

Prevention of Covid-19 Through Dorothea Orem'S Self-Care Theory

Tania Catalina Zhizhpon-Quinde¹, Isabel Cristina Mesa-Cano^{1,2}, Andrés Alexis Ramírez-Coronel^{1,2,3}

¹Master's Degree in Postgraduate Care Management of the Catholic University of Cuenca, Ecuador.

²Nursing Career of the Catholic University of Cuenca, Ecuador.

³Laboratory of Psychometry, Comparative Psychology and Ethology of the Center for Research, Innovation and Technology Transfer (CIITT) of the Catholic University of Cuenca, Ecuador.

*Correspondence: Mesa Cano Isabel Cristina

Affiliation: Master in Postgraduate Care Management, Universidad Catolica de Cuenca, Ecuador.

Abstract:- The COVID-19 pandemic caused an erosion of health systems worldwide, which is why it should be evidenced that nursing can facilitate through assessment, planning, implementation and educational interventions easy ways to act on self-care to prevent Covid-19 aimed at the individual, family and community, reducing the number of cases whose purpose is to strengthen or restore health and prevent disease. The aim of the study was to carry out an educational intervention on the prevention of COVID-19 through the development of nursing actions based on Dorothea Orem's self-care theory. A quantitative descriptive cross-sectional study was carried out with a quasi-experimental design. With a sample of 255 participants. A sociodemographic survey, confinement and a behavioral self-assessment instrument for self-care in the face of the COVID-19 health emergency were used. After the evaluation of the educational intervention, it was determined that 93.7% of the individuals reported adequate self-care for the prevention of covid-19. Concluding that the educational intervention is a strategy that guarantees a good understanding of the self-care process.

Keywords:- *Self-Care, COVID-19, Educational Intervention, Nursing Action.*

I. INTRODUCTION

In mid-March 2020 the World Health Organization (WHO) declared the disease as a pandemic, it was called Corona Virus Disease 2019 known as (COVID-19) (1, 2,3). It was first identified in December in Wuhan, China due to an increase of pneumonia cases called severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) (4,5).

It became evident that there was an accelerated increase of Covid-19 in several countries (6), causing a socioeconomic collapse and a health crisis due to the increase in morbidity and mortality (7,8,9).

In February of the same year, the first case was identified in Ecuador, with a progressive and accelerated

increase of positive cases, and isolation measures were activated as a biosecurity protocol (10, 11,12).

Public health measures for the mitigation and containment of the pandemic require a great effort for intersectoral actions in education, communication, health and society, aimed at modifying beliefs, attitudes and behaviors that allow the modification and adoption of new measures of responsible self-care for personal and community well-being (13,14).

Currently, the situation that is going through the crisis caused by the COVID-19 pandemic, caused an attrition in the health systems in the world, which is why it should be evidenced that nursing can facilitate through assessment, planning, implementation and educational interventions easy ways to act on self-care to prevent Covid-19 directed to the person, family and community, reducing the number of cases whose purpose is to strengthen or restore health and prevent disease (15).

It is essential to work in an objective manner with the purpose that this new challenge should be taken advantage of for the awareness and application of strategies for personal, family and community self-care and serve as a guide for future generations (16).

The importance of the research is to know the following questions; what is the care of the population during the health emergency, what can nursing contribute in the self-care for the prevention of COVID-19

Health has several definitions, it can be defined as the well-being that the individual has of his condition with the environment, this contributes to the physical, social and mental integrity, however, the absence of these dimensions means deterioration of the same (17, 18,19).

The role of health has emerged from several disciplines, one of which is nursing, which was born with the individual and has been linked since its inception with the art of caring for the person, family and community, playing a key role, in which components related to health

problems should be examined and the self-care deficit should be known, therefore planning and interventions are carried out with the aim of promoting self-care for the person's own well-being (18,20).

Dorothea Orem's self-care deficit theory supports us to continue acquiring knowledge that helps us to improve daily practices through description and explanation; it even helps nursing professionals to exercise activities with greater autonomy, in educational and research aspects (18).

Self-care is oriented to the management, measures and actions taken by individuals for their own well-being with activities aimed at maintaining and improving their health, without the supervision of health personnel, in such a way as to prevent diseases, improving their individual, family and community quality of life (21,22,23).

In itself, a deficit of self-care is currently evident with an increase in hospital cases, therefore, the actions of nursing within this theory play an indispensable role, either by educating and sensitizing the person, family or community, or by promoting self-care and complying with the biosecurity measures for the prevention of this disease.

The link with health promotion is based on three components that have been made known by the Pan American Health Organization (PAHO), among them we have self-care taking into account the actions that people perform for the benefit of their own health, the care that is performed by other people according to the situation in which they are currently living, and the healthy environment so that the environmental conditions favor health, as for lifestyles it is linked to a set of decisions that people make to improve their health (24).

The behaviors generated for health that should be considered is communication; due to the fact that the concern about the health emergency that we live today, is one of the reasons that can lead us to have episodes of stress or anxiety, likewise one of the main actions that we can carry out is to share ideas, thoughts and concerns with family or friends in the search for integral wellbeing and thus have a good human development, to promote health and encourage self-care (25, 26).

It can be pointed out that the perception of reality maintains a primordial guideline in this approach, fundamentally to keep oneself informed of the statistical data of the current situation of the country and in turn implement actions according to their reality on individual self-care (26).

On the other hand, self-care should be based on basic needs, which ensure the maintenance of healthy living habits such as adequate sleep, a balanced diet and physical activity can be performed at home with the family as a good alternative to help reduce stress (27).

In short, the concern about the Covid-19 pandemic has led to the publication of several articles on the subject,

however, there are not enough articles on self-care applied through an educational intervention, which motivated me to write the article presented here.

The objective of this article is to carry out an educational intervention on the prevention of COVID-19 through the development of nursing actions based on Dorothea Orem's self-care theory.

At the same time, sociodemographic variables and the levels of self-care reported by individuals will be identified, self-care will be promoted and the impact of the educational intervention will be evaluated.

II. METHODOLOGY

An investigation was conducted on the prevention of Covid-19 through Dorothea Orem's self-care theory in the parish of Chumblin, San Fernando canton, Azuay. It was a quantitative, descriptive, cross-sectional study with a quasi-experimental design. With a sample of 255 participants.

Certain inclusion criteria were taken into account (persons of legal age who wished to participate in the research, having signed an informed consent form and residing in the parish) and exclusion criteria (minors, with some type of visual, hearing or physical disability).

The instruments used were questionnaires with sociodemographic and confinement variables and a Behavioral Self-Assessment Instrument for Care in the Face of Health Emergency COVID-19, an ad hoc tool created by Arias (28) to assess your behavior in the face of self-protection measures to mitigate the spread of Covid-19 in the Latin American population.

This instrument presents adequate psychometric properties in the Latin American population, with a high internal consistency ($\alpha=0.84$). It consists of 12 questions measured on a Likert scale from 1 to 7 where 1 indicates never, 2 rarely, 3 sometimes, 4 sometimes, 5 frequently, 6 almost always and 7 always. In its interpretation, a score of 12 to 44 indicates that I am not taking adequate care of myself, from 45 to 60 I am taking care of myself, but not enough, and from 61 to 84 I am taking adequate care of myself (28).

The study was structured in 3 stages:

1.) Pre-test

Home visits were made for the application of the pre-test, which consisted of collecting sociodemographic and confinement variables and providing the Behavioral Self-Assessment Questionnaire for Care in the Face of Health Emergency COVID-19. In the data of each subject, only an identifier code of subject number was obtained, but in no case were names, surnames, ID number, e-mail, therefore, the subjects could not be identified.

2.) Intervention Educative

An online educational intervention (ZOOM) on self-care in the event of a health emergency was carried out.

3.) Post-test evaluation

Once the educational intervention was completed, the post-test was applied taking into account the respective identification coding of each participant who previously agreed to participate in the study.

The role of the nurse in programs aimed at the intervention and prevention of diseases of the individual, family and community is of significant importance in order to promote self-care for the health and well-being of the population.

The present study intends to know what care has been adopted by the population to prevent Covid-19 in the parish of Chumblin, Canton San Fernando. To achieve this research we use previously validated instruments that will be applied to the study population, which will allow us to obtain real data from the perspective of each participant. It does not attempt against the integrity of any participant, the information collected will be kept confidential, being for the exclusive use of the research, which is based on ethical principles of Autonomy, Beneficence, Non-maleficence and Justice. The respect to accept or not the participation in the research will be validated with the signature of the informed consent. Under no circumstances will participants receive financial or any other type of remuneration, and they are free to leave the study at any time they wish.

A descriptive analysis was performed using absolute and relative frequencies and measures of central tendency for both the pre-test and post-test. Subsequently, a normality test was performed using Shapiro Wilk, assuming normality and homoscedasticity. Therefore, a t-test for related samples was applied to evaluate the impact of the educational intervention on self-care in the face of the health emergency in the adult population of the Chumblin parish of San Fernando canton. Statistical analyses were performed using the statistical program infostat.

III. RESULTS

To identify sociodemographic variables and the levels of self-care reported by the individuals in the study sample through the application of the COVID-19 self-care instrument.

Sociodemographic characterization and level of self-care

Table 1 shows that of the 255 participants in the study population, the average age was 41 years with a minimum of 18 years and a maximum of 89 years, 63% were female, 64% had completed primary school, 66.3% were married, 42% were farmers and the main source of income in the locality.

Table 1.- Distribution of the study population according to sociodemographic variables.

Characteristics	N	Minimum	Maximum	Mean	Deviation
Age	255	18	89	41,56	16,385
Number of people with whom you live	255	0	10	3,45	1,499
				f	%
Gender	Female			163	63,9%
	Male			92	36,1%
Schooling level	Incomplete elementary school			4	1,6%
	Primary complete			164	64,3%
	Secondary			58	22,7%
	High school			29	11,4%
	None			0	0,0%
Marital status	Single			64	25,1%
	Married			169	66,3%
	Divorced			2	0,8%
	Widowed			9	3,5%
	Unmarried			11	4,3%
Occupation	Construction			22	8,6%
	Livestock			107	42,0%
	Agriculture			18	7,1%
	Homemaker			32	12,5%
	Other			76	29,8%

Assessment of self-care before the educational intervention.

Table 2 describes the evaluation of the pretest of the behavior, in relation to the protective measures taken by the population in the face of the health emergency, where it is determined that 78% take adequate care of themselves, 17% refer that they take care of themselves, but not enough, with a minimum but important percentage of 4.7% who do not take adequate care of themselves to prevent the infection of Covid-19. The level of self-care has a significant correlation at the 0.01 level (bilateral) with age and there is a significant correlation at the 0.05 level (bilateral) with level of schooling and marital status (Table 3).

Table 2. Distribution of self-care levels reported by individuals in the study sample.

PRETEST	Levels of self-care	f	%
	I am not taking proper care of myself	12	4,7%
I take care of myself, but not enough	44	17,3%	
I am taking care of myself adequately	199	78,0%	

Distribution of the correlation of the level of self-care (pretest), age, gender, level of schooling, marital status, occupation.

Correlations						
		Age	Gender	Schooling	Marital status	Occupation
PRETEST	Pearson correlation	-,377**	-,098	,152*	-,147*	,029
	Sig. (bilateral)	,000	,118	,015	,019	,640
	N	255	255	255	255	255

** . Correlation is significant at the 0.01 level (bilateral).
 * . Correlation is significant at the 0.05 level (bilateral).

Objective 2. Educational intervention to promote self-care in the face of health emergencies.

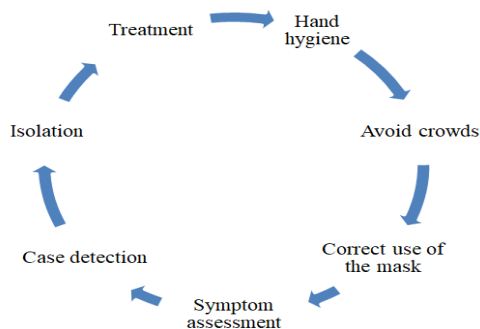


Figure 1: Behavioral map of COVID-19 (29)

The intervention is based on these areas of education to contribute to the prevention of the virus in its different phases, especially in the homes of the community studied. Among them are hand washing and use of alcohol gel, contact with the face, isolation, crowds, correct use of masks, assessment of symptoms. This is why it is evident through education, necessary information on proper hand hygiene, the correct use of the mask in order to reduce Covid-19 disease. The planning and execution of the educational intervention is described in Table 3.

Table 4. Planning and execution of the educational intervention

Objective	Content	Methodology	Teaching assistants	Bibliography
Educational intervention to promote self-care in the face of health emergencies.	Covid-19. Pandemic. Self-care Biosecurity measures: - Hand higiene - Correct use of the mask - Isolation - Social distancing	Explanatory	Audiovisual Materials	(1 - 20)

Objective 3 To evaluate the impact of the educational intervention.

After the educational intervention was carried out, the participants were evaluated to determine the level of self-care of the study population, determining that 93.7% of the individuals reported adequate care (Table 5). It was determined that the level of self-care has a significant correlation at the 0.01 level (bilateral) with occupation (Table 6).

Table 5. Evaluation of the impact of the self-care educational intervention in the study population.

Evaluation	I am not taking proper care of myself		I take care of myself, but not enough		I am taking proper care of myself	
	f	%	f	%	f	%
PRETEST	12	4,7%	44	17,3%	199	78,0%
POSTEST	0	0,0%	16	6,3%	239	93,7%

Table 6. Correlation distribution of self-care level (post-test), age, gender, schooling level, marital status, occupation.

Correlations						
		Age	Genre	Level of education	Marital status	Occupation
Pos test	Pearson correlation	,081	-,041	-,068	-,086	-,168**
	Sig. (bilateral)	,197	,511	,282	,173	,007
	N	255	255	255	255	255

** . The correlation is significant at the 0.01 level (bilateral).

IV. DISCUSSION

At the end of 2019, a new virus belonging to the coronavirus family called COVID-19 was identified in China. Being this one of rapid expansion and causing serious effects worldwide, on March 11, 2020, the WHO declared it as a pandemic (30).

In Ecuador, the first case was registered on February 29, 2020 by the Ministry of Public Health. Since then, infections have increased rapidly, so mandatory biosecurity measures were implemented for prevention, including preventive and mandatory social isolation, the use of masks, hand hygiene since March 13, 2020, being the one with the greatest social and economic impact (31).

This pandemic has generated diverse effects on the health of the population, there are vaccines in development to stop the pandemic, however, there are no effective treatments, so isolation was a drastic measure taken by most governments worldwide, and a high economic, social and health impact is estimated, which further develops the uncertainty increasing fear, anxiety and stress in people (30).

Latin America had about 3 months to prepare itself in terms of organization, equipment in health systems, education and training of both health professionals and the population in general before the arrival of COVID-19, unlike the rest of the world, however, the response was not efficient, so the number of infected people increased rapidly, with high mortality and serious social and economic difficulties (32).

In this study, a brief instrument was used to determine self-care in the population, the results obtained in the research before the educational intervention was that 78.0% of the population had an adequate self-care, taking the necessary measures to stop the spread of COVID-19, The results coincide with similar studies such as that of Galindo (33) who determined that 66-80% of the population complied with the self-care guidelines, and in the same way, the study conducted by Flores (34) determined that 70% of the inhabitants surveyed had a high level of knowledge about COVID-19 prevention. However, there are differences in the study conducted by Ruiz (35) in the population of Peru, where self-care behaviors regarding the prevention of COVID-19 infection were effective in only 18.4%.

It was determined that the educational intervention had a positive impact on self-care education, this being a main component for the population to understand the importance of prevention measures to stop the COVID-19 pandemic, which allowed the population to take the necessary preventive measures to avoid exposure to the pathogen.

V. CONCLUSIONS

The educational intervention is a useful tool to address future assessments and interventions to promote healthy behaviors. Likewise, this tool can address the self-care needs of a specific population during a scalable situation.

It is also worth mentioning that a good educational level determines a better perception of self-care, therefore, the improvement of this structural factor has a significant impact on the perception of well-being, enhancing their resources to engage in self-care activities to stop the spread of the pathogen.

This study was limited by several factors. Despite the heterogeneity of the local sample, it may not be representative of the general population of the country that is being affected differently in the regions nationwide by the COVID-19 pandemic. Therefore, these results should be replicated in other localities with heterogeneous samples. Temporal stability of self-care was not assessed in this study. Therefore, it would be useful to assess the temporal consistency of the scale in future interventions.

Despite these limitations, some important strengths are worth mentioning; assessment of self-care activities in the general population could help address future more in-depth assessments and more targeted interventions for specific groups that may be at risk of developing unhealthy behaviors and, therefore, putting health status at risk.

Research on self-care suggests that individuals can delay or prevent many exposure-related health problems, where an unhealthy lifestyle or lack of self-care is well established as a key causal agent.

Similarly, the self-care scale can be used as a tool to explore self-care activities during isolation experiences in order to prevent future health complications and identify protective factors during this complex situation.

REFERENCES

- [1]. Buss P, Tobar S. COVID-19 and opportunities for international cooperation in health. *Public Health Notebook*. 2020 [Cited: January 08, 2021]; 36 (4): 1678-1682. Available at:
- [2]. <https://www.scielosp.org/article/csp/2020.v36n4/e00066920/>
- [3]. DOI: <https://doi.org/10.1590/0102-311X00066920>
- [4]. Lau H, Khosrawipour V, Kocbach P, Mikolajczyk A, Ichii H, Schubert J. Internationally missed cases of COVID-19. *J Microbiol Immunol Infect*. 2020 [Cited: January 08, 2021]; 53 (3): 454-458. Available at:
- [5]. <https://pubmed.ncbi.nlm.nih.gov/32205091/> DOI: 10.1016/j.jmii.2020.03.013
- [6]. Serra-Valdés MA. Acute respiratory infection by COVID-19: A clear threat. *Rev Habanera Ciencias Médicas*. 2020 [Cited: January 09, 2021]; 19 (1): 1-5. Available at: http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1729-519X2020000100001
- [7]. Palacios C, Santos E, Velázquez-Cervantes M, León M. COVID-19, a Global Public Health Emergency. *Rev Clinica España*. 2020 [Cited: January 08, 2021]; 154 (5): 175-177. Available at:
- [8]. <https://www.sciencedirect.com/science/article/pii/S0014256520300928>

- [9]. DOI: <https://doi.org/10.1016/j.rce.2020.03.001>
- [10]. Rodríguez-Morales AJ, Sánchez-Duque JA, Hernández- Botero S, Pérez-Díaz CE, Villamil-Gómez WE, Méndez C. Preparedness and control of coronavirus disease 2019 (COVID-19) in Latin America. *Acta Medica Peru.* 2020 [Cited: January 09, 2021]; 37 (1): 3-7. Available at:
- [11]. http://www.scielo.org.pe/scielo.php?script=sci_arttext&pid=S1728-59172020000100003 DOI: <http://dx.doi.org/10.35663/amp.2020.371.909>
- [12]. Alvarez RP, Harris PR. COVID-19 in Latin America: Challenges and opportunities. *Rev. Chil Pediatrics.* 2020 [Cited: January 08, 2021]; 91 (2): 179-182. Available at: https://scielo.conicyt.cl/scielo.php?script=sci_arttext&pid=S0370-41062020000200179 DOI: <http://dx.doi.org/10.32641/rchped.vi91i2.2157>
- [13]. Trilla A. One world, one health: the epidemic due to the new coronavirus COVID-19. *Medicina Clinica Bar.* 2020 [Cited: January 08, 2021]; 154 (5): 175-177 Available from: <https://www.elsevier.es/es-revista-medicina-clinica-2-avance-resumen-un-mundo-una-salud-epidemia-S002577532030141X>
- [14]. WHO World Health Organization. WHO Timeline for Action, 2020 [Cited: January 08, 2021]. Available from:
- [15]. <https://www.who.int/es/news-room/detail/27-04-2020-who-timeline---covid-19>
- [16]. Jin L, Zhao Y, Tao M, Yang Y, Wang X. Temporal, geographic, and population distribution of novel coronavirus disease (COVI-19). *Rev Clinica Esp.* 2020. [Cited: April 27, 2020] Available at: <http://www.sciencedirect.com/science/article/pii/S0014256520301077>
- [17]. (WHO) World Health Organization. Opening address by WHO Director-General press conference on COVID-19. 2020 [Cited: March 11, 2020] Available from:
- [18]. <https://www.who.int/es/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>
- [19]. Andramuño C. Ecuador confirms its first case of Coronavirus. *El Universo.* 2020 [Cited: March 11, 2020] Available from:
- [20]. <https://www.eluniverso.com/noticias/2020/02/29/nota/7760757/ecuador-confirma-primer-caso-coronavirus>
- [21]. COVID-19 Ecuador Situation Report. National Emergency Operations Committee. 2020 [Cited: November 13, 2020]; 064: 1-12. Available at:
- [22]. <https://www.gestionderiesgos.gob.ec/wp-content/uploads/2020/11/Informe-de-Situacion-No064-Casos-Coronavirus-Ecuador-13112020.pdf>
- [23]. Asmundson GJ, Taylor S. How health anxiety influences responses to viral outbreaks such as COVID-19: What decision makers, health authorities, and health professionals need to know. *J Anxiety Disord.* 2020 [Cited: January 08, 2021]; 71: 102-211. Available from: <https://pubmed.ncbi.nlm.nih.gov/32179380/> DOI: [10.1016/j.janxdis.2020.102211](https://doi.org/10.1016/j.janxdis.2020.102211)
- [24]. Ahorsu DK, Lin CY, Imani V, Saffari M, Griffiths MD, Pakpour A. The fear of COVID-19 scale: Development and Initial Validation. *Int J Ment Health Addiction.* 2020 [Cited: January 08, 2021]: 1-9. Available from:
- [25]. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7100496/> DOI: [10.1007/s11469-020-00270-8](https://doi.org/10.1007/s11469-020-00270-8)
- [26]. Carrillo Izquierda MD, Conesa Fuentes MC. Degree of knowledge of the nursing process in the Murcian Union of Hospitals. *Rev Telesa.* 2013[Cited: January 08, 2020]; 14. Available at: <http://www.index-f.com/tesela/ts14/ts8041r.php>
- [27]. WHO World Health Organization: The psychological impact of COVID-19 on society should not be ignored. 2020 [Cited: January 08, 2021] Available at: <https://www.dw.com/es/oms-el-impacto-psicol%C3%B3gico-del-covid-19-en-la-sociedad-no-debe-ser-ignorado/a-52925095>
- [28]. PAHO/WHO. Health Indicators: Conceptual and Operational Aspects. World Health Organization. 2018 [Cited: November 16, 2020]. Available from:
- [29]. https://www.paho.org/hq/index.php?option=com_content&view=article&id=14401:health-indicators-conceptual-and-operational-considerations-section-1&Itemid=0&limitstart=1&lang=es
- [30]. Ferrara F. Health in the hands of the people. *Revista Mestiza.* 2015 [Cited: November 16, 2020]; 13 (4): 161-166 Available from:
- [31]. <https://revistamestiza.unaj.edu.ar/floreal-ferrara-la-salud/>
- [32]. Rivero A. The history of the Alma Ata conference. *Rev Peru Gynecol Obstet.* 2018 [Cited: January 08, 2021]; 64 (3): 361-366. Available at: http://www.scielo.org.pe/scielo.php?script=sci_arttext&pid=S2304-51322018000300008DOI: <https://doi.org/10.31403/rpgo.v64i209>
- [33]. Sillas-González DE, Jordán Jinez ML. Self-care, an essential element in nursing practice. *Development Científ Enferm.* 2011[Cited January 10, 2021]; 19(2): 66-9. Available at: <http://www.index-f.com/dce/19/r19-067.php>
- [34]. Naranjo-Hernández Y, Concepción- Pacheco JA, Rodríguez Larreynaga M. Self-care deficit theory; Dorothea Elizabeth Orem. *Gac Médica Espirituana.* 2017 [Cited: January 09, 2021]; 19 (3): 89-100. Available from:
- [35]. http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1608-89212017000300009
- [36]. Navarro-Peña Y, Castro Salas M. Dorothea Orem's model applied to a community group through the nursing process. *Enferm Glob.* 2010 [Cited: January 09, 2021]; 19 (1): 125-133. Available at:
- [37]. http://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S1695-1412010000200004
- [38]. Giraldo Osorio A, Toro Rosero MY, Macías Ladino AM, Valencia Garcés CA, Palacio Rodríguez S. Health promotion as a strategy for the promotion of healthy lifestyles. *Rev Hacia Promoción Salud.* 2010 [Cited: January 09, 2021]; 15 (1): 128-143. Available at: <https://www.redalyc.org/articulo.oa?id=309126693010>

- [39]. Bustamante Leija LE, Sánchez-González C, Dubón Ma del C. Self-care in the timely diagnosis of diseases. *Gac Mex Oncol.* 2015 [Cited: January 09, 2021]; 14 (2): 117-124. Available at: <https://www.elsevier.es/es-revista-gaceta-mexicana-oncologia-305-articulo-el-autocuidado-el-diagnostico-oportuno-S1665920115000206> DOI: 10.1016/j.gamo.2015.06.017
- [40]. Can-Valle AR, Sarabia Alcocer B, Guerrero Ceh JG. Self-care in the elderly in the city of San Francisco de Campeche. *Rev Iberoamericana para la Investigación y el Desarrollo Educativo.* 2015 [Cited: January 09, 2021]; 6 (11): 1130-1149. Available at: <https://www.redalyc.org/articulo.oa?id=498150319043>
- [41]. National Council for Disability Equality. Guide for the prevention and care of COVID-19 virus infection in persons with disabilities. 2020 [Cited January 10, 2021]. Available at: <https://www.consejodiscapacidades.gob.ec/wp-content/uploads/downloads/2020/04/GUIA-PARA-LA-PREVENCIÓN-Y-ATENCIÓN-POR-CONTAGIO-DEL-VIRUS-COVID-19-EN-PERSONAS-CON-DISCAPACIDAD.pdf>
- [42]. Macaya P, Aranda F. Care and self-care in health personnel: facing the COVID-19 pandemic. *Revista Chilena de Anestesia.* 2020 [Cited June 20, 2020]; 49 (3): 356-362. Available at: <https://revistachilenadeanestesia.cl/revchilanestv49n03-014/> DOI: <https://doi.org/10.25237/revchilanestv49n03.014>
- [43]. Arias P.R. Behavioral self-assessment for care in the face of health emergency covid-19. NeuroCorp, Institute for Behavioral Research. 2020 [Cited January 8, 2021]; Available from: https://www.researchgate.net/publication/340314850_AUTOEVALUACION_CONDUCTUAL_PARA_EL_CUIDADO_FRENTE_A_LA_EMERGENCIA_SANITARIA_COVID-19 DOI: 10.13140/RG.2.2.26560.07686
- [44]. Urzúa A., Vera-Villaruel P., Caqueo-Úrizar A., Polanco-Carrasco R. Psychology in the prevention and management of COVID-19. Contributions from the initial evidence. *Terapia psicológica.* 2020 [Cited March 11, 2021]; 38(1), 103-118 Available at: https://scielo.conicyt.cl/scielo.php?script=sci_arttext&pid=S071848082020000100103 DOI: <https://dx.doi.org/10.4067/S0718-48082020000100103>
- [45]. Maguiña C, Gastelo R, Tequen A. The new Coronavirus and the Covid-19 pandemic. *Rev Med Hered.* 2020 Apr [cited 2021 Mar 24]; 31(2): 125-131. Available from: http://www.scielo.org.pe/scielo.php?script=sci_arttext&pid=S1018-130X2020000200125&lng=es. <http://dx.doi.org/10.20453/rmh.v31i2.3776>.
- [46]. Inca P; Inca C. Evolution of coronavirus disease (COVID-19) in Ecuador. *Science in the Service of Health.* 2020 [Cited March 11, 2021]; 11 (1): 5-15. Available at: <http://revistas.esPOCH.edu.ec/index.php/cssn/article/view/441>. doi: <http://dx.doi.org/10.47244/cssn.Vol11.Iss1.441>.
- [47]. Ramirez M. Nursing care, relevance in the context of the COVID-19 pandemic. *Nursing (Montevideo).* 2020 [cited 2021 Mar 24]; 9(1): 1-2. Available from: http://www.scielo.edu.uy/scielo.php?script=sci_arttext&pid=S2393-66062020000100001&lng=es. DOI: <http://dx.doi.org/10.22235/ech.v9i1.2184>.
- [48]. Galindo O, Ramirez M, et al. Anxiety symptoms, depression and self-care behaviors during the COVID-19 pandemic in the general population. *Gaceta médica de México.* 2020 [cited 2021 Mar 24]; 156, (4): 298-305. Available from: <https://dialnet.unirioja.es/servlet/articulo?codigo=7725297>
- [49]. Mansilla N. Knowledge and prevention of Covid-19 in the inhabitants of the district of Grocio Prado - Chinchá 2020. Degree thesis. Institutional Repository - UNID. 2020 [cited 2021 Mar 24]; available from: <http://repositorio.unid.edu.pe/handle/unid/97>
- [50]. Ruiz M, Díaz A, Ortiz M, Enit V. Self-care behaviors for the prevention of COVID-19 infection in Peruvian villagers. *Rev cuba med gen integr.* 2020 [cited 25 Mar 2021]; 36(4). Available from: <http://www.revmgi.sld.cu/index.php/mgi/article/view/1708>