

## Promotion Of Healthy Eating And Physical Activity For Community Health Agents: Effects Of An Educational Intervention

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### Abstract:

**Background:** People's knowledge and awareness of the importance of carrying out body practices are essential measures to prevent diseases and favor the promotion of global health. However, health professionals usually address their importance to users, but fail to institute them in their daily lives. The present study aimed to analyze the effects of an educational intervention program on self-care in the daily life of community health agents (ACS).

**Materials and Methods:** Intervention research with 55 ACSs from the municipality of Assaré, Ceará, Brazil. The intervention addressed the promotion of healthy eating and body activity, being carried out during the month of April 2022, in the form of a workshop, lasting 16 hours. In the meetings, the participants exercised the simulation of healthy dishes and practiced Lian Gong in 18 therapies (LG18T). For data collection, semi-structured interviews were conducted before and after the intervention, analyzed using the IRaMuTeQ software by Similitude Analysis and discussed in the light of the Theory of Self Care.

**Results:** Reports of positive changes in self-care after the intervention were unanimous. It was possible to identify in Similitude Analysis the pillars of Self Care, especially those that refer to taking care of oneself and carrying out actions from oneself towards oneself.

**Conclusion:** Carrying out the intervention program was considered positive and transformative for the ACSs, who re-signified their ways of life and inserted healthier behaviors into their daily lives, becoming producers and transformers of their own lives.

**Key Word:** Community Health Workers; Self-care; Health Promotion; Occupational Health; Public Health.

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### I. Introduction

Over time, the way of performing health care has undergone an evolutionary process resulting from the development of knowledge about the dimensions that involve illness. We went from a curative approach, focused on the early diagnosis and resolution of the individual's diseases, to an expanded dimension, taking into account the multiple relationships that lead to a health problem and the preventive practices necessary to mitigate its establishment that, not necessarily, are directed only to the patient<sup>1</sup>.

The current understanding of knowledge about preventive medicine was only formulated in the first half of the twentieth century and consolidated in the second half, when the work of Leavell and Clark classified preventive actions into primary, secondary and tertiary<sup>2</sup>. This classification was supported by the concept of the natural history of diseases, where primary prevention promotes health before the establishment of the lesion or disease, secondary prevention in the early detection of diseases in asymptomatic individuals and tertiary prevention in actions that slow the progression of the disease<sup>3</sup>.

In 1998, the World Health Organization<sup>4</sup> introduced the terminology "risk factor" in the dimensions of preventive actions, addressing the importance of measures that go beyond the prevention of the establishment of diseases, but also in the reduction of risk factors, adopting a new classification of preventive action, the primordial prevention, which are strategies to avoid exposure to risk factors for diseases or health conditions. More recently,

the level of quaternary prevention has also become part of the list of preventive actions, which aims to reduce iatrogenic events and avoid unnecessary interventions, focusing on individual clinical care<sup>5,6</sup>.

However, considering that health approaches should be guided beyond the preventive focus of health conditions, it becomes relevant to insert health promotion in this context, and how people can do to appropriate the strategies aimed at achieving this purpose and thus improve and maintain their health.

In this context, the importance of self-care is evidenced, understood as that which promotes transformation from what is considered good for oneself, through desires arising from the experiences lived in daily life and that put people in the condition of producers of their own life<sup>7</sup>.

Self-care, in a more detailed way, can be understood under the pillars of "occupying oneself" and "worrying about oneself", through which it is better understood that self-care constitutes the set of relational attitudes with oneself, with the other and with the world, enabling the transfer of the look from the outside to oneself and the realization of actions that result in self-transformation<sup>8,9</sup>, impacting on health, life and well-being.

Working on these aspects with Primary Health Care (PHC) professionals can contribute to the achievement of the objectives proposed in the National Health Promotion Policy. Due to the capillarity of the role of Community Health Agents (ACS) within the community, the offer of educational actions to promote health with the ACS has the potential to cause a positive impact on well-being and quality of life in a particular and collective way, since these professionals act as multipliers of good health practices during home visits carried out in daily work.

Faced with this situation and considering the importance of self-care for health promotion, the following question arose: can participation in a health promotion program focused on healthy eating and body practice contribute to the self-care of the ACS? Due to these questions, the objective was to apprehend the perceptions of the ACS about the effects of an educational intervention program aimed at self-care.

## **II. Material And Methods**

This is a research-intervention study, because it aims to unite theory and practice, configuring a scientific and pedagogical instrument for local transformation, through a relationship of mutual trust<sup>10</sup>, in which researcher and researched relate collaboratively. In this study, the intervention consisted of an educational activity in the format of a theoretical-practical course, aiming to expand knowledge and favor behavioral changes for self-care. Its theme was the promotion of healthy eating and body activity.

**Study Design:** Research-intervention

**Study Location:** Municipality of Assaré, located in the south of the state of Ceará, at a distance of 520 km from the capital Fortaleza, with a population of 23,417 inhabitants<sup>11</sup> distributed in 1,116,320 km<sup>2</sup> of territorial area. The referred municipality offered support for the accomplishment of the research and considered the hours of participation in the course as part of the working day of the participants.

**Study Duration:** April to July 2022.

**Sample size:** 55 ACS.

**Subjects & selection method:** The 63 community health agents linked to the Municipal Health Department were invited to participate in the intervention research, according to the criteria adopted in the research.

### **Inclusion criteria:**

1. ACS who were in work activity during the data collection period.

### **Exclusion criteria:**

1. ACS who was on vacation at work;
2. ACS who were furloughed for any reason;
3. ACS who have been disconnected from work;
4. ACS who missed one or more course meetings.

### **Procedure methodology**

The course was held on the premises of the City Council of the municipality, during the month of April 2022, organized in four weekly meetings lasting four hours each, making a total of 16 hours. The central themes of healthy eating were: why we need to think about and adopt healthy eating; behavioral issues that influence self-care; new classification of foods; what to put on the plate; examples of healthy meals; 10 steps to healthy eating; to face the main difficulties; carbohydrates, proteins, lipids and nutrients; assembling dishes based on the food recall of the last 24 hours.

The contents related to body practice involved: why we need to think and adopt a body practice/physical activity (BP/PA); behavioral issues that influence self-care; importance of BP/PA for health and well-being; body

practice as an integrative/complementary practice in health; meeting Lian Gong in 18 Therapies (LG18T); practicing the LG18T.

LG18T is a practice of Traditional Chinese Medicine (TCM), which was initially developed in the 1970 to treat pain and musculoskeletal problems, and was later brought to Brazil, and began to be performed as a practice for health promotion<sup>11</sup>, as it mobilizes tendons, muscles and bones, as well as promotes better circulation of vital energy (Qi) and organic fluids, conferring well-being on the practitioner. It is a light physical activity, with gentle and firm movements, and can be practiced by people of any age group<sup>12</sup>. Participants were encouraged to practice also on days when there was no meeting.

Data collection through semi-structured interviews, which took place in the moments before and after the intervention, being conducted by different interviewers for each moment, and guided by the following questions: "How do you currently perceive your health?", "What have you done to take care of yourself?", "How have you been currently taking care of yourself in relation to food and body practice/physical activity?"

The pre-intervention interviews took place in the medical office of the UBS where one of the researchers worked, individually and with an average duration of 15 minutes. The post-intervention interviews took place in a virtual environment, via the google meet platform, through which the video call was made by a second researcher, in order to avoid possible influences on the participants' answers. These interviews had an average duration of 10 minutes.

### **Statistical analysis**

The participants' reports were recorded in audio and then transcribed into a text document in Libre Office Writer, version 7.2 and suitable for export to the IRaMuTeQ software (Interface de R pour l'Analyse Multidimensionnelle de Textes et de Questionnaires), version 0.7 alpha 2. Through the interface with the R software, IRaMuTeQ performs several possibilities of processing and statistical analysis of texts and questionnaires<sup>13</sup>, and the Descending Hierarchical Classification (CHD) was selected in the context of this research.

The CHD performs the partitioning of the corpus and originates classes of text segments (ST) that present similar vocabulary for the expressions of the same class, but different from the ST of the other classes, classified by means of the Chi-square test, making it possible to apprehend the phenomenon and identify its singularities. It is noteworthy that there is good use of the corpus when the percentage of retention of TS is equal to or greater than 75%<sup>14</sup>.

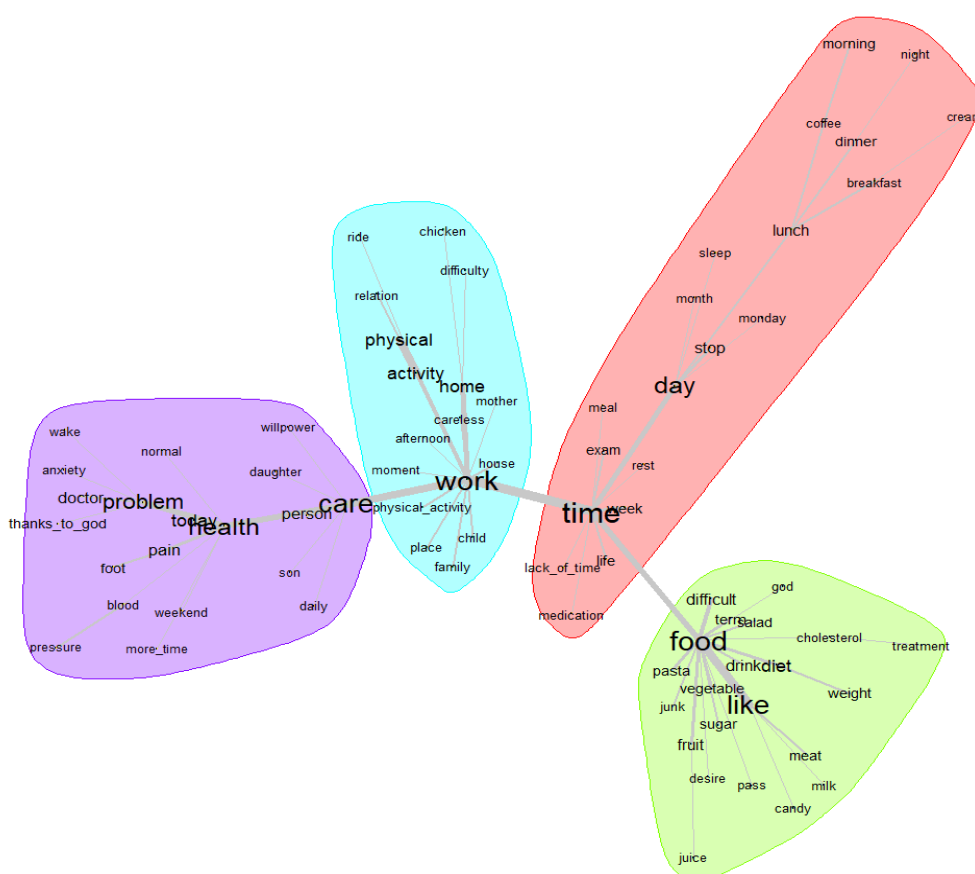
This research is part of a broader study on Health literacy, flow at work and occupational self-efficacy, evaluated by the Research Ethics Committee of the Federal University of Cariri, with a favorable opinion n° 5.168.683.

### **III. Result**

The study included 55 ACS, corresponding to 87.3% of the total number of eligible professionals, most of whom were female (n=52; 94.5%), self-declared mulatto (n=35; 63.6%), with complete high school education (n=32; 58.2%), with an income of one to two minimum wages (n=25; 45.5%), of Catholic religion (n=43; 78.2%), married (n=35; 63.6%), with children (n=46; 83.6%) and working in rural areas (n=37; 67.3%). The mean age of the participants was 43.02±9.9 years and the mean time working as ACS was 16.09±9.8 years.

#### **Health perception and self-care before the intervention**

The first corpus (pre-intervention interviews) was divided into 492 ST, giving rise to a tree of similarity with two central communities and two peripheral communities (Figure 1).



**Figure 1.** Similarity tree of the corpus health perception and self-care of community health agents before the educational intervention.

The first central community (rose color) brought the terms "time", "day" and "lack of time" which established a relationship with important aspects for the care of oneself and the obstacles to its realization:

*"I think that what is missing to improve my health is to have more time, due to the rush of work and day to day" (ACS12).*

The second central community (blue color) represented the daily work of the ACS by the expression "work", whose connection was established with the terms "home", "difficulty", "physical activity", "family" and "child":

*"... then, in the course of my work, we have the habit of passing through the houses, and you know where the best coffee is, then I drink the coffee and drink little water" (ACS17).*

*"The truth is that everything is very busy for people who have work, have children, have a house, there is everything for us to realize, then everything is very busy" (ACS20).*

The first peripheral community (pink color) referred to the "care", "health" and "problem" with as obstacles to the healthy life of ACS:

*"My health is more or less, because now a problem has appeared in my feet, doctor, that I even made an appointment with the doctor of our FHP; I feel a lot of pain in my feet" (ACS50).*

*"Really, my health so far, these two years, have been excellent thank God, but then I have several other health problems..." (ACS01).*

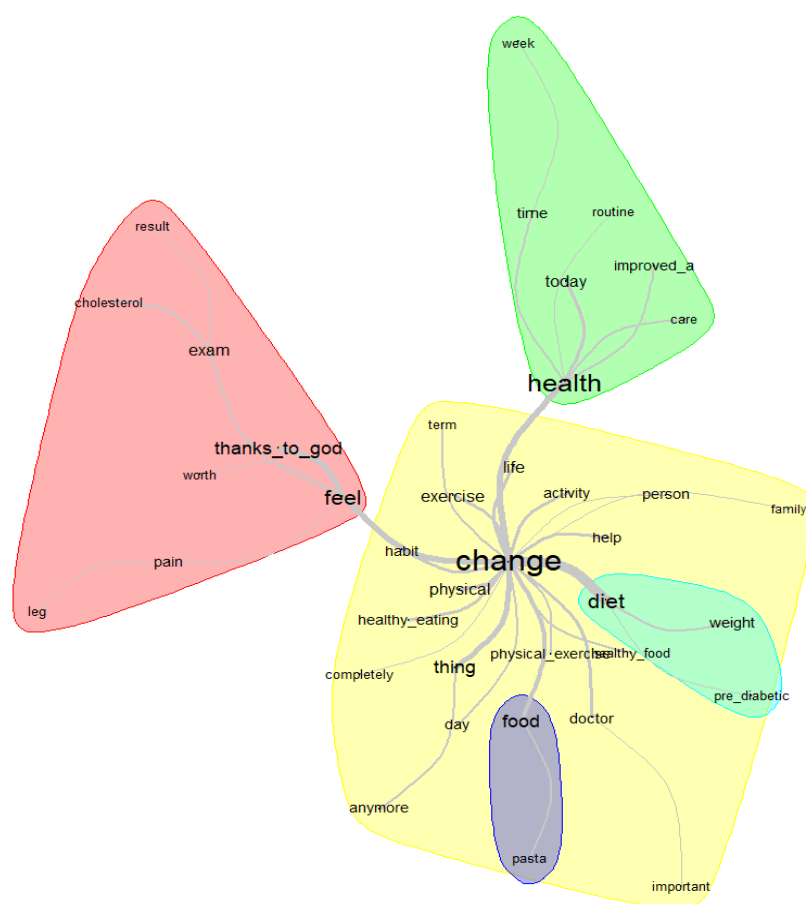
The two peripheral community (green color) referred to the "food" of the ACS, with emphasis on the consumption of unhealthy foods ("soft drinks", "pasta", "sugar" and "fat") and absence of healthy foods ("salads", "fruits", "vegetables"):

*"In relation to food, it is avoiding soft drinks, fats, saturated fats, these things" (ACS40).*

*"My biggest problem is with sweets, then it's something that still gives a difficulty because of sugar, which causes a lot of inflammation in our body" (ACS46).*

### Health perception and self-care after the intervention

The second corpus (post-intervention interviews) was divided into 121 ST, giving rise to a tree of similarity with two peripheral communities and one central community (Figure 2).



**Figure 2.** Similarity tree of the corpus health perception and self-care of community health agents after the educational intervention.

The central community (yellow color) and their sub-communities (blue color and purple color) were structured, which brought the connections between the terms "change", "food" and "diet" as the central nucleus:

*"It was very worthwhile, it was very good that course there of the doctor, especially in this issue of behavior change, it is very important. I ended up changing my diet; in fact, I have changed my diet and I am looking for more physical exercise, such as walking" (ACS19).*

*"... changed the issue of food as well, some things that we thought it was right to eat and were totally wrong, after the course we took everything changed" (ACS01).*

The first peripheral community (green color) brought the clinical aspect to the perception of health and adoption of care/maintenance of healthy habits of the ACS after the educational intervention, by the terms "care", "time", "routine" and "week".

*"It was very worthwhile, it was very good that course there of the doctor, especially in this issue of behavior change, it is very important. I ended up changing my diet; in fact, I have changed my diet and I am looking for more physical exercise, such as walking" (ACS19).*

The second peripheral community (pink color) brought the perception of health of the ACS after the performance of the "tests" and verification of the effect in the "results", especially in the examination that measured the "cholesterol". This made the expression "thanks\_to\_god" recurrent in the reports obtained.

*"I'm fine, thank God; I'm not feeling anything, I'm not feeling it, the course was an extra incentive; I was already doing physical exercise, I walk, and the course was an incentive to never give up" (ACS05).*

*"Today I'm feeling like another person, wonderful, thank God; I have no disease, thank God. After the course he improved a lot, everything, a lot, a lot, a lot; changed my lifestyle" (ACS36).*

#### **IV. Discussion**

The reports of the ACS showed changes in the perception of health and in the practices of self-care after the educational intervention. Before the course, the speeches expressed important aspects that negatively impacted self-care, as well as the obstacles they faced for its realization.

The foods most consumed by the ACS were evident, which were marked by the presence of carbohydrates and caffeine in their compositions, as well as the lack of well-defined schedules to perform the meals of the day.

This situation was justified by the ACS by the intense routine of the work and by the difficulties in knowing and adopting healthy behaviors. These reasons impacted on the participants' perception of health, since the CHA believed they were in full condition, but at the same time recognized conditions that negatively affected well-being.

In the study<sup>15</sup> with ACS, this dichotomy between looking and actually being well is evident when the ACS recognize the need to be well with their own health to serve as an example to the population, but recognize the need for a preventive approach to mental and physical health to reduce the effects generated by the high load of problems absorbed in daily life.

In the statements of the ACS, the time factor was cited as a central obstacle to perform self-care, understood by them as actions related to the terms "walking" and "exercise". The triple working hours were pointed out by the ACS as the main reason for the lack of time, demonstrated through the connections with the terms "work", "home", "family" and "children", since the participants were mostly married women with children. Similar results have also been found in other studies<sup>16,17</sup>, which evidenced the triple working day as a prevalent factor for women in the labor market.

This obstacle would be, therefore, one of the determinants of the consumption of unhealthy foods, characterized by the terms "pasta", "sugar" and "fat", besides being a factor that impairs aspects of the daily life of the ACS, such as difficulty in following diets, performing physical activity and having a eating routine with healthy foods.

When the reports of the ACS after the educational intervention were analyzed, it was found that despite the persistence of chronic pain aspects in health conditions, such as osteoarthritis, their perception of health was positive, because the experiences obtained with the course were determinant to have repercussions on the change of behavior, both in the perspective of caring for oneself and in the performance of body practices/physical activity, as well as in relation to healthy eating habits.

The course was pointed out in the statements of the ACS as a central factor to stimulate the improvement of perceptions of health and self-care, by presenting an association in the central axis with the terms "change" and "improvement".

This evolution was represented especially in the impact on food, with emphasis on the terms "pasta" and "fat", indicating the replacement of these items by healthy foods, in addition to the advance in the implementation of water intake, indicated by the term "water". The correlation between improved perception of health and well-being with healthy behavior was also observed in a similar study<sup>18</sup>.

The intervention was also important to stimulate the change of aspects related to daily actions. The terms "health" and "routine" indicate the transformation that took place in relation to the adoption of healthy habits that were being neglected and even, before the course, justified by the absence of time. The statements also indicated

that the improvement of clinical parameters served as a stimulus for the adoption/maintenance of healthy habits, as evidenced by the terms "results", "tests", "habits" and "healthy".

The aspects reported by the ACS before the intervention reflected consistent obstacles to the performance of "actions of self to self", demonstrating the absence of attitudes aimed at self-care and the need for these professionals to "occupy themselves and worry about themselves", as a way to improve health and well-being.

Behaviors aimed at healthy eating and physical activity are considered self-care practices in several studies<sup>19-22</sup> and were also verified in the reports of the ACS after the educational intervention, who performed self-care practices according to their ways of conceiving, doing and being of each professional.

Considering the three central aspects of the Self-Care Theory, it was found that the educational intervention provided the ACS with reflections and resignifications about their ways of thinking and acting, their work and personal life processes. This impelled them to "turn inward" (perception of the need for change), define "actions of self towards themselves" (time management, prioritization of personal care) and implement "attitudes with themselves (change in eating behavior and body practice/physical activity), with the other (family and children) and with the world (work).

Still in this sense, it is noteworthy that the LG18T used in this research, as well as other integrative and complementary health practices carried out in the scope of Primary Health Care and SUS that are presented as a strategy that promotes self-care<sup>23</sup>, enabled different ways of being, doing and feeling of its practitioners, corroborating for the improvement of the health, life and well-being of these professionals.

In addition, the self-care of the ACS, as an attitude of self-solidarity, can contribute to these professionals being driven to have better relations with others and with the world, positively impacting on the care of the families under which their work processes are based, as well as on the other interpersonal relationships established within the scope of integrative and complementary health practices.

## V. Conclusion

This study aimed to apprehend the perceptions of the ACS about the effects of an educational intervention program aimed at self-care. The performance of educational actions aimed at self-care was considered positive and transformative for the ACS, that have gained new meaning their ways of life and inserted healthier behaviors in their daily lives, especially regarding food and physical activity.

Several manifestations of self-care emerged from the professionals' reports, through the care with food, in the practice of bodily activities, in the reflection on themselves and their acts, in the relationship with family members and on how their own work processes occur, which reflect on the fabric of the complex relationship between knowing oneself and performing care to promote one's own health.

## References

- [1]. Molster, CM, Bowman FL, Bilkey GA, Cho AS, Burns BL, Nowak KJ, Dawkins HJS. The Evolution of Public Health Genomics: Exploring Its Past, Present, and Future. *Front Public Health*. 2018 4;6:247. <https://doi.org/10.3389/fpubh.2018.00247>.
- [2]. Leavell H, Clark, E.G. *Medicina preventiva*. São Paulo: McGrawHill do Brasil; 1976.
- [3]. Tesser, C. D. Why is quaternary prevention important in prevention? *Revista de Saúde Pública*. 2017, v. 51, p. 116. <https://doi.org/10.11606/S1518-8787.2017051000041>.
- [4]. World Health Organization (WHO). *The World Health Report 2000. Health systems: improving performance*. Genebra, Suíça: OMS, 2000.
- [5]. Starfield B, Hyde J, Gérvas J, Heath I. The concept of prevention: a good idea gone astray? *J Epidemiol Community Health*, 2008; 62(7):580-3. <https://doi.org/10.1136/jech.2007.071027>.
- [6]. Tesser CD. Quaternary Prevention for the humanization of Primary Health Care. *Mundo Saúde*. 2012;36(3):416-26.
- [7]. Carnut L. Care, integrality and primary care: essential articulation to reflect on the health sector in Brazil. *Saúde em Debate*. 2017, v. 41, n. 115, p. 1177-1186. <https://doi.org/10.1590/0103-1104201711515>.
- [8]. Foucault M. *A hermenêutica do sujeito: curso dado no College de France (1981-1982)*. Tradução de Márcio Alves da Fonseca e Salma Tannus Muchail. 2 ed. São Paulo: Martins Fontes, 2006. 680 p.
- [9]. Pereira EC. *Self-care of primary care professionals who work with integrative and complementary practices in a region of the city of São Paulo*. São Paulo, 2020. 103 p. Dissertation (Master in Public Health) - Universidade Federal de São Paulo - UNIFESP, São Paulo, 2020.
- [10]. Antunes MTO, Neto ORM, Vieira AM. Intervention research and its contributions for research practice in professional master courses. *Indagatio Didactica*. 2016. <https://doi.org/10.34624/id.v8i3.2569>.
- [11]. Brazilian Institute of Geography and Statistics (IBGE). *Population Estimate – Assaré – Censo 2010*. Disponível em: <https://cidades.ibge.gov.br/brasil/ce/assare/panorama>. 2022.
- [12]. Randow R., Mendes NC, Silva LTH, Abreu MNS, Campos KFC, Guerra VA. (2017). Lian Gong in 18 therapies as a health promotion strategy. *Revista Brasileira em Promoção da Saúde*, 30(4). <https://doi.org/10.5020/18061230.2017.6365>.
- [13]. Sousa KF, Torres MV, Rabelo MN, Melo LS, Santos BC, Guimarães JMS (2015). A prática do Lian Gong na promoção de saúde. *Sanare*, 14(1): e:2317-7748. <https://sanare.emnuvens.com.br/sanare/article/view/704/406>.
- [14]. Salvador PTCO, Gomes ATL, Rodrigues CCFM, Chiavone FBT, Alves KYA, Bezerril MS et al. Use of IRAMUTEQ software in the Brazilian healthcare research: a scoping review. *Revista Brasileira em Promoção da Saúde*, 2018. <https://doi.org/10.5020/18061230.2018.8645>.
- [15]. Camargo BV, Justo AM. *Tutorial para uso do software IRaMuTeQ*. Florianópolis: Universidade Federal de Santa Catarina; 2021. [http://iramuteq.org/documentation/fichiers/Tutorial%20IRaMuTeQ%20em%20portugues\\_22.11.2021.pdf](http://iramuteq.org/documentation/fichiers/Tutorial%20IRaMuTeQ%20em%20portugues_22.11.2021.pdf).

- [16]. Pinheiro LS, Medeiros TCS, Valença CN, Dantas DKF, Santos MAP. Quality of life and work improvements according to community health agents. *Rev Bras Med Trab.* 2019;17(2):180-187.
- [17]. Mota-Santos C, Azevedo AP, Lima-Sousa E. The Woman on a Triple Burden of Work: Discussion About the Division of Tasks in Relation to Her Partner. *Revista Gestão & Conexões*, v. 10, n. 2, p. 103–121, 2021. <https://doi.org/10.47456/regec.2317-5087.2021.10.2.34558.103-121>.
- [19]. Pirrolas OAC, Correia PMAR. Profession, family and education – conciliation of the triple journey: a question of organizational policies and practices or a question of sex? *Revista da FAE*, 2020, 23(1), 7-22.
- [20]. Franco JR, Silva Júnior MB, Borges JWP, Silva ES. Analysis of the behavior of health and personal well-being promotion among university students. *Rev. APS*, 2019. 22 (1): 7-22. <https://doi.org/10.34019/1809-8363.2019.v22.16710>.
- [21]. Elias EA, Sousa IEO, Vieira LB. Meanings of themselves-care of nursing professional women in a emergency unit. *Escola Anna Nery Revista de Enfermagem* 18(3) Jul-Set 2014.
- [22]. Sobrinho SH, Radunz V, Rosa LM. O cuidar de si para promoção da saúde: os cuidados da enfermagem. *Cienc Cuid Saude*, 14(1):941-94. 2015.
- [23]. Ferreira ES, Souza MB, Souza NVDO, Tavares KFA. The importance of self-care for nursing professionals. *Cienc Cuid Saude*, 14(1):978-985. 2015.
- [24]. Xavier AP, Barreto DM, Alóchio KV, Sá SPC, Silva Júnior DI. Resignificating nursing care: perceptions of a team. *Rev enferm UFPE on line.*, 11(3):1179-88, 2017.