self-care is inadequate. It was validated by expert judgment (6 expert judges) with the binominal test with a probability of 85% and for reliability the pilot test was given (10) patients, obtaining a Cronbach's alpha of 0.8.

### 3. Results

**Table 1.** Self-care status in the patient undergoing hematopoietic progenitor cell transplantation.

Self-care	Frequency	Percentage
Adequate	108	100,0
Total	108	100

It was observed that 100% of the patients who underwent hematopoietic progenitor cell transplantation had self-care.

**Table 2.** Level of knowledge of self-care in patients undergoing hematopoietic progenitor cell transplantation

Level	Knowledge		Skills	
	Frequency	Percentage	Frequency	Percentage
Low	0	,0	0	,1
Regular	6	5,6	14	13,1
High	102	94,4	94	87,1
Total	108	100,0	108	100,1

It was observed that 94.4% of the patients who underwent hematopoietic progenitor cell transplantation had a high level of knowledge of self-care and 5.6% a regular level. In relation to self-care skills, 87.1% had a high level, while 13.1% had a fair level.

#### 4. Discussion y conclusions

The findings obtained on the level of self-care of patients undergoing hematopoietic progenitor transplantation were found that 100% have an adequate level of self-care, these results are similar to the study of Huaman-Carhuas et al., (2021), indicates that the increased after the educational intervention by 71.7% knowledge. Concluding that self-care measures improved efficacy and functional status at a high level, which in turn reduced the side effects of chemotherapy to a certain level.

Thus, self-care is an activity or action carried out by the person to make decisions regarding his or her health, which are assumed by healthy or sick people and serve to modify risk attitudes that may arise from the environment or from within the person. According to Orem, the assessment of self-care from the nursing perspective is to motivate the patient to become aware of his or her self-care in order to improve or maintain his or her health. The nursing professional, in turn, must have adequate cognitive competencies, skills and attitudes to help the patient to create levels of commitment in their self-care (Marcos and Tizón, 2013; Jimenez and Meneses, 2015). Training or coaching in oncology services is to strengthen self-care as a positive experience in the treatment process from the time the patient is admitted for stem cell collection in the case of the autologous and the preparation that the allogeneic patient must have who receives stem cells from a donor, each with different preparation processes, but with a common purpose.

The actions planned by the nurse as a caregiver include orienting and explaining to the patient the changes that may occur and teaches how to maintain their own self-care, upon discharge the patient is given a logbook for better control noting their temperature, weight changes, signs and symptoms of alarm, management of medications, also within the content are the guidelines of what the patient should and should not do, in terms of food, body hygiene, oral, skin care, hygiene at home, when to go for emergency, as well as providing the annex numbers of the service for any consultation, and that they should come without fail to their appointments with the doctor (Carreras, 2016; Diaz and Palomino, 2017; Lima and Bernardino, 2014).

In relation to the level of knowledge of the patients about their self-care, they obtained a 94.4% high level of knowledge. This result differs with Alania (2021), who found 70% of knowledge to be moderately adequate. It is concluded that there is a relationship between the transfer and storage of knowledge and self-care in hematopoietic progenitor cell transplanted patients. On the other hand, Gonzalez and Jimenez (2016), indicate that the contribution of knowledge is regular despite receiving educational sessions.

It is essential that in the care of the oncology patient to meet the basic needs of food, personal hygiene, skin care, home hygiene, among others. Also, adherence to schedules and taking medications, signs and symptoms of alarm, among others. For Orem argues that the behaviors assumed by the patient and family is transcendent for the quality and quantity of care required to maintain life, identifying real and/or potential problems (Espinoza, 2018).

Regarding the level of self-care skills, 87% adequate was obtained referring that the person has a categorical concept to protect their image and body and results as an effect of conscious and continuous care. The results coincide with Diaz et al., (2017), indicates that the information handled by the patient on the practice of self-care in patients with acute lymphatic leukemia undergoing treatment with chemotherapy is mostly medium with 56.7%; according to its dimension social self-care is medium with 66.7%, as for the prevention of hygiene measures is regular with 50%.

Martell et al., (2017), indicates that greater daily living skills improve the patient's recovery when undergoing hematopoietic progenitor transplantation.

Finally, self-care requires knowledge and daily living skills for patients to perform actions taken such as hand washing, skin care, oral hygiene, and social and interpersonal relationships (Naranjo et al., 2017; Nunes et al., 2020). Also, rest, relaxation activities, assuming coping strategies to reduce stress and anxiety. The support of the nursing system who manage self-care so that the patient and family can combat side effects was also a factor found as a promoter of self-care and well-being (Silvia, 2015; Salazar et al., 2013; Prado et al., 2014).

Likewise, Ayala de Calvo et al., (2016) indicates that nursing care should take into account the particular needs of all patients in order to teach them and their families how to provide effective self-care, to solve health problems and to meet the patient's care needs (Mastrapa and Gibert, 2016). Thus also, Panader-Torres et al., (2020) indicates that the implementation of these programs is an effective method to have a better quality of life; in addition, the fact that the education is provided by the patients themselves, facilitates the understanding of the disease by speaking through their own experience. For Martín-Hernández et al. (2021), he argues that the various face-to-face or virtual educational modalities for self-care can be easily accessible to maintain permanent contact to prevent complications. Therefore, nurses perceive it necessary to keep updated in their scientific preparation to provide guidance on self-care.

## References

- Alania, M. 2021. Gestión de Conocimiento y Autocuidado en Pacientes Trasplantados de Células Progenitoras Hematopoyéticas, INEN – 2021. [Thesis] Lima: Universidad César Vallejo; 2021. [https://repositorio.ucv.edu.pe/bitstream/handle/20.500.12692/72343/Alania\\_CM-SD.pdf?sequence=1&isAllowed=y](https://repositorio.ucv.edu.pe/bitstream/handle/20.500.12692/72343/Alania_CM-SD.pdf?sequence=1&isAllowed=y)
- Ayala de Calvo, L. E., and Sepulveda-Carrillo, G. J. 2016. Necesidades de cuidado de pacientes con cáncer en tratamiento ambulatorio. *Enfermería Global*, 16(1), 353–383. <https://doi.org/10.6018/eglobal.16.1.231681>
- Baca K. y Velásquez C. 2015. Nivel de Conocimiento y Autocuidado del Adulto que Recibe Quimioterapia Ambulatoria. Hospital De Alta Complejidad Virgen De La Puerta. [https://repositorio.upao.edu.pe/bitstream/20.500.12759/1672/1/RE\\_ENFER\\_N.CONOCIMIENTO-AUTOCUIDADO-ADULTO-QUIMIOT\\_PPT.pdf](https://repositorio.upao.edu.pe/bitstream/20.500.12759/1672/1/RE_ENFER_N.CONOCIMIENTO-AUTOCUIDADO-ADULTO-QUIMIOT_PPT.pdf)
- Balbis, M., Villar, N., & Reyes, C. 2020. Social perspective of the self-care in the patients with mouth cancer. *Humanidades Médicas*, 20(1), 167-188. [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S1727-81202020000100167&lng=es&tng=es](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1727-81202020000100167&lng=es&tng=es).
- Carreras E. 2016. Guía del trasplante de médula ósea para el paciente [en línea]. España: Fundación Josep Carreras; [https://www.fcarreras.org/guia-del-trasplante-de-medula-osea\\_1388727.pdf](https://www.fcarreras.org/guia-del-trasplante-de-medula-osea_1388727.pdf)
- Díaz, D. y Palomino, R. 2017. Nivel de información práctica y su relación con la capacidad de autocuidado en pacientes con leucemia linfática sometidos a quimioterapia en el Instituto Nacional de Enfermedades Neoplásicas 2017. <http://hdl.handle.net/20.500.12952/5533>
- Espinoza L. 2018. Conocimientos de Efectos Adversos de la Quimioterapia y Prácticas de Autocuidado, en Mujeres con Cáncer de Mama. <https://dspace.unitru.edu.pe/bitstream/handle/UNITRU/11659/2E581.pdf?sequence=1&isAllowed=y>
- Gonzales, R., Jiménez K. 2016. Intervención educativa de enfermería y conocimientos sobre donación de órganos y tejidos. Adultos de 20 a 40 años. Hospital Nacional Lima. *Rev enferm Herediana*. 9(2):118-126.2016. <https://faenf.cayetano.edu.pe/images/2017/revistavol9/8.pdf>



- Hernández, R., Fernández, C. and Baptista, M. 2014. Metodología de la investigación. Editorial McGraw Hill Education.
- Hernández-Sampieri, R. & Mendoza, C. 2018. Metodología de la investigación. Las rutas cuantitativa, cualitativa y mixta, Ciudad de México, México: Editorial Mc Graw Hill Education, Año de edición: 2018, ISBN: 978-1-4562-6096-5, 714 p.
- Hernández Montaña, A., & González Tovar, J. 2022. Modelo explicativo del autocuidado, la regulación emocional y el burnout en psicólogas en condición de aislamiento por COVID-19. *Acta Colombiana De Psicología*, 25(2), 90–103. <https://doi.org/10.14718/ACP.2022.25.2.6>
- Huaman-Carhuas, L., and Gutiérrez-Crespo, F. 2021. Impacto de la intervención de enfermería en el autocuidado de pacientes con enfermedad renal crónica avanzada. *Enfermería Nefrológica*, 24(1), 68-76. <https://dx.doi.org/10.37551/s2254-28842021007>.
- INEN. (2022). Instituto Nacional de Enfermedades Neoplásicas. Manual de enfermería Oncológica trasplante de progenitores hemapoyético, 2022. <https://portal.inen.sld.pe/wp-content/uploads/2022/09/RJ-300-2022-J-ENEN.pdf>
- Jiménez P. y Meneses M. 2015. Introducción a la Enfermería. Lima: Universidad César Vallejo; 2015.
- Leppla, L., De Geest, S., Fierz, K., Deschler-Baier, B., & Koller, A. 2016. An oral care self-management support protocol (OrCaSS) to reduce oral mucositis in hospitalized patients with acute myeloid leukemia and allogeneic hematopoietic stem cell transplantation: a randomized controlled pilot study. *Supportive care in cancer : official journal of the Multinational Association of Supportive Care in Cancer*, 24(2), 773–782. <https://doi.org/10.1007/s00520-015-2843-1>
- Lima, K. y Bernardino, E. 2014. Nursing care in a hematopoietic stem cells transplantation unit. *Texto & Contexto - Enfermagem*, pp. 845-853. <https://doi.org/10.1590/0104-07072014000440013>.
- López González, M., Rengifo Arias, D., & Mejía Arcila, A. 2022. Nivel de autocuidado, conocimientos y recursos en personas con insuficiencia renal crónica. *Revista Cubana de Enfermería*, 38(3). <https://revenfermeria.sld.cu/index.php/enf/article/view/4714>
- Mastrapa, Y., & Gibert Lamadrid, M. 2016. Nurse-patient relationship: an approach from the interpersonal relationships theories. *Revista Cubana de Enfermería*, 32(4). <https://revenfermeria.sld.cu/index.php/enf/article/view/976/215>
- Martell, L., Leiva, Y., & Suárez, E. 2017. Nursing care in the transplant of hematopoyetic progenitors. *Revista Cubana de Hematología, Inmunología y Hemoterapia*, 33(4), 25-34. [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S0864-02892017000400004&lng=es&tlng=es](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S0864-02892017000400004&lng=es&tlng=es).
- Marcos, M., & Tizón, E. 2013. Application of Dorothea Orem's model in a case of a person with neoplastic pain. *Gerokomos*, 24(4), 168-177. <https://dx.doi.org/10.4321/S1134-928X2013000400005>
- Martín- Hernández, M., Mora, Y., & Torres Esperón, J. 2020. Self- care guidelines for mastectomized patients with breast cancer. *Medicentro Electrónica*, 24(4), 805-818. [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S1029-30432020000400805&lng=es&tlng=es](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1029-30432020000400805&lng=es&tlng=es).
- Naranjo, Y., Concepción, J., & Rodríguez, M. 2017. The self-care deficit nursing theory: Dorothea Elizabeth Orem. *Gaceta Médica Espirituana*, 19(3), 89-100. [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S1608-89212017000300009](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1608-89212017000300009).
- Nunes S., Montesinos M., Pedrosa V., Tolfo F, Bick M., Siqueira H. 2020. Adherencia a las directrices de la enfermera para el cuidado en el hogar de la trasplatación de médula ósea desde la perspectiva del ecosistema. *Texto & Contexto - Enfermagem* <https://doi.org/10.1590/1980-265X-TCE-2018-0310>.
- Oliveira, J., Coutinho, M, Do Nascimento, M, Dázio, E., Terra, F. D. S., Bavaresco, M., & Fava, S. M. C. L. 2020. Autocuidado y cuidado de las personas con cáncer y dispositivos médicos

- de alimentación. *Salud & Sociedad*, 11, e3650. <https://doi.org/10.22199/issn.0718-7475-2020-0001>
- Panader-Torres A., Cerinza-León, K., Echavarría-Arévalo, X., Pacheco-Hernández, J., Hernández-Zambrano, S. 2020. Experiencias de educación inter pares para favorecer el autocuidado del paciente oncológico. <https://doi.org/10.21676/2389783X.3234>
- PAHO. 2021. Día Mundial contra el Cáncer 2021: Yo Soy y voy a. <https://www.paho.org/es/campanas/dia-mundial-contra-cancer-2021-yo-soy-y-voy>
- PAHO. 2022. Cáncer de mama. Disponible en: <https://www.paho.org/es/temas/cancer-mama>
- Penagos Castro R., Vargas-Escobar L. 2020. Efectividad de una intervención de enfermería para modificar la autoeficacia y la sobrecarga del cuidador del paciente hemato-oncológico. *Revista Cuidarte*. 2020; 11(2): e867. <http://dx.doi.org/10.15649/cuidarte.867>
- Prado, L., González, M., Paz, N., & Romero, K. 2014. The theory Deficit of selfcare: Dorothea Orem, starting-point for quality in health care. *Revista Médica Electrónica*, 36(6), 835-845. [http://scielo.sld.cu/scielo.php?script=sci\\_arttext&pid=S1684-18242014000600004&lng=es&tlng=es](http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1684-18242014000600004&lng=es&tlng=es).
- Salazar C. 2015. Conocimientos para el autocuidado de personas con cáncer con tratamiento de quimioterapia del hospital II Essalud Cajamarca 2015. Cajamarca: Universidad de Cajamarca. <https://repositorio.unc.edu.pe/handle/20.500.14074/983>
- Salazar, M., Regalado-Rafael, R., Navarro, J., Montanez, D., Abugattas, J., & Vidaurre, T. 2013. The role of the National Institute of Neoplastic Diseases in the control of cancer in Peru. *Revista Peruana de Medicina Experimental y Salud Publica*, 30(1), 105-112. [http://www.scielo.org.pe/scielo.php?script=sci\\_arttext&pid=S1726-46342013000100020&lng=es&tlng=es](http://www.scielo.org.pe/scielo.php?script=sci_arttext&pid=S1726-46342013000100020&lng=es&tlng=es).
- Silva, J., and Pontífice P. 2015. Strategies for self-care of persons with cancer undergoing chemotherapy / radiotherapy and its relationship with the comfort. *Enfermería Global*, 14(37), 372-383. [http://scielo.isciii.es/scielo.php?script=sci\\_arttext&pid=S1695-61412015000100017&lng=es&tlng=es](http://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S1695-61412015000100017&lng=es&tlng=es).
- Torres-Reyes, A., Tenahua-Quitl, I., García-López, M. A., Pérez-Noriega, E., Cordero-Sánchez, C., Ramos-Durán, N., & Morales-Castillo, F. A. 2019. Relationship of quality of life and self-care in adult patients with cancer. *Journal Health NPEPS*, 4(1), 16–30. <https://periodicos.unemat.br/index.php/jhnpeps/article/view/3123>