

Estimated economic impact of implementing exclusive palliative care in an intensive care unit

Impacto econômico estimado da implementação de cuidados paliativos exclusivos numa unidade de cuidados intensivos

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Ana Paula Niespodzinski

Bachelor of Medicine

Institution: University of Joinville Region – UNIVILLE, Joinville, SC, Brazil

Address: Rua Paulo Malschitski Street, 10 – North Industrial Zone, Zip-code

CEP: 89710-190

E-mail: anapaulan.sbs@gmail.com

Patrícia Andréa Simpício

Bachelor of Medicine

Institution: University of Joinville Region – UNIVILLE, Joinville, SC, Brazil

Address: Rua Paulo Malschitski Street, 10 – North Industrial Zone, Zip-code

CEP: 89710-190

E-mail: patriciandreas@yahoo.com.br

Paulo Victor Zattar Ribeiro

Bachelor of Medicine

Institution: University of Joinville Region – UNIVILLE, Joinville, SC, Brazil

Address: Rua Paulo Malschitski Street, 10 – North Industrial Zone, Zip-code 89710-190

E-mail: paulovzattar@gmail.com

Felipe Pfuetsenreiter

Intensive Care Doctor

Institution: Hospital Center Unimed, SC, Brazil

Address: Rua Orestes Guimarães Street, 905, Zip-code 89204-061.

E-mail: felipepf@yahoo.com

Álvaro Koenig

MSc. Pediatrics, Joinville National Confederation of Medical Cooperative Research

Center Coordination, SC, Brazil

Address: Rua Orestes Guimarães Street, 905, Zip-code CEP: 89204-061

E-mail: koenig@netvision.com.br

Eduardo Manoel Pereira

MSc. Pharmacology - Department of Medicine

Institution: University of Joinville Region – UNIVILLE, Joinville, SC, Brazil

Address: Rua Paulo Malschitski, 10 – North Industrial Zone, Zip-code CEP: 89710-190

E-mail: eduardo_manoel@yahoo.com.br

ABSTRACT

Palliative care (PC) is a modality of care for patients with no possibility of cure for a disease or terminally ill. The objective of this care model is to provide integral care to the patient and their family, involving the multidisciplinary team in caring, in addition to pursuing strategies so that the interventions conducted promote comfort and well-being for those involved. This is a retrospective cross-sectional study in which the total expenses and per day of hospitalization with exams and medications of patients before and after being included in the PC protocol of the institution were evaluated. All patients who met the inclusion criteria in the PC protocol and were likely to change the therapeutic focus to exclusive PC, oncologic and non-oncologic, were included. The study proved to be extremely relevant in the quantitative comparison of costs in adult ICU before and after PC, showing a reduction regarding cost/day with exams and medications of 95% and 44% respectively, and mean hospital stay was reduced from 14 to 6 days. It is noteworthy that 16% of those patients did not die in the ICU environment, representing a possible humanization of care and improvement in the quality of visits and family interaction. The results of this study indicate a significant decrease in costs with the correct implementation of exclusive PC, supporting the need for introduction of protocols and earlier and more comprehensive insertion of patients in PC.

Keywords: palliative care, costs and cost analysis, hospital, intensive care unit, end-of-life care.

RESUMO

Cuidados paliativos (CP) fundamentam uma modalidade de assistência ao paciente sem possibilidades de cura de uma doença ou em terminalidade. O objetivo desse modelo assistencial é realizar um atendimento integral ao paciente e à família, envolvendo a equipe multidisciplinar na assistência, além de buscar estratégias para que as intervenções realizadas sejam promotoras de conforto e bem-estar aos envolvidos. Este é um estudo transversal, retrospectivo no qual foram avaliados os gastos totais e por dia de internação com exames e medicamentos dos pacientes antes e após serem incluídos no protocolo de CP da instituição. Foram incluídos todos os pacientes que preencheram os critérios de inclusão no protocolo de CP e que eram passíveis de mudança do foco terapêutico para CP exclusivos, oncológicos e não oncológicos. O estudo mostrou-se extremamente relevante no sentido comparativo quantitativo em relação aos custos em UTI adulta pré e pós CP, evidenciando redução referente ao custo/dia com exames e medicamentos de 95% e 44% respectivamente, e média de tempo de internação reduziu-se de 14 para 6 dias. Ressalta-se que 16% de tais pacientes não vieram ao óbito em ambiente de UTI, representando uma possível humanização do cuidado e melhoria qualidade de visita e interação familiar. Os resultados deste estudo indicam uma diminuição significativa de custos com a implementação correta de CP exclusivos, sustentando a necessidade de introdução de protocolos e de realização mais precoce e abrangente da inserção dos pacientes em CP.

Palavras-chave: cuidado paliativo, custos e análise de custos, hospital, unidades de terapia intensiva, assistência no fim da vida

1 INTRODUCTION

PC is the foundation of a modality of care for patients with no possibility of cure for a disease or who are terminally ill. The objective of this care model is to provide integral care to the patient and the family, involving the multidisciplinary team in the assistance, in addition to seeking strategies so that the interventions performed promote comfort and well-being to those involved in this process. (1)

It is important to consider that the excessive cost of new medical technologies carries profound consequences for the health care budget when considered for patients undergoing long-term hospitalization. The implications include patient and family suffering, frustration with therapies that do not always bring results, despite possibly promoting artificial prolongation of life span. (2)

Although the fundamental goal of intensive care is to revert the situation of the admission of the patient completely or partially, sometimes this is not possible. At this point, the therapeutic goal is modified, and the fundamental basis of the new approach is the reduction of suffering and the continuation of care, including those at the end of life, the so-called PC, which are pharmacological and non-pharmacological measures that, with a focus on dignity and comfort, address the needs of patients, of family members and of the care team in physical, psychosocial, and spiritual areas. (3)

Lourençato et al. described that about 1% of the population dies each year. Of those cases, most are predictable and, if eligible individuals were identified and included in PC programs, they could receive more adequate care with possible improvement in quality of life. (2)

Ribeiro et al. described that nearly twenty million people worldwide need PC, making the provision of this service essential. Moreover, it is noteworthy that health care in the last year of life is higher and may account for up to 30% of total annual expenses, since readmission rates for management of complications of acute problems are also high in the last 30 days of life. Hence, the adoption of PC can also translate into savings, since its measures can reduce the number of admissions in Intensive Care Units (ICU), an area that accounts for a significant percentage of hospital expenses. (4)

The observational, prospective study conducted by Peter May et al in 2015 analyzed data from patients diagnosed with advanced cancer admitted to five US hospitals from 2007 to 2011. The hypothesis of the study was whether the time it took to implement PC in these patients had an impact on hospital costs. It was observed that care within 6 days reduced direct costs by 14% compared to no intervention, and care within 2 days

reduced costs by 24% compared to no intervention. In a secondary analysis, it was also concluded that the cost savings are attributable to a combination of shorter length of hospitalization and its complexity, also reducing costs for laboratory tests regardless the length of stay, and ICU and pharmacy costs when PC protocols are implemented early. (5)

An observational study evaluated the association between consultation with the PC team and hospital costs for patients with advanced cancer in 12 Dutch hospitals. Although the study found no effect on hospital costs, it was noted that consultation with the PC team occurred very late in the disease trajectory of an advanced cancer patient, and that possibly, if consultation occurred in the earlier stages of the disease, the outcome could not only be beneficial to patients, but also reduce the costs of care. (6) It is therefore understood that concepts such as dysthanasia and orthothanasia are also subjectively evaluated. Dysthanasia is an unreasonable and artificial prolongation of life leading to suffering for the patient and family. Orthothanasia, on the other hand, is death considered correct, following the natural history of the disease. (7)

The great majority of studies evaluating cost savings with the introduction of PC when compared to standard oncology care are concentrated in countries such as the United States, Canada, and England. Developing countries still lack this information (8). Furthermore, even in developed countries, most studies focus on specific PC services for cancer patients.

Considering the need to explore all the utilities of PC implementation in hospitals, the present study aimed to evaluate the estimated economic impact of implementing an exclusive PC protocol in ICU patients of a private hospital in the northern region of the State of Santa Catarina - Brazil.

2 METHODOLOGY

This was a retrospective cross-sectional study in which the total and per day expenditures of hospitalization for tests and medications of patients were evaluated before and after they were included in the institution's exclusive PC protocol.

The research was conducted in the Adult ICUs of a private hospital. Data were collected from the TASY electronic medical records of patients admitted during the period from April 2010 to August 2019.

All patients who met the inclusion criteria of the protocol and who were likely to change their therapeutic focus to exclusive PC were included. The ICU multidisciplinary

team evaluates the patients according to the following criteria: encephalopathy after cardiorespiratory arrest (CA) without clinical response even with optimized treatment, stage IV cancer, terminal chronic obstructive pulmonary disease (COPD), terminal congestive heart failure (CHF) with ejection fraction (EF) < 20%, dementia with severe neurological sequelae and terminal cirrhosis. Exclusion criteria were: patients under 18 years of age and those in whom the family or the medical team did not agree to change the therapeutic focus.

After triage, according to the protocol, a change of therapeutic focus to exclusive PC was instituted and the measures taken as part of the exclusive palliative approach were: palliative extubation, withdrawal of vasoactive drugs, hemodialysis, antibiotics and other non-essential supportive medications. Through a standard and structured evolution, therapeutic goals were established with emphasis on optimization of analgesia, adequacy of nutrition and care of the patient and family.

The main analysis was to evaluate the difference in total costs with imaging and laboratory exams and medications in the periods before and after the inclusion of the patient in PC. The costs were expressed in Brazilian reais (BRL) based on the value of 2019. The values for medications were calculated based on the national pharmaceutical index BRASÍNDICE. The exams were adjusted by the TUSS table. Accordingly, as a secondary outcome, the differences in average costs with exams and medications per day of hospitalization in the periods before and after the intervention were calculated, which was designated as cost/day.

Demographic, clinical, and cost data of patients who met the inclusion criteria were obtained directly from the electronic medical record using Business Intelligence® and described in an Excel spreadsheet. Data analysis was performed in Stata IC14®. Categorical variables are expressed as proportions and continuous variables are presented as means and standard deviations or medians with interquartiles, depending on the normality of their distribution.

Comparison between hospital length of stay and costs before and after inclusion of the patient in exclusive PC was calculated using the Wilcoxon test for paired samples. A 95% significance level was applied for all comparisons.

3 RESULTS

Among a total of 106,696 patients admitted to the hospital in the period considered, 8,856(8.3%) were admitted to ICUs and of these, 251(0.23%) were followed-

up by the exclusive PC protocol. Patients included in PC had a mean age of 72.3 ± 17.7 years, 48.6% were male and 51.4% female. The median time to admission of the patient to the palliative care protocol was 21 days (± 21 -interquartile range). That is, from the time of admission to the hospital until the change of focus, the patients were not necessarily in an ICU environment from the beginning. The main diagnoses were cardiovascular diseases, infectious diseases, pulmonary diseases, and cancers. Patients remained on average follow-up for 13 ± 18 days (interquartile range) and most died. These data are detailed in table 1.

Table 1 - Sociodemographic and clinical characteristics of patients included in the Palliative Care protocol.

Variable	Total
Age (years) (mean \pm SD)	72.3 \pm 17.7
Male gender - n (%)	122 (48.6)
Female gender - n (%)	129 (51.4)
ICU admission diagnosis (n) (%)	
Cardiovascular	76 (30.4)
Infectious Diseases	64 (25.3)
Lung	52 (20.7)
Cancer	24 (9.7)
Renal	15 (5.8)
Neurological	08 (3.1)
Other	13 (5)
Time (days) until admission to PC protocol (median \pm IQ)	21 (± 21)
Outcome - n (%)	
Death	212 (82.8)
Discharge	39 (15.3)
Transfer	5 (1.9)
Time to outcome (days - mean \pm standard deviation)	13 (± 18)

The length of stay in ICU and the costs of tests and medications before and after inclusion can be seen in table 2. The median ICU length of stay was significantly shorter after the protocol change, with a reduction from 14 to 6 days ($p < 0.001$). Direct costs related to tests and medications were 97% and 71% lower, respectively, after adoption of CP.

The difference in cost/day both for exams and medication after the insertion of patients in the PC protocol showed a 95% decrease regarding the cost/day of exams and 44% of cost/day of medication (statistically significant difference - $p < 0.001$). Regarding mortality, approximately 16% of patients did not die in the ICU environment after changing the focus to PC exclusively.

Table 2 - Cost Differences before and after PC.

Variable	Length of stay before PC	Length of stay after PC	p value
	(Median (IQ))	(Median (IQ))	
Length of hospitalization (days)	14 (7 to 29)	6(2 - 16)	< 0,001
Total cost of exams (BRL)	2767(1135 to 5786)	75(0 - 406)	< 0,001
Total cost of medication (BRL)	26969(9834 to 62413)	7738 (1292 to 20669)	< 0,001
Cost/day of tests (BRL)	189 (122 to 285)	10 (0 to 34)	< 0,001
Cost/day of medication (BRL)	2052(1113 to 3152)	1359 (436 to 2047)	< 0,001

4 DISCUSSION

Regarding the population studied, there was a small majority of women, and the predominant age range was the elderly. Moreover, with respect to diseases, a high number of cardiovascular and infectious diseases was perceived, which comprised almost half of the identified pathologies and, at an intermediate level, pulmonary causes. Oncological, neurological, and renal patients comprised a little less than 15% of the sample.

In view of the aging population, there has been an important increase in chronic and degenerative diseases, several of which are responsible for high rates of morbidity and mortality in patients over 65 years of age, such as cardiovascular and oncological diseases (9). A prospective longitudinal study conducted at Hospital de Câncer Aldenora Bello in São Luís (MA), which included one hundred patients in PC found that more than half of the sample studied was female (77%) (10). This finding agrees with the findings of the present study and is corroborated by Carneiro et al (11), who also described a higher prevalence of chronic diseases in the elderly among women. Rodrigues and Ferreira inferred that most oncology patients in PC were female due to detection of specific neoplasms (cervical cancer), while Souza et al suggest that more cancer cases in women may be related to larger female population in specific regions. Carvalho et al. 2016 recall that women also tend to seek health services earlier than men. Castôr et al, when

interviewing 100 PC oncology patients, found a prevalent age range between 51-60 years (34% of the sample) and more than half (77%) were female patients (12,13,10). Bastos et al. also found more cases of women in PC due to neoplasms in a study conducted in a reference hospital in the state of Pará, as well as age range above 60 years, findings that converge with the present study (14).

This study highlights the cost difference in the scope of change of focus for exclusive PC in adult ICU. In general, it was possible to observe a significant difference in the evaluation of cost/day of exams and medications. Thus, as pointed out by Lourençato et al, it is known that the excessive cost of new medical technologies brings profound consequences regarding the health system budget, when considered for patients undergoing long-term hospitalization, which also contributes to their suffering and that of their families. This may involve frustration, for instance, with therapies that do not always produce results, since the benefits are uncertain, and despite possibly promoting the artificial prolongation of life span, they are not always accompanied by a significant impact on the patient's quality of life (2).

According to Kyeremanteng et al, it is estimated that 20% of hospital expenses are related to ICUs, but this does not always guarantee increased survival or improved quality of life. In this perspective, a study evaluated that 20% of deaths occur inside ICUs, which suggests that even with all the resources used, in many cases it is difficult to interfere in the natural process of the disease. Regarding the patient, some studies point out that PC management improves symptom control and improves the quality of life of patients (15,16,17).

A study that compared two groups: the first with multiple organ failure and the second with global cerebral ischemia, observed that the length of ICU stay was similar, with no significant reduction in ICU costs, but significant reduction in total hospital costs (18). Okon et al, compared patients on continuous renal replacement therapy in the ICU and who received CP consultation compared to those who did not and found no significant difference in costs. However, Norton et al, observed the impact of CP consultation in patients with high ICU susceptibility, which resulted in shorter ICU stay and ICU stay and significant reduction in ICU costs, but no difference in mortality. (18, 19)

Mazutti et al. state that in Brazil, in general, the length of stay in ICU until death is longer than in other countries, possibly due to low adherence to therapeutic limits. Based on this study (14), it was also observed that patients who entered PC and had limitations to advanced life support (orotracheal intubation, use of vasoactive drugs and

resuscitation) had longer hospital and ICU stay compared to those who did not undergo this intervention. However, after adherence to the limitation of therapeutic interventions, 73.3% of the patients died outside of the ICU, that is, they remained longer with their families in the last moments, with more dignity in the final process of life and, even if it was necessary to maintain some type of procedure to minimize suffering, they could be spared excessive procedures with no benefits in the outcome of the disease (20).

The present study is relevant in the quantitative comparative sense in relation to costs in adult ICU before and after exclusive palliative care, verifying a decrease of 95% regarding the cost/day with exams and 44% in the cost/day with medications. Nonetheless, some limitations should be pointed out: although the PC insertion protocol is strict and based on scientific literature, the study was retrospective and cross-sectional. Therefore, there may be time bias in relation to possible late selection of patients for exclusive PC, or still, social, family, and individualized clinical conduct factors that caused the patient to undergo a greater number of interventions before entering the protocol. Consequently, the present study could not evaluate and compare the qualitative conducts performed in each patient.

It is recognized that it would have made the interpretation of the benefits even more specific if an assessment instrument on the improvement of quality of life after insertion in exclusive PC had been used, however, the retrospective nature of the present study involved the analysis of data that were recorded without the monitoring of a standardized scale that would make such an assessment, for this reason it is possible that the accuracy of the data of costs/day may be less than desired. Still, in view of the various clinical pictures and presentations analyzed, the generalization among all patients may present confounding biases in this sense.

Despite this, it stands out the fact of a concrete decrease in costs and consequent significant reduction in unnecessary and sometimes iatrogenic interventions and medications performed in patients who are candidates for PC but remain in traditional intensive care. As such, despite the indicated limitations, the study brings some important and congruent information for clinical practice: one of which is the remarkable average length of stay, which reduced from 14 to 6 days, and is linked to a decrease in family and social repercussions, which is allied to the data that 16% of patients did not die in the ICU environment, representing a possible humanization of care and allowing better quality of the visit and family interaction. Therefore, being in exclusive PC in an ICU does not

necessarily mean that the patient will die, but rather that the patient will be cared for in a more humanized way with the main purpose of comfort and well-being.

Beyond the financial issue, the PC movement brings back the possibility of re-humanizing dying, opposing the idea of death as the enemy to be fought at all costs. In other words, death is seen as part of the process of life, and in illness, treatments should aim at the quality of this life and the well-being of the person, even when a cure is not possible. Nevertheless, faced with this impossibility, prolonging life is not always the best thing, and we are not talking about euthanasia, as many people believe (21). Human beings are only humans, they only fulfill and accomplish their essential humanity to the extent that they question themselves about the meaning of their existence. As we question ourselves about death, we also question life and humankind itself. When the latter thinks about death, it is the meaning of life, of their life, that is swept away in their reflection. Death comes to compress our life, to give urgency and meaning to everything we do, and thus ends up brightening one's existence, in such a way that its light is not lost in a finite existence. For this reason, the existence of death is not necessarily bad (22). In fact, the humanization of death is not its rushing, nor its indefinite prolongation. If the discussion that is proposed is about what death with dignity is, the PC movement advocates that it is death without suffering, neither too fast nor too long (23).

5 CONCLUSION

The results of this study suggest that the adoption of PC practices resulted in a significant reduction in costs with exams and medications, length of stay and death in the ICU, supporting the benefits of cost reduction in the hospital environment and a dignified care, with less invasive and sometimes harmful interventions. For better characterization of the benefits, it is important to conduct studies of prospective nature and that also evaluate the improvement in the quality of life of patients and their families in this therapeutic modality.

REFERENCES

- Meneguim S, Ribeiro R. Dificuldades de cuidadores de pacientes em cuidados paliativos na estratégia da saúde da família. *Texto contexto - enferm.* [Internet]. 2016 [cited 13 october 2020]; 25(1):e3360014. Available from: [http://www.scielo.br/scielo.php?script=sci_arttext&pid=S010407072016000100312&lng=en.6.\(1\)](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S010407072016000100312&lng=en.6.(1))
- Lourençato FM, Santos AFJ, Ficher AMFT, Santos JC, Zoppi D, Giardini MH et al. Implantação de serviço de cuidados paliativos no setor de emergência de um hospital público universitário. *Revista Qualidade HC.* 2016; 1: 127-133 (2)
- Lima SF, Lamy ZC, Motta VBR, Roma TM, Gomes CMRP, Souza TP. Dinâmica da oferta de cuidados paliativos pediátricos: estudo de casos múltiplos. *Cadernos de Saúde Pública* [internet]. 2020. [cited 5 march 2021]; 36 (9): e00164319. Available from: <https://www.scielosp.org/article/csp/2020.v36n9/e00164319/pt/#> (3)
- Ribeiro SZRS, Vidal SA, Oliveira AG, Silva MIC, Vicente CD, Lopes LGF. Custos e qualidade de vida de paciente em cuidados paliativos. *Revista de Enfermagem UFPE on line* [internet]. 2018 [cited 5 march 2021]; 12 (6): 1688-95. Available from: <https://periodicos.ufpe.br/revistas/revistaenfermagem/article/view/234832/29213> (4)
- May P, Garrido MM, Cassel JB, Kelley AS, Meier DE, Normand C, et al. Prospective cohort study of hospital palliative care teams for in patients with advanced cancer: earlier consultation is associated with larger cost-saving effect. *J Clin Oncol* [internet]. 2015 [citado 19 april 2020]; 33 (25): 2745–2752. Available from: [https://ascopubs.org/doi/full/10.1200/JCO.2014.60.2334_\(5\)](https://ascopubs.org/doi/full/10.1200/JCO.2014.60.2334_(5))
- Brinkman-Stoppelenburg A, Polinder S, Olij BF, Berg B, Gunnink N, Hendriks MP et al. The association between palliative care team consultation and hospital costs for patients with advanced cancer: an observational study in 12 Dutch hospitals. *Eur J Cancer Care (Engl)* [internet], 2020 [cited 13 october 2020];29(3): 1-11. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/ecc.13198> (6)
- Cano CWA, Silva ALC, Barboza AF, Bazzo BF, MartinsCPa, Iandoli Júnior D et al. Finitude da vida: compreensão conceitual da eutanásia, distanásia e ortotanásia. *Rev. Bioét.* [Internet]. 2020 [cited 13 december 2020]; 28 (2): 376-383. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S198380422020000200376&lng=en (7)
- Rozman LM, Campolina AG, Lopez RM, Chiba T, Soárez PC. Palliative cancer care: costs in a Brazilian quaternary hospital. *BMJ Supportive & Palliative Care* [internet] 2019 [cited 13 december 2020]; 0: 1-8. Available from: <https://spcare.bmj.com/content/early/2019/10/15/bmjspcare-2019-001809> (8)
- Burlá C, Py L. Cuidados Paliativos: ciência e proteção ao fim da vida. *Cadernos de Saúde Pública* [internet]. 2014 [cited 5 march 2021]; 30 (6): 1-3. Available from: https://www.scielo.br/scielo.php?pid=S0102311X2014000601139&script=sci_arttext&tlng=pt (9).

Câstor KS, Moura ECR, Pereira EC, Alves DC, Ribeiro TS, Leal PC. Palliative care: epidemiological profile with a biopsychosocial look on oncological patients. *Revista BrJP* [Internet]. 2019 [cited 5 march 2021]; 2(1): 49-54. Available from: https://www.scielo.br/scielo.php?pid=S2595-31922019000100049&script=sci_abstract (10)

Carneiro LAF, Campino ACC, Leite F, Rodrigues CG, Santos GMM, Silva ARA. Envelhecimento populacional e os desafios para o sistema de saúde brasileiro. [E-book on the Internet] São Paulo: Instituto de Estudos de Saúde Suplementar; 2013 [cited 25 march 2021]. 6-107p. Available from: https://www.ibedess.org.br/imagens/biblioteca/939_envelhecimento2013.pdf (11)

Rodrigues JSM, Ferreira NMLA. Caracterização do perfil epidemiológico do câncer em uma cidade do interior paulista: conhecer para intervir. *Rev Bras Cancerol* [Internet]. 2010 [cited 5 march 2021]; 56(4): 431-4. Available from: <https://rbc.inca.gov.br/revista/index.php/revista/article/view/1464> (12)

Souza RS, Simão DAS, Lima EDRP. Perfil sociodemográfico e clínico de pacientes atendidos em um serviço ambulatorial de quimioterapia paliativa em Belo Horizonte. *REME Rev Min Enferm* [Internet]. 2012 [cited 5 march 2021]; 16(1): 38-47. Available from: <http://www.reme.org.br/artigo/detalhes/498> (13).

Bastos BR, Pereira AKS, Castro CC, Carvalho MMC. Perfil sociodemográfico dos pacientes em cuidados paliativos em um hospital de referência em oncologia do estado do Pará, Brasil. *Rev Pan-Amaz Saude* [Internet]. 2018 [cited 5 march 2021]; 9(2): 31-36. Available from: http://scielo.iec.gov.br/scielo.php?script=sci_arttext&pid=S2176-62232018000200031 (14)

Kyeremanteng K, Gadnon LP, Thavorn K, Heyland D, D'Egidio G. The impact of palliative care consultation in the icu on length of stay: a systematic review and cost evaluation. *J Int Care Medicine*. 2016; 33 (6): 346-353. (15)

El-Jawahri A, Greer JA, Temel JS. Does palliative care improve outcomes for patients within curable illness? A review of the evidence. *J Support Oncol*. 2011; 9(3):87-94 (16)

Khandelwal N, Kross EK, Engelberg RA, Coe NB, Long AC, Curtis JR. Estimating the effect of palliative care interventions and advance care planning on ICU utilization: a systematic review. *Crit Care Med*. 2015; 43(5): 1102-1111 (17)

Campbell ML, Guzman JA. A proactive approach to improve end-of-lifecare in a medical intensive care unit for patients with terminal dementia. *Crit Care Med*. 2004; 32(9): 1839-1843 (18).

Okon TR, Vats HS, Dart RA. Palliative medicine referral in patients undergoing continuous renal replacement therapy for acute kidney injury. *Ren Fail*. 2011; 33(7):707-717 (19).

Mazutti SRG, Nascimento AF, Fumis RRL. Limitação de Suporte Avançado de Vida em pacientes admitidos em unidade de terapia intensiva com cuidados paliativos. *Rev Bras Ter Intensiva*. 2016; 28 (3): 294-300 (20).

Pessini L, Bertachini L. Cuidados Paliativos: ética geriatria gerontologia comunicação e espiritualidade. *O mundo da saúde*. 2005; 9 (4): 491-509. (21)

Siman A, Rauch CS. A finitude humana: morte e existência sob um olhar fenomenológico-existencial. *Faculdade Sant'Ana em Revista*. 2017; 1 (2): 106-122(22).

Hermes HR, Lamarca ICA. Cuidados paliativos: uma abordagem a partir das categorias profissionais de saúde. *Ciênc e Saúde Colet*. 2013; 18 (9): 2577-2588(23).