Evidence-based practices published in Brazil: identification and analysis of their types and methodological approaches

ABSTRACT
This is an integrative review of Brazilian studies on evidence-based practices (EBP) in health, published in ISI/JCR journals in the last 10 years. The aim was to identify the specialty areas that most accomplished these studies, their foci and methodological approaches. Based on inclusion criteria, 144 studies were selected. The results indicate that most EBP studies addressed childhood and adolescence, infectious diseases, psychiatrics/mental health and surgery. The predominant foci were prevention, treatment/rehabilitation, diagnosis and assessment. The most used methods were systematic review with or without meta-analysis, protocol review or synthesis of available evidence studies, and integrative review. A strong multiprofessional expansion of EBP is found in Brazil, contributing to the search for more selective practices by collecting, recognizing and critically analyzing the produced knowledge. The study also contributes to the analysis itself of ways to do research and new research possibilities.

RESUMO
Revisão integrativa de estudos brasileiros sobre práticas baseadas em evidências (PBE) em saúde, publicados em periódicos ISI/JCR, nos últimos 10 anos. O objetivo foi identificar as especialidades que mais realizaram estes estudos, seus enfoques e abordagens metodológicas. A partir de critérios de inclusão, foram selecionados 144 trabalhos. Os resultados indicam que a maior quantidade de estudos feitos em PBE foram sobre infância e adolescência, infectologia, psiquiatria/saúde mental e cirurgia. Os enfoques predominantes foram prevenção, tratamento/reabilitação, diagnóstico e avaliação. As metodologias mais empregadas foram revisão sistemática sem ou com metanálise, revisão de protocolos ou síntese de estudos de evidências já disponíveis, e revisão integrativa. Consta-se forte expansão multiprofissional da PBE no Brasil, contribuindo para a busca de práticas mais criteriosas pela reunião, reconhecimento e análise crítica dos conhecimentos produzidos. O estudo contribui também para a própria análise dos modos de fazer pesquisa e novas possibilidades de investigação.

RESUMEN
Revisión integradora de estudios brasileños sobre prácticas basadas en la evidencia (PBE) en salud, publicados en periódicos ISI/JCR en los últimos 10 años. La finalidad fue identificar las especialidades que más efectuaron esos estudios, sus focos y aproximaciones metodológicas. A partir de criterios de inclusión, fueron elegidos 144 estudios. Los resultados indican que la mayor cantidad de estudios llevados a cabo en EBP trataron de la infancia y adolescencia, enfermedades infecciosas, psiquiatria/salud mental y cirugia. Los focos predominantes fueron prevención, tratamiento/rehabilitación, diagnóstico y evaluación. Las metodologías más usadas fueron revisión sistemática con o sin metanálisis, revisión de protocolos o síntesis de estudios de evidencias ya disponibles, y revisión integradora. Se constata la fuerte expansión multiprofesional de la EBP en Brasil, contribuyendo a la búsqueda de prácticas más criteriosas a través de la reunión, del reconocimiento y del análisis crítico de los conocimientos producidos. El estudio también contribuye al propio análisis de los modos de hacer investigación y nuevas posibilidades de hacerla.

DESCRIPTORS
Evidence-based practice
Evidence-based nursing
Review
Meta-analysis

DESCRIPTORES
Prácticas clínicas basadas en evidencias
Enfermagem baseada em evidências
Revisão
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DESCRIPTORES
Prática clínica basada en la evidencia.
Enfermería basada en la evidencia
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1Associate Professor, University of São Paulo School of Nursing. CNPq Research productivity Grantee - Level 2. São Paulo, SP, Brazil. rfacerda@usp.br
2 Nurse, University of São Paulo School of Nursing. Neonatology Nursing Student. Professional Qualification Program, University of São Paulo Medical School Hospital das Clínicas. São Paulo, SP, Brazil. bruna.nunes@usp.br
3 Librarian, Administrative Editor, University of São Paulo School of Nursing. University of São Paulo School of Nursing. São Paulo, SP, Brazil. abalista@usp.br
4 Full Professor, University of São Paulo School of Nursing. CNPq Productivity Grantee - Level 1A. São Paulo, SP, Brazil. emiyegry@usp.br
5 Full Professor, University of São Paulo School of Nursing. CNPq Research Productivity Grantee - Level 2. São Paulo, SP, Brazil. angelm@usp.br
6 Full Professor, University of São Paulo School of Nursing. CNPq Productivity Grantee - Level 1B. São Paulo, SP, Brazil. merighi@usp.br
7 Full Professor, University of São Paulo School of Nursing. CNPq Productivity Grantee - Level 1D. São Paulo, SP, Brazil. rmgsfon@usp.br
8 Associate Professor, University of São Paulo School of Nursing. CNPq Research Productivity Grantee - Level 2. São Paulo, SP, Brazil. valeriac@usp.br
9 Full Professor, University of São Paulo School of Nursing. CNPq Research Productivity Grantee - Level 1D. São Paulo, SP, Brazil. merighi@usp.br
10 Associate Professor, University of São Paulo School of Nursing. CNPq Research Productivity Grantee - Level 2. São Paulo, SP, Brazil. valeriac@usp.br
INTRODUCTION

Among countless concepts of Evidence-Based Practice (EBP), a consensus exists that its focus rests on health care problem solving with a view to decision making based on the best evidence available\(^1\). Although various resources – expert consensus, clinical skill/experience, user preferences, legislations, community standards and others\(^2\) are mentioned, the research results are considered the main form of reaching evidence.

The 1970’s can be defined as the origin of EBP. To achieve greater efficiency and efficacy in the application of British health system resources, the epidemiologist Archibald Cochrane recommended decisions based on research, mainly randomized clinical trials, to direct guidelines for clinical practice and expense containment. In the 1980’s, Evidence Based Medicine was organized at McMaster University in Canada, considered as the use of more certain criteria, through a previously determined research result search, assessment and usage process, as the base for clinical diagnosis, prognosis, treatment or management decisions. In the 1990’s, the Cochrane Collaboration was created, an international information network of reviews with clinical trials that offer scientific information in all health areas\(^3\). With a view to replicability, this process articulates the epidemiology, biostatistics and informatics tripod\(^1\)-\(^4\).

Today, the international proliferation of EBP can be witnessed. Besides clinical medicine, it has been aggregating several other professional and knowledge areas. Although it is exaggerated to consider EBP a new paradigm, as some authors want\(^5\), it undoubt-edly constitutes an important tool in health care, mainly because the steep development of scientific production has made it impossible to access the complete production and recognize its quality. The use of a system-ized method permits joining, classifying and analyzing research results and concluding on evidence or not for deci-sion making, as well as on the need to develop new pri-mary studies.

EBP on the systematic review method of controlled and randomized clinical trials is considered the highest quality evidence for clinical research analysis. In case of homogeneity, its populations can be added up and analyzed through meta-analysis in order to achieve evidence\(^5\)-\(^9\). The existence of different research methods, however, which can better respond to the different foci and theoretical approaches, have been determining the creation of various EBP centers, which consider other research designs than clinical trials and develop other methods than systematic review with meta-analysis, such as integrative review and qualitative review. These include, the Joana Briggs Institute\(^10\). Hence, if any EBP initially implies the comprehen-sive and selective search of scientific literature on a given theme, today, various methods are used for its collection, classification and analysis.

The aim of this study was to recognize EBP studies car-ried out in Brazil with a view to identifying what specialties have used them most, as well as their foci and method-ological approaches.

METHOD

This is an integrative review, a method that can aggregate primary or secondary studies, with different methods and/or theories and a wide range of implications\(^10\). In this review, a synthesis of EBP studies was aimed for, guided by the question: What EBP studies in health have been accomplished and published in Brazil?

The inclusion criteria referred to EBP studies, published in Brazilian scientific health journals as from the year 2000, indexed in ISI Web of Knowledge and cited by the Journal Citation Report (20 today), with a clearly explicit and developed literature review method. The search, between October and November 2010, in the LILACS and PubMed/ MEDLINE databases, used the following keywords, either crossed or separately: evidence-based practice, systematic review, integrative review, narrative review, qualitative review, meta-analysis and meta-synthesis. The publications found were previously selected through the titles and abstracts and, if they complied with the criteria for inclusion in this review, their full version was analyzed. Included publications were classified and analyzed for publication data (authors, title, journal, year, volume, issue), implied specialties, focus (treatment, prevention, assessment etc.) and EBP method used.

RESULTS

Based on the previously defined keywords, 182 studies were identified, 144 of which were included, which com-plied with the inclusion criteria\(^11\)-\(^15\) and had all been pub-lished in the first decade of the 21st century, mainly as from 2005, in ISI journals: Cadernos de Saúde Pública (41), São Paulo Medical Journal (19), Latin American Journal of Nursing (14), Revista de Saúde Pública (14), Jornal de Pediatria (9), Revista Brasileira de Psiquiatria (7), Arquivos de Neuro-Psiquiatria (6), Revista da Associação Médica Brasileira (5), Revista da Escola de Enfermagem da USP (5), Revista Brasileira de Fisioterapia (5), Revista da Sociedade Brasileira de Medicina Tropical (3), Arquivos Brasileiros de Endocrinologia e Metabolologia (3), Clinics (3), Arquivos Brasileiros de Cardiologia (2), Journal of Applied Oral Sci-
The highest frequency of EBP studies corresponded to the specialty Childhood and Adolescence (11.57%), followed by Infectious diseases and hospital infection (10.65%), Surgery (7.40%), Obstetrics/Neonatology and Psychiatric/Mental health (6.94%). Two critical reflections on EBP research were also found (0.92%).

Prevention and reduction of complications were the most frequent foci in the identified Brazilian studies (61.08%), followed by foci on treatment/rehabilitation (28.45%), assessment (6.25%) and diagnosis (4.16%). In prevention studies, type II predominated (40.27%), i.e. studies that looked for the incidence or prevalence of events.

Systematic review without meta-analysis was the most used methodological approach (52.07%); followed by systematic reviews with meta-analysis (20.81%), other approaches (18.03%) and integrative reviews (7.62%). Only two meta-syntheses (1.38%) were identified.

The other approaches almost exclusively referred to the survey, recognition and analysis of procedure protocols or syntheses of studies on available evidence.

It was also observed that systematic reviews with meta-analysis were mainly carried out among studies focusing on treatment/rehabilitation (10.41%), while systematic reviews without meta-analysis predominated among studies focusing on prevention I and II (34.72%).

Table 1 displays the distribution of the specialties the studies were dedicated to.
Focus Approach | Treatment/Rehabilitation | Prevention I | Prevention II | Diagn* | Assess.* | Total
--- | --- | --- | --- | --- | --- | ---
Systematic review with meta-analysis | | | | | | 15 10.41 (13,15,20,74,77, 80,81, 82,83,84,92,117,123, 124,152) 8 5.55 (14,40,69,79,85, 86,114,116) 5 3.47 (48,50,54,63,68) 2 1.38 (75, 91) 30 20.81
Systematic review without meta-analysis | | | | | | 16 11.11 (17,18,27,32,38,37, 88,93,96,121,122,134, 135,137,138,139) 11 7.64 (22,43,90,112,132, 136,133,142,145, 150,153) 39 27.08 (11,12,16,26,29,35,36,41,42, 44,46,47,49,52,53,55,58,57, 59,60,67,70,72,94,97,105, 107,109,113,118,119,130, 140,143,146,147,148,149, 151) 3 2.08 (21,98,141) 6 4.16 (19,31,33, 34,73, 131) 75 52.07
Integrative review | | | | | | 2 1.38 (28,104) 4 2.77 (100, 101, 111, 129) 5 3.47 (99, 102, 106, 108, 110) 1 0.69 - - - - 11 7.62
Meta-synthesis | | | | | | - 1 0.69 - - - - 1 0.69 2 1.38 (37) (144)
Other* | | | | | | 8 5.55 (23,76,87,89,115, 125,126,127) 6 4.16 (24,25,51,61,62,128) 9 6.25 (30,39,45,58,64,65,66,71,120) 1 0.69 (95) 2 1.38 (103,154)
Total | | | | | | 41 28.45 30 20.81 58 40.27 6 4.16 9 6.25 144 100.0

*Focus on treatment, including interventions, mainly medication intervention, with or without intergroup comparisons;  | Focus on prevention or reduction of complications, with medication interventions or not, with or without intergroup comparison;  | Focus on prevention or reduction of complications, including a priori recognition of incidence or prevalence of occurrences, with or without association or correlation with risk factors;  | Focus on diagnosis;  | Focus on assessment, including identification and/or validation of resources/instruments.

### DISCUSSION

Studies on EBP in the health area have considerably increased in Brazil. Only in ISI, cited by the Journal Citation Report, which totals 20 Brazilian scientific health journals nowadays, 144 publications were identified in the last 10 years. That is even more noteworthy when considering that most of these journals establishes a limit for publications on EBP in each issue, as they generally fit into the category of review article publications.

Although the professional category of all authors in each publication could not be identified, based on the origin of the journals and the titles of these studies, besides the interdisciplinarity present in several of them, it is verified that, although the majority comes from the medical area, the presence of other health professional categories is unquestionable. Among these, nursing and physiotherapy, when specific journals from these areas are highlighted (Latin American Journal of Nursing, Revista da Escola de Enfermagem da USP and Revista Brasileira de Fisioterapia with 14, 5 and 5 publications, respectively). In other words, today, EBP represents a multiprofessional research resource in Brazil.

The decision to classify these publication by specialty, among other possible options, also permitted acknowledging EBP’s penetration in a wide range of health care practices, with different themes and objectives. In the childhood and adolescence specialty, for example, EBP ranged from anxiety disorder, whether for treatment[18] or assessment[20], vaccination[24-25], safety during nebulization[28], ICU treatment of anxiety disorder, whether for treatment[18] or assessment[20], vaccination[24-25], safety during nebulization[28], ICU death[29], physical exercise measure[31], nutritional interventions and child growth[30], prenatal and weight at birth[31], among others. Another quite diversified example comes from psychiatry/mental health: medication treatment[13,15,20,70,80,89], physical exercise[34], cognitive therapy[27], anxiety assessment instrument[28], quality of life and food disorders[35], psychological stress x hypertension[40], family intervention in schizophrenia[49] etc.

Regarding this diversity, it can be supposed that the accomplishment of EBP derives from professional groups’ interests and autonomous motivations than from institutional or public policies related to previously identified priorities.

Using a classification to identify these study foci, their range is also verified. While, at first, EBP predominantly looked at decision making for treatment, especially medication treatment, it is noteworthy that, in the present review, the prevention focus predominated (61.08%), mainly to acknowledge the incidence or prevalence of events, with or without association or correlation with risk factors (40.27%). It is no coincidence that the journal Cadernos de Saúde Pública published most EBP studies (41). That arouses a question: is this a trend in Brazil only?

In view of the range of specialties and foci, another question that immediately emerges is related to methodological approaches, that is, the means used to develop EBP. And, again, significant variation was found, with a predominance of systematic review without (52.07%) or with meta-analysis (20.81%), followed by the analysis of protocols or the synthesis of studies on existing evidence, that is, reviews of reviews (18.03 %). Another approach found was...
the integrative or narrative review (7.62%). Meta-synthesis, although only two were identified (1.38%), has been studied in courses offered at teaching institutions in recent years, such as the University of São Paulo School of Nursing for example.

Variations were also observed in the development of the same approach method. Besides, a considerable amount of these EBP studies, despite mentioning a certain methodological approach, developed it differently. To give an example, studies that called the method a systematic review, although its development was closer to an integrative review.

If no single methodological approach has been considered to do EBP, and if there are differences in the way the same approaches are developed, what justifies this range then?

Without ignoring the choice of the approach method exclusively due to the authors’ affinity, the most probable motives are due to the range of foci sought, as well as the possibility of including studies with different methodological designs in their reviews. Therefore, the proliferation of evidence centers and the development of new EBP methods in different countries are well known. Another reason is definitely due to a phase of learning on this research mode, entailing flaws in the choice of the method.

So, what is EBP looking for today? Definitely not only indisputable and replicable results, through the aggregation of quantitative primary studies, preferable with randomized and controlled designs, with a view to meta-analysis. Meta-synthesis, for example, is a method to analyze qualitative studies. The integrative review, in turn, can include theoretical studies and primary and secondary research. What to say, then, about EBP from protocols and reviews of reviews?

Thus, in this range of ways of doing EBP, it should be asked whether, through varying methods, the same evidence can be reached for the same care practice. If not, various of these studies obtained knowledge produced on a given care issue or health events in stead of answers on how to act specifically on them. It is concluded, in other words, that several studies using the EBP approach have also attempted to acknowledge the state of the art and the way or quality of producing certain knowledge and, consequently, its sufficiency or not to support more specific action policies.

No matter the difference in motivations and the plurality of procedures, it is beyond doubt that the expansion in the EBP movement has contributed to a more selective and plural practice, through the collection, recognition and critical analysis of certain knowledge, produced with a view to evidence based actions, if not only possible, then at least available, from different foci and care practices. On the other hand, it also contributes to the analysis of ways of doing research and their new possibilities.

**CONCLUSION**

This literature review revealed the increase in Brazilian studies on EBP. In total, 144 publications were identified in ISI/JCR journals over the last ten years, i.e. from 2000 to 2010. During the study period, EBP strongly expanded in Brazil, contributing to the search for more selective practices, through the collection, recognition and critical analysis of produced knowledge, with a view to, if not only possible, at least available actions. The study also contributes to the analysis of ways to do research and new possibilities, seeking knowledge to support safer and less iatrogenic practices in the field of health and nursing.

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Lacerda RA, Nunes BK, Batista AO, Epy EY. Graziano KU,
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Correspondence addressed to: Rúbia Aparecida Lacerda
Rua Dr. Enéas de Carvalho Aguiar, 419 - Cerqueira César
CEP 05403-000 - São Paulo, SP, Brazil