

Nursing interventions for promoting self-care of persons with type 2 diabetes: an integrative review

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ABSTRACT

This is an integrative review aiming at analyzing and identifying the evidence available in the literature on nursing interventions to promote self-care for persons with type 2 diabetes mellitus. Data collection occurred in the Latin American and Caribbean Health Sciences (LILACS), MEDLINE (via EBSCO), Cumulative Index to Nursing and Allied Health Literature (CINAHL) and SCOPUS. The survey of articles occurred in July and August 2015 by two independent reviewers. The initial search identified 239 articles and eight of them met the selection criteria. Health education has emerged as a strategic field for implementing nursing interventions. Interventions with patient monitoring and that provided more care time were more satisfactory regarding self-care practices. The Orem's Self-Care Deficit Theory is indicated as a guide to direct the educator in self-care of diabetic persons.

Descriptors: Diabetes Mellitus, Type 2; Self Care; Nursing Care.

INTRODUCTION

The adherence to self-care in Diabetes mellitus (DM) is an extension of the person's behavior, regarding the use of medication, diets and physical activities that promote behavior change and the adoption of healthy lifestyle habits⁽¹⁾. Therefore it is necessary to provide that individual knowledge, skills, attitude and motivation for self-care; continuing education and family and healthcare professionals support are fundamental practices in this process⁽²⁾.

Educational activities with the patient, family and community have an essential role in diabetes

control, since its complications are closely linked to knowledge for proper daily personal care and healthy lifestyle⁽³⁾.

From the education perspective for behavioral change in the management of DM, nursing actions have the following objectives: identify behavioral change as a necessary condition for the proper management of the disease; understand that education for behavioral change occurs in formal education programs; list the factors that influence the behavior change; identify the behaviors of self-care necessary to disease control; seek ways to approach before the intervening factors; use self-care behavior in the evaluation of educational outcomes in the short, medium and long term⁽⁴⁾.

Education regarding diabetes can only be considered effective if it results in changes and/or acquisition of behaviors, otherwise, we will only give information. This education, in addition to being a continuous process of facilitation and access to knowledge, should promote the development of skills needed for self-care and management of diabetes by the patient and/or family/caregiver⁽⁵⁾.

In addition to the organic complications, DM causes other significant consequences for the person's life, leading both to interference in financial matters, as to pain, anxiety and loss of quality of life⁽⁶⁾. Because DM is a disease that causes a negative impact on biopsychosocial life, one needs a broader nurse's look to the relationship between emotional reactions and the self-care actions of the people with DM.

Healthcare professionals need to be prepared to recognize the patients' individual differences, identifying their needs, and develop skills for communication and use different teaching strategies, considering the specificities of adult education, starting in the individual care to then develop and implement educational programs that meet those needs⁽⁵⁾.

Given the above, this study aimed to identify and analyze the evidence available in the literature on nursing interventions to promote self-care for people with type 2 diabetes, because due to its multifactorial character, adherence to self-care activities for this population is even more complicated.

The knowledge from the results of this study can serve as a support for the nursing critical thinking when performing their assistance and subsidies for the development of practices that may be more effective in achieving the goals proposed this population self-care.

METHOD

This is an integrative review which allows us to identify, analyze and synthesize the knowledge covered in independent studies on a particular subject in order to indicate the gaps in the literature, thus providing tools for decision-making to improve clinical practice and beneficial results in the quality of care provided to the patient as a result of the merger of conduct highlighted by the best evidence⁽⁷⁻⁸⁾.

For the preparation of this integrative review the following steps were followed: establishment of hypothesis and objectives of integrative review; establishment of criteria for inclusion and exclusion of articles (sample selection); definition of information to be extracted from selected articles; analysis of the results; discussion and presentation of the results and the last step was the review presentation⁽⁷⁾.

The question was established from the PICO strategy, thus defined: the population corresponds to "people with Type 2 diabetes mellitus"; as intervention, the "nursing interventions" were designated; there was no descriptor to define a comparison criterion; and as an expected result the "promotion of self-care." Thus, the central question for conducting this review was: "What is the evidence on nursing interventions to promote self-care to persons with Type 2 diabetes mellitus?"

For the selection of studies, we used through online access the major database systems in the health context: Latin American and Caribbean Health Sciences (LILACS), MEDLINE (via EBSCO), Cumulative Index to Nursing and Allied Health Literature (CINAHL) and SCOPUS. The survey of articles occurred in July and August 2015 by two independent reviewers. Thus, we tried to expand the scope of research by seeking, thereby, to minimize possible bias in this stage of development of the integrative review process.

The inclusion criteria of the articles to this integrative review were: articles from primary studies with the theme "nursing interventions to promote self-care for people with DM2"; published in English, Spanish or Portuguese; between January 2005 and July 2015; and completely available. Informal reports of cases, book chapters, monographs, dissertations or theses, articles in newspapers, editorials and not scientific texts were excluded.

Controlled and non-controlled descriptors were used to obtain a wide search of the subject in the literature in order to perform a consistent analysis of the articles available in the literature. For this study, the following controlled descriptors were used, as Descriptors in Health Sciences (DeHS) and Medical Subject Headings (MeSH): Type 2 Diabetes Mellitus; nursing care; selfcare; and the non-controlled descriptor: nursing interventions.

Crisscross of controlled descriptors has been mediated by the Boolean operator "*and*" and crisscross of controlled descriptor "nursing care" and the non-controlled descriptor "nursing interventions" was mediated by the Boolean "*or*".

The process of selecting the articles is described below, for which the process is presented in a flow chart divided into four phases (Figure 1).

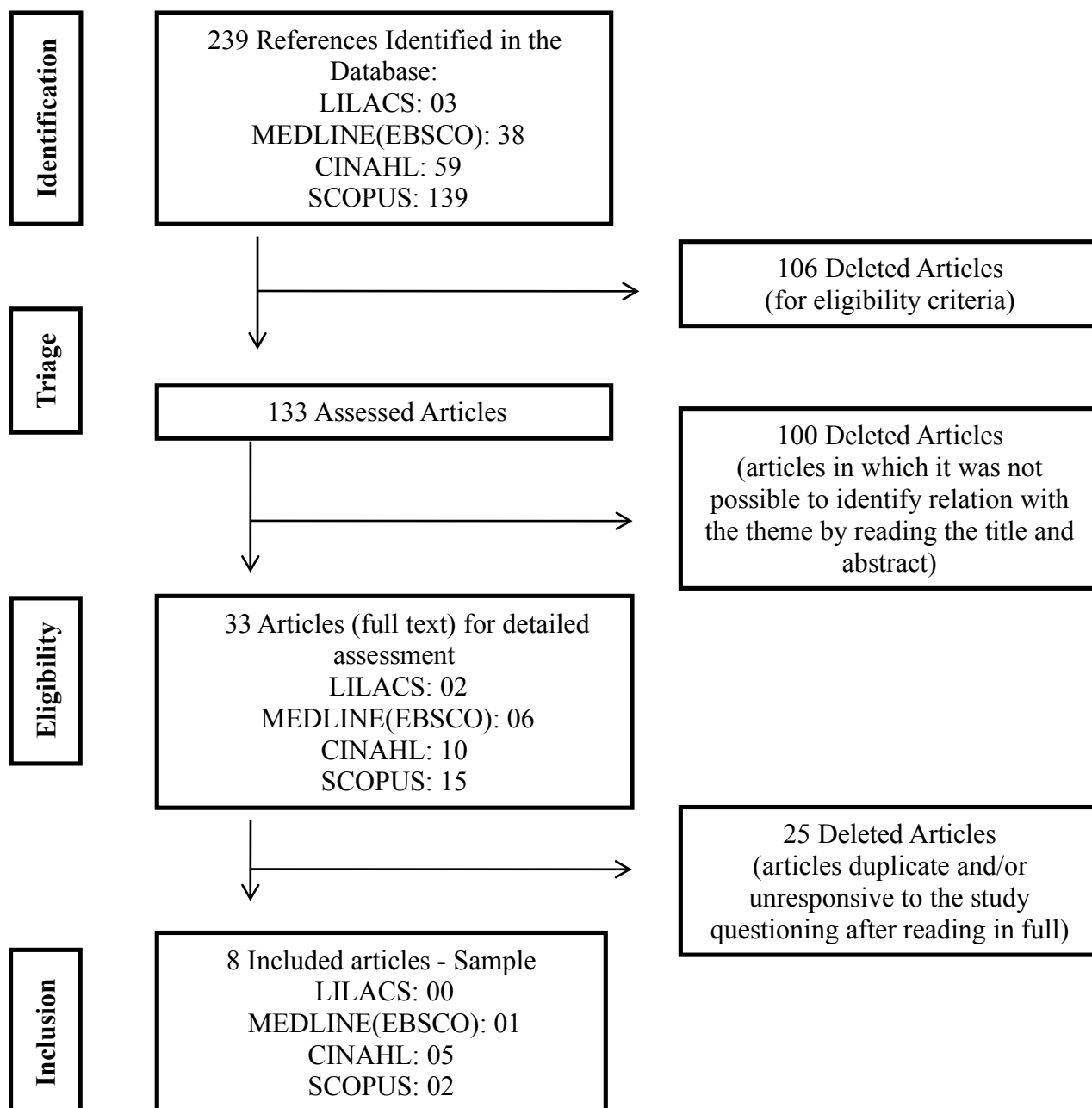


Figure 1: Flowchart of article selection. Fortaleza, 2015. Fortaleza, CE, Brazil, 2015.

An elaborate instrument was used as scientific support for extracting relevant data present in the articles included in the review sample, submitted to appearance and content validation⁽⁹⁾, which includes the following items: identification data of the article; institution of based study; type of journal; methodological characteristics of the study; and assessment of the methodological rigor.

For analysis of evidence levels the following classification was adopted:

- Level I - evidence from systematic review or meta-analysis of randomized controlled clinical trials or derived from clinical guidelines based on systematic reviews of randomized controlled trials;
- Level II - evidence derived from at least one randomized controlled clinical trial clearly delineated;
- Level III - evidence from well-designed clinical trials without randomization;
- Level IV - evidence from cohort studies and well-designed case-control;

- Level V - evidence from systematic review of descriptive and qualitative studies; level VI - evidence from a descriptive or qualitative study; level VII - evidence from opinion of authorities and/or expert committees report⁽¹⁰⁻¹¹⁾.

RESULTS

Data are descriptive, aiming to understand the context of evidence available on nursing interventions aimed at promoting self-care of persons with DM2 and to bring together and organize knowledge on the subject.

Regarding database in which the articles were selected, the database Scopus stood out as the base with greater quantitative of indexed articles; however, only two articles were included in the sample for answering the study questioning. Cinahl had the highest number of articles, five, which met the criteria established in the study. In Medline via EBSCO an article met the criteria and no item has been selected in Lilacs. We emphasize that the duplicate articles were counted only once, being included in the base with the greatest quantitative of articles that met the search criteria.

Regarding the publication language, six articles were originally published in English, one in Spanish and one in Portuguese. In relation to the publication year, from the period adopted for selection of articles (January 2005 to July 2015), there was consistency of publications over the years; four articles published before 2010 (two in 2006 and two in 2007) and four articles published in the last five years (two in 2012, one in 2013 and one in 2015).

That quantitative frequency of publications in the analyzed period may show that production in relation to the subject showed no clear growth in this period, representing a challenge for nursing, since the DM complications reach an increasing number of people.

For the results of this integrative review eight articles were analyzed, which met the established selection criteria. Table 1 presents an overview of the analysis of these articles.

Table 1: Presentation of the synthesis of the articles included in the review. Fortaleza, CE, Brazil, 2015.

Author / Journal / Levels of Evidence	Title	Objective(s)	Method	Result(s)
Rosmawati M, Rohana AJ, Manan WA Self-Care, Dependent-Care & Nursing Evidence level III	The Evaluation of Supportive-Developmental Nursing Program on Self-Care Practices of Persons with Type 2 Diabetes at the Health Centre in Bachok, Kelantan	Evaluate the effectiveness of a planned support-developmental nursing program on self-care practices of people with type 2 diabetes	Quasi Experimental Study	The overall and subtotal average scores of self-care practices in the experimental group were significantly higher than the control group. There was no significant difference in the HbA1c level
Sürücü HA, Kızılcı S Self-Care, Dependent-Care & Nursing Evidence level VI	Use of Orem's Self-Care Deficit Nursing Theory in the Self-Management Education of Patients with Type 2: A Case Study	Indicate the use of Orem's self-care deficit nursing theory (SCDNT) in education for self-management of patients with type 2 diabetes	Case Study	Use of SCDNT in education for self-management of diabetes was a guide in the identification, planning and implementation. The application of the theory allowed greater involvement of the individual in the management of its self-care, providing positive changes to health
Hermelinda, AA et al. Culture Care Evidence level VI	Nursing Intervention on Self-Care with Educational Support in People with Type 2 Diabetes Mellitus	Know the influence of nursing interventions on self-care of persons with Type 2 diabetes mellitus with educational support	Descriptive	There were significant difference by Student's t test ($t=3.579$ and $p=0.002$) after nursing intervention related to the self-care ability
Gallegos EC, Ovalle-Berúmen F, Gomez-Meza MV J Nurs Scholarsh Evidence level III	Metabolic Control of Adults With Type 2 Diabetes Mellitus Through Education and Counseling	Test the effectiveness of a controlled nursing intervention focused on education and counseling to improve metabolic control in adults diagnosed with type 2 diabetes mellitus in ambulatory care	Randomized Quasi Experimental Study	The results showed that self-care management actions caused positive effects in treating, with consequent adaptation to the disease, influencing directly to the significant decrease in HbA1c levels in the experimental group
Kumar CP Int J Nurs Terminol Classif Evidence level VI	Application of Orem's Self-Care Deficit Theory and Standardized Nursing Languages in a Case Study of a Woman with Diabetes	Illustrate the practical implementation of the Nursing process based on the Orem self-care theory, from the presentation of a case study by clinical nurses specialists in assessment and care of a woman with type 2 diabetes	Case Study	The Orem's Self-Care Deficit Theory directed the educator of diabetes in guiding a client through diabetes self-management process

Author / Journal / Levels of Evidence	Title	Objective(s)	Method	Result(s)
Wattana C, Srisuphan W, Pothiban L, Upchurch SL Nurs Health Sci Evidence level II	Effects of a diabetes self-management program on glycemic control, coronary heart disease risk, and quality of life among Thai patients with type 2 diabetes	Compare the HbA1c level, risk of coronary heart disease and quality of life of diabetic patients who received self-management program for diabetes and those who received the usual nursing care	Randomized Clinical Trial	The experimental group showed a significant decrease in hemoglobin A1c level and the risk of coronary heart disease (CHD), with an increase in quality of life (QOL) compared with the control group
Imazu MFM, Faria BN, Arruda GO de, Sales CA, Marcon SS Rev. Latino-Am. Nursing Evidence level VI	Effectiveness of individual and group interventions together with people with type 2 diabetes	Compare the effectiveness of two educational interventions performed by a health care provider in monitoring the individual with type 2 diabetes mellitus as the knowledge on the disease, impact on quality of life and adoption of self-care actions	Comparative study, longitudinal and prospective	In both intervention models, indicator improvements were observed over the six months of monitoring
Karakurt P, Kasıkçı MK International Journal of Nursing Practice Evidence level VI	The effect of education given to patients with type 2 diabetes mellitus on self-care	Determine the education effect on self-care given to patients with type 2 diabetes mellitus	Experimental Study Pre- and Post- test	A statistically significant difference between the average values of pre-education and post-teaching was found. The results show that the educational process carried out with the patients improved their self-care and metabolic control variables

Concerning the level of evidence, the method of one study considered it as comparative study without randomization, therefore it was rated as level of evidence six⁽¹²⁾. However, there was a comparison of two groups that received routine interventions by the healthcare provider, an individual intervention group and another intervention group. To be classified as classic clinical trial, the study should present a design in parallel, consisting of a group that receives an intervention to be tested and a control group that receives a comparison treatment, inactive treatment or standard treatment of routine, in order to investigate the new intervention before the outcome⁽¹³⁾.

Another study⁽¹⁴⁾ presented itself as quasi-experimental because there was routine intervention in comparison group and intervention to be analyzed in intervention group, being rated as level of evidence three. However, there is an incongruity, since the method also points out randomization in the allocation of participants across the groups, which would indicate level of evidence two. The quasi-experimental studies are controlled trials without randomization in the intervention and control groups⁽¹⁵⁾.

DISCUSSION

The nursing role is an efficient way to achieve the desired therapeutic levels for the DM2 control, in which the development of programs with nursing interventions are effective in helping patients with type 2 diabetes to improve their self-care practices⁽¹⁶⁻¹⁷⁾.

Health education stands out as a strategic field for implementing nursing interventions in order to promote self-care for persons with DM2. The nursing interventions with satisfactory results occurred from patient monitoring, requiring more time and greater number of encounters than those shown in the routine care.

The implementation of a planned program of developmental nursing support, involving education, guidance, support and a suitable environment for the practice of promoting self-care to diabetic patients, showed satisfactory results in relation to the scores of self-care practices compared with the control group, which received routine care⁽¹⁶⁾.

This result can be explained by the limited time that the routine care professionals give the guidelines and the fact that planned program of support not only provided cognitive content, but offered support and guidance⁽¹⁶⁾.

Nursing educational intervention performed in eight hours, divided into five sessions, presented at the post-test statistical significance in relation to the knowledge of people with DM2 regarding self-care. The first session lasted an hour addressing the general DM2 characteristics; the second session consisted of patient care, necessary procedures (diet, exercise, drug treatment, hygiene), lasting four hours; in the third session the issue of health and specific protection, in an hour; the fourth session lasted an hour, with motivation for people with type 2 diabetes mellitus; and the fifth session was held in one hour focusing on participation in the management of care⁽¹⁷⁾.

The use of educational materials contributes to the development of the education process for the

person's self-care with DM2. In a study performed to determine the effect of education on self-care in patients with DM2, a leaflet containing information on diabetes was used, such as the definition and pathophysiology of the disease, signs, symptoms and principles for its treatment as well as the care needed, including the importance of a healthy diet, regular exercise and medication use⁽¹⁸⁾.

That educational process was carried out individually, lasting 45-60 minutes. The addressed content varied according to the needs of each patient, mixing and merging education techniques such as narratives, queries and response techniques. The educational material was used as a procedural resource of specific education in order to enhance the oral information⁽¹⁸⁾.

In clinical trial aimed to compare the HbA1c level, risk of coronary heart disease (CHD) and quality of life of diabetic patients who received a self-management program for diabetes, and those who receive the usual nursing care, the results indicated that the experimental group showed a significant decrease in HbA1c level and CHD risk, with an increase in quality of life compared with the control group⁽¹⁹⁾.

These findings corroborate other studies⁽¹⁴⁾, where the results showed that the counseling and educational model applied in nursing interventions were effective in improving metabolic control of diabetic patients in the experimental group, with a significant decrease in HbA1c as well as positive effects on self-care management.

The use of Orem's Theory in education for self-care of patients with type 2 diabetes was considered a guide, directing the educator in the identification, planning and implementation of nursing, in which its application can be made to improve self-care behavior⁽²⁰⁻²¹⁾.

The use of Self-Care Deficit Theory provides subsidies to care for being based essentially on the premise that all persons have the potential, to varying degrees, to take care of themselves and those under their responsibility⁽²²⁾. Orem believes that people have the power to learn and develop themselves and the way the individual meets the self-care needs is not instinctive, but a learned behavior⁽²³⁾.

Another contribution of the use of nursing theories is that they confer uniformity of language, which facilitates and improves communication between nurses and aids in the standardization of knowledge for nursing practice⁽²¹⁾. One of the limitations to the use of the theory is the difficulty to put it into practice due to its abstract nature of concepts⁽²⁰⁾.

The nurse, as a health team member, needs to be aware that self-care is required in diabetes and should know that self-monitoring of glycemia and the participation of patients in managing their disease are good indicators for their self-care. Self-care in diabetes requires effort and there are several factors that affect it⁽¹⁸⁾.

The goal of educational programs is to empower the individuals to understand and get motivated in the role of their therapeutic regimen. Individuals who do not receive education on diabetes have a strong tendency to increase the risk of disease complications⁽²⁾.

Self-care begins with the view that the user stops being passive in relation to the care and guidelines indicated by the medicine. Self-care is related to a personal behavior that can influence health; however, it

does not occur in isolation but with environmental, social, economic, hereditary factors and related to health services⁽²⁴⁾.

FINAL REMARKS

Health education stands out as a strategic field for implementing nursing interventions in order to promote self-care for persons with DM2. The results show that interventions with meetings and that provide more time than the usual show satisfactory results regarding self-care practices.

Interventions indicated in the context of the studies not only provided cognitive content but also individual guidelines according to the needs of each patient, offered support and a suitable environment for their realization. These findings show that health education carried out by the nursing team are not restricted to transmission of information, and that there is a broader approach based on the various factors that influence the achievement of self-care of this population.

The Orem's Self-Care Deficit Theory was pointed out as a guide to direct the educator regarding diabetes and the use of standardized nursing language as a facilitator for communication between nurses and to assist in the standardization of knowledge to nursing practice.

REFERENCES

1. Boas LCGV, Foss MC, Foss-Freitas MC, Torres HC, Monteiro LZ, Pace AE. Adesão à dieta e ao exercício físico das pessoas com diabetes mellitus. *Texto & Contexto Enfermagem*. 2011 [acesso em: 07 out 2015];20(2):272-9. Disponível em: <http://www.scielo.br/pdf/tce/v20n2/a08v20n2>
2. Torres HC, Pereira FRL, Alexandre LR. Avaliação das ações educativas na promoção do autogerenciamento dos cuidados em diabetes mellitus tipo 2. *Revista Escola de Enfermagem USP* [online]. 2011 [acesso em: 07 out 2015];45(5):1077-1082. Disponível em: <http://www.scielo.br/pdf/reeusp/v45n5/v45n5a07.pdf>
3. Tavares DMS, Rodrigues RAP. Educação conscientizadora do idoso diabético: uma proposta de intervenção do enfermeiro. *Rev. esc. enferm. USP*[online]. 2002 [acesso em: 21 jun 2016];36(1):88-96. Disponível em: <http://dx.doi.org/10.1590/S0080-62342002000100013>
4. Sociedade Brasileira de Diabetes. Departamento de enfermagem da Sociedade Brasileira de Diabetes. *Cuidados de Enfermagem em Diabetes Mellitus*. São Paulo, 2009 [acesso em: 03 out 2015]. Disponível em: http://www.saudedireta.com.br/docsupload/13403686111118_1324_manual_enfermagem.pdf
5. Sociedade Brasileira de Diabetes. Diretrizes da Sociedade Brasileira de Diabetes. 2014 -2015. São Paulo: AC Farmacêutica, 2015 [acesso em: 03 out 2015]. Disponível em: <http://www.diabetes.org.br/images/2015/area-restrita/diretrizes-sbd-2015.pdf>
6. Ferreira SF, Santos CB dos. Qualidade de vida relacionada à saúde de pacientes diabéticos atendidos pela equipe de saúde da família. *Rev enferm UERJ*. 2009 [acesso em: 22 out 2015];17(3):406-11. Disponível em: <http://www.facenf.uerj.br/v17n3/v17n3a19.pdf>.
7. Mendes KDS, Silveira RCCP, Galvão CM. Revisão integrativa: método de pesquisa para a incorporação de evidências na saúde e na enfermagem. *Texto contexto-enferm*. [online]. 2008 [acesso em: 13 out 2015];17(4):758-64. Disponível em: <http://www.scielo.br/pdf/tce/v17n4/18.pdf>
8. Souza MT de, Silva MD da, Carvalho R de. Revisão Integrativa: o que é e como fazer? *Einstein* [online]. 2007 [acesso em: 13 out 2015];08:102-6. Disponível em: http://www.scielo.br/pdf/eins/v8n1/pt_1679-4508-eins-8-1-0102.pdf
9. Ursi ES, Galvão CM. Prevenção de lesões de pele no perioperatório: revisão integrativa da literatura. *Rev Latino-am Enfermagem*. 2006 [acesso em: 14 jun 2015];14(1):124-31. Disponível em: <http://www.scielo.br/pdf/rlae/v14n1/v14n1a17.pdf>

10. Galvão CM. Níveis de evidência. Editorial. *Acta Paul Enferm.* 2006 [acesso em: 13 out 2015];19(2). Disponível em: <http://www.scielo.br/pdf/ape/v19n2/a01v19n2.pdf>
11. Melnyk BM, Fineout-Overholt E. Making the case for evidence-based practice. In: Melnyk BM, Fineout-Overholt E. *Evidence based practice in nursing & healthcare. A guide to best practice.* Philadelphia: Lippincot Williams & Wilkins; 2005. p.3-24.
12. Imazu MFM, Faria BN, Arruda GO de, Sales CA, Marcon SS. Efetividade das intervenções individual e em grupo junto a pessoas com diabetes tipo 2. *Rev. Latino-Am. Enfermagem.* mar.-abr. 2015 [acesso em: 05 nov 2015]; 23(2):200-7. Disponível em: http://www.scielo.br/pdf/rlae/v23n2/pt_0104-1169-rlae-23-02-00200.pdf
13. Hulley, SB et al. *Delineando a pesquisa clínica.* 4ed. Porto Alegre: Artmed, 2015.
14. Gallegos EC, Ovalle-Berúmen F, Gomez-Meza MV. Metabolic control of adults with type 2 diabetes mellitus through education and counseling. *J Nurs Scholarsh.* 2006 [acesso em: 05 nov 2015];38(4):344-51. Disponível em: <http://web.b-ebsohost-com.ez11.periodicos.capes.gov.br/ehost/pdfviewer/pdfviewer?sid=d2979658-a331-4eaf-a6c4-b49ba02399e7%40sessionmgr120&vid=14&hid=125>
15. Rothman KJ, Greenland S, Lash TL. *Epidemiologia Moderna.* 3ª Edição. Porto Alegre: Artmed; 2011.
16. Rosmawati M, Rohana AJ, Manan WA. The Evaluation of Supportive-Developmental Nursing Program on Self-Care Practices of Persons with Type 2 Diabetes at the Health Centre in Bachok, Kelantan. *Self-Care, Dependent-Care & Nursing.* Spring 2013 [acesso em: 05 nov 2015]; 20(1):16. Disponível em: <http://web.b-ebsohost-com.ez11.periodicos.capes.gov.br/ehost/pdfviewer/pdfviewer?sid=d2979658-a331-4eaf-a6c4-b49ba02399e7%40sessionmgr120&vid=3&hid=125>
17. Hermelinda AA et al. Intervención de Enfermería en el Autocuidado con Apoyo Educativo en Personas con Diabetes Mellitus tipo 2. *Cultura de los Cuidados.* 2006 [acesso em: 05 nov 2015];Ano X(20):141-146. Disponível em: https://rua.ua.es/dspace/bitstream/10045/877/1/culturacuidados_20_20.pdf
18. Karakurt P, Kasıkçı MK. The effect of education given to patients with type 2 diabetes mellitus on self-care. *International Journal of Nursing Practice.* 2012 [acesso em: 05 nov 2015];18:170–179. Disponível em: <https://www-scopus-com.ez11.periodicos.capes.gov.br/record/display.uri?view=basic&eid=2-s2.0-84858776657&origin=resultslist>
19. Wattana C, Srisuphan W, Pothiban L, Upchurch SL. Effects of a diabetes self-management program on glycemic control, coronary heart disease risk, and quality of life among Thai patients with type 2 diabetes. *Nurs Health Sci.* 2007 Jun [acesso em: 08 nov 2015];9(2):135-41. Disponível em: <http://web.a-ebsohost-com.ez11.periodicos.capes.gov.br/ehost/pdfviewer/pdfviewer?sid=bcee7a9a-081d-4e5c-9cab-7cab28daae4%40sessionmgr4004&vid=3&hid=4114>
20. Sürücü HA, Kızılcı S. Use of Orem's Self-Care Deficit Nursing Theory in the Self-Management Education of Patients with Type 2: A Case Study. *Self-Care, Dependent-Care & Nursing.* 2012 [acesso em: 05 nov 2015]; 19(1):53-59. Disponível em: <http://web.b-ebsohost-com.ez11.periodicos.capes.gov.br/ehost/pdfviewer/pdfviewer?sid=d2979658-a331-4eaf-a6c4-b49ba02399e7%40sessionmgr120&vid=11&hid=125>
21. Kumar CP. Application of Orem's self-care deficit theory and standardized nursing languages in a case study of a woman with diabetes. *Int J Nurs Terminol Classif.* 2007 Jul-Sep [acesso em: 05 nov 2015];18(3):103-10. Disponível em: <http://web.b-ebsohost-com.ez11.periodicos.capes.gov.br/ehost/pdfviewer/pdfviewer?sid=d2979658-a331-4eaf-a6c4-b49ba02399e7%40sessionmgr120&vid=17&hid=125>
22. Vitor AF, Lopes MVO, Araújo TL de. Teoria do Déficit de Autocuidado: análise da sua importância e aplicabilidade na prática de enfermagem. *Esc Anna Nery(impr.).* 2010 jul-set [acesso em: 05 nov 2015];14(3):611-616. Disponível em: <http://www.scielo.br/pdf/ean/v14n3/v14n3a25>
23. George JB. *Teorias de Enfermagem: os Fundamentos à Prática Profissional.* Porto Alegre: Ed Artmed, 2000.
24. Gomides DS, Villas-Boas LCG, Coelho ACM, Pace AE. Autocuidado das pessoas com diabetes *mellitus* que possuem complicações em membros inferiores. *Acta Paul Enferm.* 2013 [acesso em: 22 out 2015];26(3):289-93. Disponível em: <http://www.scielo.br/pdf/ape/v26n3/14.pdf>.