REVISTA ONLINE DE PESQUISA

CUIDADO É FUNDAMENTAL

Universidade Federal do Estado do Rio de Janeiro • Escola de Enfermagem Alfredo Pinto

RESEARCH

DOI: 10.9789/2175-5361.rpcfo.v13.8241

ASSOCIATION BETWEEN ADHERENCE TO PHARMACOTHERAPY, HABITS OF ALCOHOLISM AND SMOKING IN HOSPITALIZED ELDERLY

Associação entre adesão à farmacoterapia, hábitos de etilismo e tabagismo em idosos hospitalizados

Asociación entre adhesión a la farmacoterapia, hábitos de etilismo y tabaquismo en ancianos hospitalizados

Maryellen Martins de Souza[1], Josiane Moreira da Costa[2], Jéssica Soares Malta[3], Maria Auxiliadora Parreiras Martins[4], Carla Jorge Machado[5], Cristina Mariano Ruas Brandão[6]

How to cite this article:
Souza MM, Costa JM, Malta JS, Martins AP, Machado CJ, Brandão CMR. Association between adherence to pharmacotherapy, habits of alcoholism and smoking in hospitalized elderly. 2021 jan/dez; 13:214-220. DOI: http://dx.doi.org/0.9789/2175-5361.rpcfo.v13.8241.

ABSTRACT

Objectives: to evaluate the association between alcoholism and smoking habits, and adherence to pharmacotherapy prior to hospitalization, in hospitalized elderly and accompanied by a Clinical Pharmacy service. **Methods:** a cross-sectional study analyzed the medical records of 218 patients of the clinical pharmacy service in a public hospital in Minas Gerais between 08/2014 and 01/2016. Data were recorded on a Microsoft Excel worksheet, followed by Odds Ratio (OR) analysis, to assess the association between adherence problems and smoking habits, or both, regarding the group without these habits. **Results:** OR 1.72 (P: 0.21) was identified in the group with smoking habits, OR 2.38 (P: 0.05) in alcoholism, OR 2.41 (P: 0.03) in the group with both habits. **Conclusion:** it was identified that the group that reported the two habits, presented a greater chance of adhesion problems, when compared to the control group. However, further studies on this topic are recommended.

KEYWORDS: Smoking; Alcohol; Elderly; Medication Adherence; Drug.

1 Pharmacy Graduate by the *Universidade Federal de Minas Gerais (UFMG)*. (Orcid: https://orcid.org/0000-0002-5718-0458)

2 Pharmacy Graduate by the *UFMG*, MSc in Health and Nursing by the *UFMG*, PhD student in Medication and Pharmaceutical Assistance by the *UFMG*. (Orcid: https://orcid.org/0000-0001-6097-6994)

3 Pharmacy Graduate by the *UFMG*, MSc student in Medication and Pharmaceutical Assistance by the *UFMG*. (Orcid: https://orcid.org/0000-0003-4610-393X)

4 Pharmacy Graduate by the *UFMG*, MSc in Pharmaceutical Sciences by the *UFMG*, PhD in Health Sciences by the *UFMG*, Associate Professor at the *UFMG*. (Orcid: https://orcid.org/0000-0003-3923-4464)

5 Economic Science Graduate by the *UFMG*, MSc in Demography by the *UFMG*, PhD in Population Dynamics by the Johns Hopkins University/USA, Associate Professor at the *UFMG*.(Orcid: https://orcid.org/0000-0002-6871-0709)

6 Pharmacy Graduate by the *Centro Universitário Newton Paiva*, MSc and PhD in Public Health by the *UFMG*, Associate Professor at the *UFMG*. (Orcid: https://orcid.org/0000-0003-0275-8416)

DOI: 10.9789/2175-5361.rpcfo.v13.8241

RESUMO

Objetivos: avaliar a associação entre hábitos de etilismo e tabagismo, e adesão à farmacoterapia antes da internação, em idosos hospitalizados e acompanhados por um serviço de Farmácia Clínica. **Métodos:** estudo transversal, analisou prontuários de 218 pacientes do serviço de farmácia clínica em um hospital público, em Minas Gerais, entre 08/2014 e 01/2016. Os dados foram registrados em planilha do Microsoft Excel, seguido de análise Odds Ratio (OR), para avaliar associação entre a existência de problemas de adesão e hábitos de tabagismo, etilismo, ou ambos, em relação ao grupo sem esses hábitos. **Resultados:** identificou-se OR 1,72 (P: 0,21) no grupo com hábitos de tabagismo, OR 2,38 (P: 0,05) em etilismo, OR 2,41 (P: 0,03) no grupo com ambos hábitos. **Conclusão:** identificou-se que o grupo que relataram os dois hábitos, apresentou maior chance de problemas de adesão, quando comparado ao grupo controle. Contudo, recomenda-se realização de estudos mais amplos sobre esse tema.

DESCRITORES: Tabagismo; Álcool; Idoso; Adesão; Medicamentos.

RESUMEN

Objetivos: evaluar la asociación entre hábitos de etilismo y tabaquismo, y adhesión a la farmacoterapia antes de la internación, en ancianos hospitalizados y acompañados por un servicio de Farmacia Clínica. **Métodos:** estudio transversal, analizó prontuarios de 218 pacientes del servicio de farmacia clínica en un hospital público, en Minas Gerais, entre 08/2014 y 01/2016. Los datos se registraron en la hoja de cálculo de Microsoft Excel, seguido del análisis Odds Ratio (OR), para evaluar la asociación entre la existencia de problemas de adhesión y hábitos de tabaquismo, etilismo, o ambos, en relación al grupo sin estos hábitos. **Resultados:** se identificó OR 1,72 (P: 0,21) en el grupo con hábitos de tabaquismo, OR 2,38 (P: 0,05) en etilismo, OR 2,41 (P: 0,03) en el grupo con ambos hábitos. **Conclusión:** se identificó que el grupo que relataron los dos hábitos, presentó mayor probabilidad de problemas de adhesión, cuando comparado al grupo control. Sin embargo, se recomienda realizar estudios más amplios sobre este tema.

DESCRIPTORES: Tabaquismo; El alcohol; Anciano; Cumplimiento de la medicación; Medicación.

INTRODUCTION

In the last decades, the elderly population growth has been expressive in the world.[1] Elderly people represent the individuals most affected by chronic diseases, making the consumption of medicines very prevalent in this population group. Although the goal of medication use by this population subgroup is to improve and promote the maintenance of the quality of life, the occurrence of undesirable events associated with polypharmacy and specific factors of senescence can increase the risks of morbidity and mortality and loss of independence.[2,3] Therefore, it is understood that undesirable effects contribute to the patients' experience vis-à-vis pharmacotherapy and to making decisions about this process, such as choosing whether to use a certain medication or not. This process is also influenced by additional factors, such as alcohol consumption and smoking, which can interfere not only in adherence to pharmacotherapy but also in the effectiveness of treatment.[4]

Studies suggest that alcohol consumption in senescence might be related to the particularities of the elderly's life, such as loneliness, abandonment, poor health, poor family life, financial problems, among others.[4] The alcohol consumption influences several biological processes, as it changes not only the absorption of nutrients but also the pharmacological activity of some drugs, either potentiating or decreasing its action.[5]

Considering the smoking habit, despite several campaigns with themes that list it as a risk factor for the development of serious and fatal diseases, its global consumption is still significant. In recent years, the Brazilian Ministry of Healt has invested in programs to reduce smoking and approaches alcohol/drug addicts. It is estimated that twelve million in Brazilian Real were spent on the treatment of diseases caused by cigarettes in 2012.[6]

It is well-known that habits such as alcoholism and smoking can compromise the benefits of pharmacotherapy, due to altering biological processes, which can lead to undesirable effects or ineffectiveness of medications, in addition to compromising adherence to pharmacotherapy.

Considering the possible damages that alcoholism and smoking habits can cause to pharmacotherapy, the present study meant to assess the association between adherence to pharmacotherapy before hospital admission and both alcoholism and smoking habits of hospitalized elderly patients who are accompanied by a Clinical Pharmacy service.

METHODS

This is a cross-sectional study that was performed from August 2014 to January 2016.

Study place

The study was carried out in a general public teaching hospital, which is a referral hospital for the emergency care network of the public health system from the *Minas Gerais* State.

Nowadays, this hospital consists of about 330 beds, which are available in the following sectors: Surgical Block, Intensive Care Unit, Emergency Room, Maternity and Medical Clinic inpatient units, Stroke, Palliative Care and Clinical Surgery. The hospital has a computerized system and an electronic medical record.

Addressing the Clinical Pharmacy service

The Clinical Pharmacy service is part of the Multiprofessional Residency Program in Elderly Health and consists of conducting an initial interview with hospitalized patients, through which the identification of needs concerning the use of medications and previous medication experiences occurs.

During the initial interview, reports of smoking and alcoholism habits are identified by pharmacists, in addition to the existence of reports of problems with adherence to medications in the period before hospitalization. To identify adherence problems, patients' self-reports were used during the pharmaceutical interview. Several instruments have

already been demonstrated to validate adherence to medicine therapy, but they are still not substantiated.[7] The self-report of adherence most often consists of the only method that health professionals have for the clinical approach of patients and constitutes a strategy that it has relevance in scientific research.[8,9] From the self-report, it was registered the existence or not of problems of adherence to medicine therapy in the period before hospitalization.

In the Clinical Pharmacy service, based on the information obtained in the meetings, medical records and results of laboratory tests, an analysis of pharmacotherapy was performed with a focus on indication, effectiveness, and safety, also considering specificities of the use of medicines by elderly people and identification of needs for performing pharmaceutical interventions. The pharmaceutical interventions and the information obtained in the interviews were recorded in the Computerized Pharmaceutical Progress (CPP). This consists of an electronic medical record and contributes to the development of the logical decision-making process of the pharmacist at the Clinical Pharmacy. The CPP has specific fields to be filled out by the pharmacist when recording the patient follow up.[10]

Data collection

In the data collection process, the CPPs of all patients monitored by the hospital's clinical pharmacy service, who were seen during the study period, were analyzed.

All patients over 60 years old who were followed up by the service and who had at least one CPP document were included. Patients assisted by the service, whose CPP medical record was not filled out, were excluded.

Patients were divided into subgroups, according to records of reports of alcoholism habit, smoking habit, or even both. The patients were classified according to CPP records regarding alcoholism, smoking or both habits. The control group was composed of patients followed by the service during the study period, and who did not report any of the habits.

Adherence problems in the period before hospitalization were identified by records of self-reported pharmaceutical developments by patients and/or family members in the initial interview about adherence problems, with patients categorized in the presence or absence of problems with adherence to pharmacotherapy in the period before hospital admission.

The study outcome variable was the existence of reports of medication adherence problems in the period before hospitalization. The explanatory variables were, as follows: average age, gender, average length of hospital stay (in days), degree of dependence on Activities of Daily Living (ADL), illiteracy and reports of family insufficiency, all collected from the CPP records.

The identification of ADL was used to assess the individual's degree of autonomy and independence. These are classified into basic activities of daily living and instrumental activities of daily living. The first involves activities related to self-care, such as dressing, hygiene, eating and walking. The second is characterized by more complex activities, such as preparing meals, shopping, using personal or public transport, managing your finances and controlling your medication.[11]

Family insufficiency is characterized by impaired family bonds and low social support, which can lead to the social vulnerability of the elderly person, the decline in psychological and functional health, lower quality of life and unsuccessful aging.[12] The record of family insufficiency was obtained from the identification of this variable in the progress records from the Social Work team.

Análise dos dados

Data were recorded in spreadsheets in the Microsoft Excel program and submitted to statistical analysis, identifying an association between the existence of adherence problems in each group, when compared to the control group. To perform the analysis, the Odds Ratio (OR) calculation was used using the MedCalc software. Odds Ratio is a measure of association widely used in studies to calculate the probability or chance of an event occurring in a group divided by the probability of that event not occurring. By calculating the Odds Ratio, an association of chances of adherence problems occurring was identified in the groups with alcoholism habit, smoking habit, and both habits, when compared to the control group.

Ethical principles

This project was previously approved by the institution's Ethics Committee under the Legal Opinion No. 364.228.

RESULTS

A total of 218 patients were included in this study, which corresponds to the entire number of patients seen in the period and who met the inclusion criteria. The average age of these patients was 72.45 years old, with the variable illiteracy reporting identified in all groups with the following prevalence: 11 (42.31%) patients in the smoking group, 4 (15.38%) in the alcoholism group, 7 (20%) in the group of both habits, and 34 (25.95%) in the control group.

The percentage of males was 53.85%, 61.54%, 80.00%, and 37.40%, in the smoking, alcoholism, both smoking and alcoholism, and control groups, respectively. **Table 1** shows the average age and median, as well as the prevalence of illiteracy, and family insufficiency by each group.

DOI: 10.9789/2175-5361.rpcfo.v13.8241

Table 1 - Specificities regarding the average age, prevalence of illiteracy and family insufficiency by each group.

Characteristics	Smoking	Alcoholism	Smoking + Alcoholism	Control group
Age (Average; SD)	71,88; 13,87	67,35; 13,06	69,54; 12,09	74,36; 11,94
Age (Median)	73,0	68,5	68,0	75,0
		Illiteracy N; %		
Yes	11; 42,30	4; 15,38¨	7; 20,00	34; 25,95
No	14; 53,85	21; 80,77¨	23; 65,71	91; 69,47
Not addressed	1; 3,85	1; 3,85	5; 14,29	6; 4,58
		Family Insufficiency N; %		
Yes	2; 7,69	5; 19,23	4; 11,43	8; 6,11
No	23;88,46	20; 76,92	30;85,71	118;90,07
Not addressed	1; 3,85	1; 3,85	1; 2,86	5; 3,82
Total	26; 100	26; 100		131; 100

SD= Standard Deviation.

Concerning the average length of hospital stay in days, 29.81 days were identified in the smoking group, 24.88 days in the alcoholism group, 31.71 days in the group with smoking and alcoholism habits, and 24.69 in the control group.

In regard to the analysis of the degree of dependence for performing ADL, basic and instrumental dependency was more predominant in the smoking group. Table 2 shows additional specifications.

Table 2 - Degree of dependence for performing ADL (basic and instrumental).

Characteristics	Smoking N; %	Alcoholism N; %	Smoking + Alcoholism N; %	Control group N; %
Dependence for ADL both basic and instrumental	8; 30,77	4; 15,38	8; 22,86	28; 21,37
Independence for basic ADL and dependence for instrumental ADL	7; 26,92	6; 23,08	6; 17,14	35; 26,72
Independence for ADL both basic and instrumental	11; 42,31	16; 61,54	21; 60	68; 51,91
Total	26; 100	26; 100	35; 100	131; 100

Adherence problems were observed in 51.83% of the total patients, 57.69% in the smoking group, 65.38% in alcoholism, 65.71% in smoking and alcoholism, and 44.27% in the control group. In the OR analysis, the group that presented both smoking and alcoholism habits was the one with the highest chance (OR: 2.41; CI: 1.11-5.25) of adherence problems, when compared to the control group, which is the only group with a statistically significant result (**Table 3**).

Table 3 - Association between adherence to pharmacotherapy according to alcoholism and smoking habits.

Group	Adherence problem		Total	OR	CI	p-value
	Yes	No				
Smoking	15	11	26	1,72	0,73- 4,02	0,21
Alcoholism	17	9	26	2,38	0,99- 5,73	0,05
Smoking + Alcoholism	23	12	35	2,41	1,11- 5,25	0,03
Control group	58	73	131	*	*	*
Total	113	105	218			

Subtitles: OR: Odds Ratio comparing the considered group with the control group; CI: 95% confidence interval.

DISCUSSION

Herein, the patients' average age was 72.54 years old, which is an expected average when dealing with elderly people. The result was similar to the cross-sectional epidemiological study performed with the elderly population in the *São Paulo* city, where the average age of the participants was 71.33 years old.[13]

The presence of illiteracy in all groups was identified, suggesting that this might be a problem in the study population. It is understood that illiteracy is still present in the current Brazilian framework and is considered a social challenge. According to the *Instituto de Pesquisa Econômica Aplicada (IPEA)* [Institute for Applied Economic Research], illiteracy rates would decrease over time, but would remain high, due to the presence of illiterates of older generations, low quality of education and even inefficiency in determining current rates.[14]

Illiteracy can be absolute, defined by the inability to read or write simple text, or functional, which is determined not only by reading or understanding simple texts, but also texts with graphs and tables, as well as elementary calculations used in everyday life.[13] It is understood that this can be a complex factor that influences the patient's compression concerning the use of medicines and, for instance, the ability to read boxes of medicines, differentiate them, and administer them.

Although the present study does not intend to identify an association between illiteracy and smoking habits, it is understood that illiteracy can influence smoking, considering that the population is strongly influenced by the media and educational materials that encourage or contraindicate smoking by through written language. In 2008, a survey carried out by the *Pesquisa Nacional por Amostras de Domicílios (PNAD)* [National Household Sample Survey] found that the *Ceará* State is one of the Brazilian States that has the most isolated illiterates, and that this is a factor that can influence the considerable number of smokers.[15]

The profiles of smokers, alcohol users and, both smokers and alcohol users, had a higher percentage of men, while the control group had a higher percentage of women. These results are similar to the study performed with elderly residents in the *Porto Alegre* city and the study carried out with non-institutionalized elderly people.[16,17] In the first, considering the 832 interviewees, alcoholism and smoking prevailed among men, 11.7% and 20.8%, respectively. In the second study, considering the 317 employees, a higher prevalence of smoking and alcoholism was also observed in males, 67.5% and 61.7%, respectively, with 76.3% of individuals with specific habits. The authors concluded that the male population consumed more alcohol and cigarettes than the female population, and this was also observed in the control group, where the female proportion was higher than the male.[17] It is important to note that the sample in the present study was homogeneous for both genders, consisting of 51.83% of female patients and 48.17% of male patients.

Unlike men, it is noted that women have healthier behaviors aimed at prevention. Hence, it is evident that lifestyle is one of the factors that influences health and, consequently, the use of medications and adherence to them.[18]

The average length of stay was high, which may be a characteristic of the patient profile of the hospital under study. This assists patients with clinical-surgical, traumatological and non-traumatological urgency, which can lead to a longer hospital stay when these complications are present in population subgroups with chronic diseases, such as the elderly population. In the literature there are records that habits such as alcoholism and smoking have a larger chance of showing more severe clinical conditions, reflecting a longer hospital stay.[19,20]

According to the report published by the World Health Organization (WHO) in 2015, increasing tobacco taxes is one of the measures that can be taken to reduce tobacco consumption on a global scale.[21] Furthermore, reducing smoking is one of the priorities of the life pact, which is the commitment among the *Sistema Único de Saúde (SUS)* [Brazilian Unified Health System] managers around priorities that have an impact on the health of the Brazilian population. The objective of these guidelines is to develop strategies aimed at health promotion.[22] However, it is identified that this habit is still a reality among the subjects under study.

It is noteworthy that, when talking about the elderly population, the family is a fundamental element for biological, psychological and social well-being. Family insufficiency, which is characterized by the absence of the family, has been associated with a decrease in quality of life, worsening morbidity and even an indicator of mortality risk.[11,23] According to a study performed at the hemodialysis unit in the Northeast from Brazil, family support was one of the strategies that patients with Chronic Kidney Failure developed to better cope with and live with the disease.[24] When analyzing the present study, family insufficiency was observed in all groups. An analysis carried out with illiterate people who live with others who are literate in the family, indicated a lower probability of them being smokers (ranging from -9.5 pp to -7.0 pp) than illiterates who do not live with literate people.[15] The family presence is an important factor for the individual to have good habits, then promoting physical, social and emotional well-being for him.

Another important aspect is the degree of dependence on ADL. Here, almost half of the population showed some type of dependence for ADL. With the increase in the population's survival, it is expected that the prevalence of chronic degenerative diseases will also increase, which are associated with the loss of the elderly's ability to perform basic activities in isolation, requiring a caregiver to perform them.[25]

It is observed that the group of both smokers and alcohol users, has a larger chance (OR: 2.41) of having adherence problems compared to the control group. Smoking and drinking habits alter the metabolism of certain medications, leading to patients' resistance to continuing with pharmacotherapy, due to the interactions between alcohol and tobacco with the drug.[5,26] Furthermore, the group of both smokers and alcohol users was the only one that presented statistical significance when analyzing the confidence interval

(1.11 - 5.25) and the p-value (0.03), thus being able to reject the null hypothesis, that the probability of occurrence of adherence problem in the group of smokers and alcoholics it is the same as in the control group.[26,27]

Polypharmacy is a factor that can hinder adherence to pharmacotherapy, especially in elderly patients, which may be associated with the likelihood of increased vulnerability to adverse events in this group.[28] Adherence to treatment depends on the success of the proposed therapy, the cure of a disease, the control of a chronic disease and the prevention of a pathology.[29] Studies that address adherence as the main theme show that to obtain satisfactory clinical results associated with better rates it is necessary to have the presence of a multidisciplinary team.[24] However, studies connecting smoking and alcoholism with treatment adherence are still scarce.

The present study has limitations related to the classification of the degree of smoking and alcohol consumption of the participants, as this information was collected in the CPP, without specifying how many packs of cigarettes and the amount of alcohol consumed by patients daily. Moreover, the association between adherence to pharmacotherapy in the group of smokers and alcohol users was not statistically significant, and this may have occurred because the sample in these groups was relatively small. Additionally, pharmacists recorded some variables based on the reports of patients and family members, and it is not possible to prove the veracity of this information. Nevertheless, in clinical practice, patients' reports are the main factors that guide the different behaviors of health professionals and should be considered in the care process. Herein, illiteracy was identified in the CPP, without specifying whether patients have absolute or functional illiteracy.

The thematic addressed as adherence to pharmacotherapy and alcoholism and smoking habits is still poorly explored in the literature, and the present study is considered preliminary. It is recommended to carry out studies with a broader outline aimed at exploring this issue, which still presents several gaps in the scientific environment.

CONCLUSIONS

It was found that, when compared to the control group, the group with both smoking and alcoholism habits was the one with the highest chance of adherence problems. Nonetheless, studies that link smoking and alcoholism with treatment adherence are still scarce. It is expected that this work can contribute to stimulating further studies addressing the considered matter.

REFERENCES

1. Bloom DE, Chatterji S, Kowal P, Lloyd-Sherlock P, McKee M, Rechel B, et al. Macroeconomic implications of population ageing and selected policy responses. Lancet [periódicos na Internet]. 2015 Fev 14. [acesso 19 de abril de 2019]; 385(9968): 649-657. Available at:https://www.sciencedirect.com/science/article/pii/S0140673614614641?via%3Dihub
2. Chiang HL, Tan JY, Chiang LC. Polypharmacy issues in older adults. Hu Li Za Zhi. 2014 Jun; 61(3): 97-104.
3. Ooi K. Appropriate use of medicine and polypharmacy in older patients. Yakugaku Zasshi [periódicos na Internet]. 2019. [acesso 19 de abril de 2019]; 139(4): 571-574. Available at: https://www.ncbi.nlm.nih.gov/pubmed/30930390
4. Korzeniowska K, Cieślewicz A, Zasadzka E, Borowicz A, Pawlaczyk M, Jabłecka A. Analysis of the problem of addiction in the elderly. Przegl Lek. 2015; 72(3): 111-114.
5. Holton A, Boland F, Gallagher P, Fahey T, Kenny RA, Cousins G. Longitudinal prevalence of potentially serious alcohol-medication interactions in community-dwelling older adults: a prospective cohort study. Eur J Clin Pharmacol [periódicos na Internet]. 2019 Abr. [acesso 19 de abril de 2019]; 75(4): 569-575. Available at: https://link.springer.com/article/10.1007%2Fs00228-018-02608-7
6. Silva LCC, Araujo AJ, Queiroz AMD, Sales MPU, Castellano MVCO. Controle do Tabagismo: desafios e conquistas. J Bras Pneumol [periódicos na Internet]. 2016. [acesso 19 de abril de 2019]; 42(4): 290-298. Available at: http://www.scielo.br/pdf/jbpneu/v42n4/pt_1806-3713-jbpneu-42-04-00290.pdf
7. Gellad WF, Thorpe CT, Steiner JF, Voils CI. The myths of medication adherence. Pharmacoepidemiol Drug Saf [periódicos na Internet]. 2017 Dez. [acesso 19 de abril de 2019]; 26(12): 1437–1441.Available at: http://bioethics.pitt.edu/sites/default/files/event-image/Gellad%20et%20al%20-%20Myths%20of%20medication%20adherence.pdf
8. Nelson HN, Borrero S, Lehman E, Vellot DL, Chuang CH. Measuring oral contraceptive adherence using self-report versus pharmacy claims data. Contraception [periódicos na Internet]. 2017 Dez. [acesso 19 de abril de 2019]; 96(6): 453-459. Available at: https://www.ncbi.nlm.nih.gov/pubmed/28882679
9. Stirratt MJ, Dunbar-Jacob J, Crane HM, Simoni JM, Czajkowski S, Hilliard ME, et al. Self-report measures of medication adherence behavior: recommendations on optimal use. Transl Behav Med [periódicos na Internet]. 2015 Dez. [acesso 19 de abril de 2019]; 5(4): 470–482. Available at: https://www.ncbi.nlm.nih.gov/pubmed/26622919
10. Santos FS, Freitas PE, Costa JM. Associação entre ocorrência de reações adversas e realização de intervenções farmacêuticas em um hospital de ensino. Rev Bras Farm Hosp e Serv Saúde [periódicos na Internet]. 2016. [acesso 19 de abril de 2019]; 7(2): 8-14. Available at: http://www.sbrafh.org.br/rbfhss/public/artigos/20160702010000900BR.pdf
11. Pinto AH, Lange C, Pastore CA, Llano PMP, Castro DP, Santos F. Functional capacity to perform activities of daily living among older persons living in rural areas registered in the family health strategy. Ciênc Saúde Colet [periódicos na Internet]. 2016. [acesso 19 de abril de 2019]; 21(11): 3545-3555. Available at: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1413-81232016001103545
12. Souza A, Pelegrini TS, Ribeiro JHM, Pereira DS, M, MA. Conceito de Insuficiência familiar na pessoa idosa: análise crítica da literatura. Rev Bras Enferm [periódicos na Internet]. 2015. [acesso 19 de abril de 2019]; 68(6):864-873. Available at: http://www.scielo.br/pdf/reben/v68n6/0034-7167-reben-68-06-1176.pdf
13. Barros TVP, Santos ADB, Gonzaga JM, Lisboa MGC, Brand C. Capacidade funcional de idosos institucionalizados: revisão integrativa. ABCS Health Sci [periódicos na Internet]. 2016. [acesso 19 de abril de 2019]; 41(3): 176-180. Available at: https://www.portalnepas.org.br/abcshs/article/view/908
14. Freitas FFQ, Beleza CMF, Furtadp IQCG, Fernandes ARK, Soares SM. Análise temporal do estado funcional de idosos do estado da Paraíba. Rev Bras Enferm [periódicos na Internet]. 2018. [acesso 19 de abril de 2019]; 71(2): 905-911. Available at: http://www.scielo.br/pdf/reben/v71s2/pt_0034-7167-reben-71-s2-0905.pdf
15. Ribeiro FG, Carraro A. Tabagismo e Externalidades da Alfabetização no Ceará. Rev de Economia [periódicos na Internet]. 2014. [acesso 19 de abril de 2019]; 40(2): 150-172. Available at: https://revistas.ufpr.br/economia/article/view/38238
16. Barbosa MB, Pereira CV, Cruz DT, Leite ICG. Prevalência e fatores associados ao consumo de álcool e de tabaco em idosos não institucionalizados. Rev Bras Geriatr Gerontol [periódicos na Internet]. 2018 Mar. [acesso 19 de abril de 2019]; 21(2): 123-133. Available at: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1809-98232018000200123&lng=pt&nrm=iso&tlng=pt

17. Sabry MODS. Tabagismo e etilismo em funcionários da Universidade Estadual do Ceará J Pneumol [periódicos na Internet]. 1999. [acesso 19 de abril de 2019]; 25(6): 313-320. Available at: http://www.scielo.br/pdf/jpneu/v25n6/v25n6a04.pdf

18. Brito AMM, Camargo BV. Representações sociais, crenças e comportamento de saúde: um estudo comparativo entre homens e mulheres. Temas em Psicol [periódicos na Internet]. 2011 Jun. [acesso 19 de abril de 2019]; 19(1): 283–303. Available at: http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S1413-389X2011000100023

19. Miquel L, Manthey J, Rehm J, Vela E, Bustins M, Segura L, et al. Risky alcohol use: the impact on health service use. Eur Addict Res [periódicos na Internet]. 2018. [acesso 19 de abril de 2019]; 24(5): 234-244. Available at: https://www.karger.com/Article/Abstract/493884

20. Bene AZ, Nagayoshi BA, Gritti CC, Pinheiro DM, Bianchin MA, Lamari NM. Rehospitalizacion of patients with chronicles diseases: personal antecedents, use of drugs and independence in activities of daily living. Med Reabil. 2015 Dez; 34(3): 57-62.

21. WHO. WHO Report On The Global Tobacco Epidemic. 2015. [acesso em 2018 nov 01]. Available at: https://www.who.int/tobbaco/global_report/2015/en/.

22. Brasil. Ministério da Saúde. Diretrizes Operacionais pactos pela Vida, em defesa do SUS e de Gestão. 2006. [acesso em 2018 nov 01]. Available at: www.saude.mppr.mp.br/arquivos/File/volume1.pdf.

23. Horta ALM, Daspett C, Egito JHT, Macedo RMS. Vivências e estratégias de enfretamento de familiares de dependentes. Rev Bras Enferm [periódicos na Internet]. 2016 Dez. [acesso 19 de abril de 2019]; 69(6): 1024-30. Available at: http://www.scielo.br/pdf/reben/v69n6/0034-7167-reben-69-06-1024.pdf

24. Silva RAR, Souza VL, Oliveira GJN, Silva BCO, Rocha CCT, Holanda JRR. Estratégias de enfrentamento utilizadas por pacientes renais crônicos em tratamento hemodialítico. Esc Anna Nery Rev Enferm [periódicos na Internet]. 2016. [acesso 19 de abril de 2019]; 20(1): 147-154. Available at: http://www.scielo.br/pdf/ean/v20n1/1414-8145-ean-20-01-0147.pdf

25. Fuhrmann AC, Bierhals CCBK, Santos NO, Paskulin LMG. Association between the functional capacity of dependant eldery people and the burden of family caregivers. Rev Gaúcha Enferm [periódicos na Internet]. 2015 Mar. [acesso 19 de abril de 2019]; 36(1): 14-20. Available at: http://www.scielo.br/scielo.php?pid=S1983-14472015000100014&script=sci_arttext&tlng=pt

26. Chiolero A, Faeh D, Paccaud F, Cornuz J. Consequences of smoking for body weight, body fat distribution, and insulin resistance. Am J Clin Nut [periódicos na Internet]. 2008. [acesso 19 de abril de 2019]; 87(4): 801–809. Available at: https://www.ncbi.nlm.nih.gov/pubmed/18400700

27. Wagner MB, Jacques SM. Medidas de associação em estudos epidemiológicos: risco relativo e odds ratio. J Pediatr [periódicos na Internet]. 1998. [acesso 19 de abril de 2019]; 74(1): 247-251. Available at: https://www.lume.ufrgs.br/bitstream/handle/10183/54354/000246332.pdf?sequence=1

28. Rodrigues MCS, Oliveira C. Interações medicamentosas e reações adversas a medicamentos em polifarmácia em idosos: uma revisão integrativa. Rev Latinoam Enferm [periódicos na Internet]. 2016. [acesso 19 de abril de 2019]; 24: e2800. Available at: http://www.scielo.br/scielo.php?pid=S0104-11692016000100613&script=sci_arttext&tlng=pt

29. Abreu DPG, Santos SSC, Silva BT, Gomes GC, Cruz VD, Tier CG. Prevalência de adesão à terapêutica medicamentosa em idosos e fatores relacionados. Rev Bras Enferm [periódicos na Internet]. 2016 Abr. [acesso 19 de abril de 2019]; 69(2): 335-42. Available at: http://www.scielo.br/pdf/reben/v69n2/0034-7167-reben-69-02-0335.pdf

Received in: 17/10/2018
Required revisions: 28/03/2019
Approved in: 18/05/2019
Published in: 15/03/2021

Corresponding author
Jéssica Soares Malta
Address: Rua Prof. Moacir Gomes de Freitas, Pampulha
Belo Horizonte/MG, Brazil
Zip code: 31270-901
Email address: malta.jessicas@gmai.com
Telephone number: +55 (31) 98728-0678

Disclaimer: The authors claim to have no conflict of interest.