

Evidence-Based Health In Primary Care: Electronic Portals, Telehealth And Digital Libraries

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Abstract

Background: To conduct an analysis and propose ways to improve teaching and learning processes facilitated through Basic Family Health Units (BFHUs). **Method:** First phase: The authors conducted a qualitative-quantitative study on students and instructors of Primary Care (PC) involving a survey of open- and closed-ended questions administered at medical schools. Closed-ended questions were studied with descriptive statistics and open-ended questions were determined from the creation of categories. Perceptions of major teaching and learning problems were in turn identified. Second phase: Meetings were held with students and respective instructors for 6 months and involved the use of electronic portals and the application of new questionnaires using a Likert scale for pre- and post-evaluation. **Results:** In the first phase, 40% of the students considered local instructor training levels a problem. A similar result was found regarding teachers' lectures, revealing a lack of adequate PC training and performance for most of the categories considered. From our results, we used BHFUs to apply new strategies less widely used for teaching and learning to improve health practices such as the use of the Evidence-Based Health Portal, which is more navigable and offers studies based on clinical evidence criteria. In the second phase, the authors identified an improvement in the quality of learning among instructors and students. **Conclusions:** The use of electronic portals can facilitate BHFU teaching and learning (teaching/learning space).

Background

In 2017, the World Federation for Medical Education (WFME) estimated that there were approximately 2900 medical schools around the globe (<https://wfme.org/world-directory/>), with Brazil including the second largest number of schools with 336, behind India (392) (<https://www.escolasmedicas.com.br/escolas-medicas-brasil-e-internacionais.php>). The practice of medical work from an integral health care perspective, which considers biopsychosocial aspects and the provision of equal care, is far from being used in daily practice [1, 2].

While medical schools may seem similar, they differ considerably in their curricula and in the types of training they provide.

In fact, the organization of political-pedagogical projects, teaching methods or strategies adopted by medical schools without considering the field of care and the needs of the user is considered to limit the potential modification of educational work in health care. Such work is still often structured based on mechanistic and fragmented hegemonic logic. Studies show that clinical practice should be exercised primarily as a space of resistance and creation in the education of health professionals rather than based on reductionist biomedical models. The latter models also favor medicalization and health conditions based on normative standards and statistical parameters with little regard for subjectivity and affectivity [3, 4].

The practice of medicine should adopt, whenever possible, a social approach to establish practices through which the production of knowledge, academic training and the provision of services are inseparable [4, 5].

In such a context, the diversification of teaching-learning scenarios and Primary Care (PC) presents as an educational axis of medicine geared toward social responsibility and integrity from a health perspective. It is then necessary for the student to experience the real socioeconomic limits of the population and access to adequate health care in the classroom and through tutorials and clinical discussions [6].

Despite the abovementioned assumptions, the incorporation of such views into PC presents problems as reported by Gil et al. (2008) in reference to practices of the State University of Londrina - UEL - Paraná. The authors point out the following: (a) "little time for practice with students due to community demands"; (b) students' feeling that they "disturb services" when they do not have the skills to contribute to care; and (c) a loss of the practice of home visits made by students who are oriented toward diagnosing problems of community health, without a proposed solution [7, 8]. Costa (2009), through qualitative research on students from the 5th Medical School, found Basic Family Health Units (BHFU) to be less supportive of the teaching-learning process due to a lack of planning that integrates teaching/services and a lack of professional health care workers and teachers trained in instructorship [9]. In addition to these aspects, Ciuffo et al. (2008) and Trajman et al. (2009) identified gaps in teacher training including a need to use teaching methodologies, extended clinical courses and specialization in Family Health and a lack of salary increases [10, 11]. Thus, how can we best improve PC teaching/learning practices?

Based on answers collected from a qualitative and quantitative survey of students from four Brazilian medical schools and their respective instructors on PC, we propose the use and analysis of a new teaching-learning strategy, constituting the main aim of this study. In this context, we examine Evidence-Based Medicine (MBE) because it plays a fundamental role in clinical decision-making in several medical specialties and because it uses statistical estimates of benefit-risk and harm for decision-making purposes [12, 13].

Method

Investigation: Qualitative study of students and instructors of PC and an analysis of the main problems facing teaching-learning under such conditions and of possible means of improvement (Appendixes A, B and C);

Implementation of coherent strategy research: Trial use of a teaching-learning strategy according to results identified in the first phase of research (Appendixes D1 pre and D2 post and E1 pre and E2 post).

Two research phases were applied:

First phase:

The study was conducted at one private medical school, the University Center Serra dos Órgãos (UNIFESO) in Teresópolis, Rio de Janeiro (RJ), and at three federal schools: Federal Fluminense University (UFF), RJ, the Federal University of Tocantins (UFT) and the Federal University of Viçosa (UFV). Criteria for selecting these schools was based on the accessibility and availability of teachers/instructors and their students. In addition, a curricular model focused on completeness and student insertion in PC/BHFUs or in new practice scenarios was taken into consideration. The study population included students and instructors with 1 year of experience in PC/BHFU operation. We distributed questionnaires with 17 closed-ended questions to 237 students enrolled in 4 medical courses addressing the following topics: (a) motivations for choosing a medical career; (b) perceptions of the curriculum adopted at the studied school; (c) effects on participation in PC/BHFU activities, the main problem affecting teaching and learning, and suggestions for improvement; and (d) the influence of participation in PC/BHFUs in terms their professional trajectory.

Samples were selected via probabilistic sampling or at random based on criteria of convenience, accessibility and similar responses. We then applied a descriptive statistical analysis of answers to the closed-ended questions and categorization of answers to the open-ended questions [14-18].

Simple random sampling involves assigning each element of a population a unique number and then selecting some of these elements at random. To ensure that a sample is selected randomly, random number tables can be used. Such tables include numbers presented in columns or consecutive pages [7].

For the purposes of this research, only 2 questions were selected (Supplemental Appendix A: questions 10 and 11; Appendix B: questions 11 and 12): open-ended questions on the main problem affecting PC teaching-learning and on means of improvement based on 10 options. These options were ranked with values of 1 (high priority) to 10 (low priority).

The 32 preceptors' (08 from UNIFESO, 13 from UFF and 14 from UFT) answers to the questionnaire with 4 open-ended questions were analyzed with a focus on a question exploring their views on BHFU teaching (see Appendix C).

Second phase:

Then, questionnaires containing 13 assertions were given to the instructors and students to evaluate their use of electronic resources. In this way, it was possible to verify previous and acquired knowledge on MBE and on electronic portals of this theme in daily BHFU practice. The results were analyzed using a Likert scale in pre- and post-evaluations (Appendixes D1 and D2 and E1 and E2) according to Norman (2010) and Phelps et al. (2015) [19, 20].

A score of 1 to 5 was established for each statement presented. The score was higher for assertive answers given based on the degree of pre- or post-acquired knowledge applied to research and was not necessarily in agreement with the answers.

For Likert Scale scores, the maximum number of absolute points for each group/instructor was recorded: the product of the number of maximum points for each question, the number of questions included in each questionnaire applied, and the number of participants completing each questionnaire. The relative number was based on the relation between the number of points reached between the possible points for each questionnaire and the respective number of participants [19, 20]. An open-ended question was also included at the end of questionnaire together with the qualitative analysis questionnaire based on certain categories (Appendix D1 and D2) [14, 15].

Results

First phase:

Students: From the students' responses we found that to improve teaching-learning in PC, instructor training needed to be prioritized, as this was cited in 91 responses (40%) of the 237 obtained. A lack of instructor training was deemed the most pressing issue, being cited in 83 responses (35%). Other responses were randomly distributed through simple random sampling and were not nearly as prevalent as the above two responses [7]. The open-ended question was not answered with the option "other", indicating a different opinion.

Relationships between the medical schools across respective periods, including the absolute and relative number of students who completed the questionnaire and their respective options, are shown as priorities in Table 1.

Teachers: Our study of instructors' perceptions revealed several tensions in terms of PC, lacking instructor specialization in Family Health and PC, an inadequate planning of activities performed, and excessively large class sizes. The professionals pointed out a lack of continuing education activities as a barrier to PC teaching-learning improvement.

Table 2 shows the main issues raised by the instructors from the 3 medical schools (UNIFESO, UFF and UFT) in response to the question chosen for this study. UFV did not participate in the study of instructors.

The instructors' responses frequently cite issues related to "planning" and "instructor qualifications."

Second phase:

We held workshops (Supplemental Digital Appendix F) on the following clinical issues relevant to BHFU students and instructors and to daily BHFU practices: Is physical activity beneficial for those who have already had an Acute Myocardial Infarction (AMI)?

We found that of the tools available, the Evidence-Based Health Portal offered the best research resources for tutors and students via 12 databases and the Atheneu Library.

The portal offers 3 databases Evidence-Based Health (SBE): Dynamed, Pro Quest and the British Medical Journal (BMJ)) deemed by the students and instructors to be excellent sources of information on clinical studies based on (clinical) systematic reviews.

Approximately 20 workshops were carried out with 2 groups of 5 interns (G1 and G2) and with their respective BHFU instructors with the Secretary of Health of Teresópolis, RJ during the first semester of 2013.

A list of workshops held, and respective themes and considerations is shown in Table 3.

After the workshops, we verified the following results on pre- and post-acquired portal information: 67% (40/60) of the instructors had used information in the pre-application research phase, and 92% (55/60) achieved this after applying the tool; 62% (220/325) and 76% (247/325) of the G1 and G2 groups, respectively, achieved this in the pre-application phase, and 92% (300/325) and 84% (272/325) of the G1 and G2 groups, respectively, achieved this in the post-application phase. These results may signal a greater degree of knowledge acquisition, as the higher the post-test score obtained, the greater the likelihood of enhancing knowledge (Table 4).

Regarding the open-ended question on perceptions of the use of Internet tools, we identified the following focuses: "knowledge expansion," "applicability in practice," "the rate of information dissemination" and "updating", with no distinctions between answers given by interns from groups G1 and G2 in both the pre- and post-application phases. The instructors focused on one of the students' answers: "the acquisition of knowledge."

We then verified studies on this subject listed in the Virtual Health Library (BVS). This database was selected due to its academic representation of teaching in the Brazilian health care field; representation within the BVS Network, which covers 30 countries of the Americas, the Caribbean, Africa and Europe; and quality through its certification by Latin American and Caribbean Center on Health Sciences Information (BIREME)/Pan American Health Organization (OPAS)/ World Health Organization (OMS).

For our study, we used 3 fundamental terms: "instruction," "training" and "basic care". The term "tutoring" was also used rather than "instruction" as a term already classified as a descriptor of health. The results presented here are based on 175 documents, including 171 articles and 2 theses. We chose to narrow our results by applying "tutoring" as a search term (leaving 90 documents) and then applying the "complete text" limitation, leaving 24 national and international documents (23 articles and 1 thesis). To better analyze these results, we summarize the content of certain studies in Table 5.

Discussion

Our results show that issues related to instructor qualifications are recognized among teachers and students. Thus, means of improving qualifications for this profession should be explored as noted by Demarzo (2011) [21].

Our findings reveal a variety of perceptions for and proposed approaches to (ideal) training in health care and more specifically in PC and BHFU practices used at medical schools. In this regard, Bollela et al (2010), in his book "Internato Baseado em Competências" p.6, argue that competencies must be based on the following 4 essential aspects emphasized during instruction [22]:

Cognitive functions: acquisition and use of knowledge to solve real-life problems;

Integrative functions: use of biometric and psychosocial data to elaborate on clinical reasoning;

Relationship functions: effective communication with patients, patients' families and members of health care teams;

Affective and moral functions: availability, patience, tolerance, and respect and the ability to use these attributes in a judicious and humane way.

In this study, we prioritized "cognitive functions" and more specifically "knowledge acquisition" that PC instructors may exhibit and/or perfect with undergraduates under supervision.

The proposal to use electronic portals is consistent with the prioritization of cognitive functions and with the use of the "SBE" electronic portal of the Ministry of Health (MS) prepared in partnership with Coordination for the Improvement of Higher Education Personnel and the Ministry of Education and Culture (Capes/MEC), allowing one to navigate twelve health care databases in addition to a digital library of several scientific publications. The portal has provided free training for 370.000 physicians and 1.200.000 health professionals according to the Federal Medical Council (SBE, 2012, CFM, 2013). Currently, the MBE plays a key role in clinical decision-making in various medical specialties [12, 13]. Other digital libraries include Elsevier Publishing House's "evolution" portal and the BVS portal, which includes systematic reviews from Cochrane, the US National Library of Medicine, the National Institutes of Health, and PubMed. Finally, Telemedicine and telehealth resources have been used and analyzed in relation to collaborative research, tele-education and teleassistance through the National Telehealth Project of the Ministry of Health via teleconference classes and distance learning courses.

In sum, BFHU teaching/learning can significantly improve the cognitive outcomes of discussions of clinical issues when Internet resources such as electronic portals, virtual and digital libraries, and telemedicine and telehealth services are used.

The use of these resources can be associated with higher levels of information dissemination in academic circles. The Ministry of Health has started to offer undergraduates of medical schools and professionals free access to its SBE Portal for under their respective councils. In turn, only those without Internet and/or computer access, who are not accustomed to using these tools, or who do not wish to use these tools do not enjoy access. As a result, a key question remains. How can we encourage students with Internet access to use these resources?

Most issues highlighted by BHFU students focused on teaching-work processes, ultimately disfavoring the likelihood of the strong or moderate use of these electronic tools. In addition, instructor quality could also suffer from these factors, which seems to corroborate the students' feedback. Thus, we can assume that the central problem concerns the training of instructors, who are further hampered by their multiple roles and responsibilities. We also found that hardly any instructors would be able to successfully perform all functions (cognitive, affective-emotional and psychomotor).

Conclusion

While we do not have an ideal model for PC instructor training, we recommend the use of the SBE Portal as a means to improve instructors' cognitive functions and to assist UBSF professionals with their daily tasks. We emphasize the need for interaction between doctors, students and health professionals as a way to improve PC. In this way, we can contribute to their training and encourage good clinical and PC practices among medical students and medical school graduates, which will prove indispensable to the Brazilian population and to populations worldwide.

Abbreviations

- AMI - Acute Myocardial Infarction
- BHFU - Basic Family Health Units
- BIREMI - Latin American and Caribbean Center on Health Sciences Information
- BMJ - British Medical Journal
- BVS - Virtual Health Library
- CAPES - Coordination for the Improvement of Higher Education Personnel
- MBE - Evidence Based Medicine
- MEC - Ministry of Education and Culture
- MS - Ministry of Health
- OPAS - Pan American Health Organization
- OMS - World Health Organization
- PC - Primary Care
- RJ - Rio de Janeiro
- SBE - Evidence Based Health

- TCLE - Terms of Free and Informed Consent
- UEL - State University of Londrina
- UFF - Federal Fluminense University
- UFT - Federal University of Tocantins
- UFV - Federal University of Viçosa
- UNIFESO - University Center of Serra dos Órgãos
- WFME - World Federation of Medical Education

Declarations

Ethics approval and consent to participate: Approval for this project was obtained from the Research Ethics Committee of University Center Serra dos Órgãos (UNIFESO) and the Oswaldo Cruz Foundation (FIOCRUZ) under no. 457/10 in July 2010 and under no. 506/11 in November 2011, respectively, and also in line with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. After approval was received, questionnaires were administered, and their respective results were analyzed (see Supplemental Digital Appendixes).

Written informed consent was obtained from all individual participants included in the study.

Consent for publication: Not applicable.

Availability of data and materials: The datasets used and/or analyzed in the current study are available from the corresponding author on reasonable request.

Competing Interests: The authors have no conflict of interest to report.

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Author Contributions: JRBC - constructed and apply the questionnaires and interviews, created tables and wrote the paper; LAA - conceived the study and helped analyze the data; AVPA - analyzed the data and helped write the manuscript; CAMS - conceived the study, helped interpret the data and helped write the paper. All authors have read and approved the manuscript final version.

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Tables

Table 1 - List of medical schools and respective student samples and responses marked as highest priority items with absolute and relative numbers of students

Questions	Medical schools with respective student samples for periods and responses considered a priority in absolute and relative values						
	UNIFESO		UFF		UFT	UFV	
Improvement T/L**** (n° abs.)%*	6º T** (64) Capac. preceptor	IS*** (21) Increase pesq.	7º T (28) Capac. preceptor	8º T (47) Capac. preceptor	IS (24) Capac. preceptor	IS (32) Capac. preceptor	7º T (21) Capac. preceptor
	(20) 31%	(6) 29%	(8) 29%	(24) 51%	(8) 33%	(15) 47%	(10) 48%
Problem T/L (n° abs.)%	Lack of disp. preceptor	Lack of disp. preceptor	Absence capac. preceptor	Absence capac. preceptor	Absence capac. preceptor	Absence capac. preceptor	Absence capac. preceptor
	(25) 16%	(4) 19%	(11) 39%	(15) 32%	(8) 33%	(10) 31%	(10) 48%

* Absolute values are shown in parentheses with respective percentages

** T- Term

*** IS- Internship

**** T/L-Teaching and Learning

Table 2 - Themes identified from conversations with UNIFESO, UFF and UFT preceptor

Themes identified from conversations with UNIFESO, UFF and UFT preceptor

How would you recommend improving teaching and learning in Primary Care or Basic Family Health Units (BHFUs)?

Themes	Responses from UNIFESO preceptors
Community projects	"Maintaining contact with the community is very important for learning purposes" "The interns learn a lot by teaching the younger students"
Learning through teaching planning	"A smaller number of students should be taught at a time" "The large number of students and population to be served limits the amount of time that can be dedicated to each individual" "Integrate the academy with city governance to improve practices" "Focus the academy more on real conditions" "I try to help identify themes and structure proposed schedules" "Specialists must advise us on the different Units" "We need continuing education activities"
Preceptor qualifications	

Permanent education and continued

Themes	Responses from UFF preceptors
To learn is to do	"The best way to learn is to practice doing tasks" "Knowledge from Unit specialists should be used to move beyond ethics to doctor-patient relationships and technical knowledge"
Preceptor qualifications	"The teachers are specialists who engage in specialized HUAP* activities and who do not want work with the HBU** because they do not want to leave the hospital environment. The university should have teachers with this profile work directly with the BHFU ..." "Supervision should be more active" "Preceptors should engage with professionals involved in services" "There must be a willingness to engage in TCS***" "The HBU** must be structured to receive students and teachers and to understand what it means to incorporate a new discipline into the unit" "We must not forget the need to constantly read new articles"

Planning	"Reopening emergency care at HUAP* would be a great experience" "I think that insertion in later stages before graduation would be more productive" "Use active learning methods"
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Preceptor professional development
Emergency care reopening

Early insertion

Active learning methods

Themes**Responses from UFT preceptors**

Preceptor qualifications	"There must be specialized academic training with specialized didactic material" "The HBU** determines the number of people assisted and there is no time to discuss cases" "We must improve counter references for the discussion of diagnoses" "There is not enough discussion time" "There has been decline in local demand"
Planning	"We should standardize subjects and apply activity-based learning" "We must provide more training in community interventions" "More time should be dedicated to carrying out community projects"

Community projects

Source: the authors

*HUAP - Antônio Pedro University Hospital

**HBU - Health Basic Unit

***TCS - Supervised Field Work

Table 3 - List of workshops held on selected themes and relevant comments

Selected themes and activities	Comments
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Group G1 Period: 01/2013 to 04/2013

<p>Weekly workshops involving one preceptor and five interns. Pre- and post-test application using a Likert scale.</p> <p>Themes:</p> <p>Is prophylactic use of acetylsalicylic acid (Aspirin®) beneficial to heart disease patients? Is prophylactic use of Aspirin® beneficial to healthy individuals? Is physical activity beneficial for those who have had or not had an *AMI? What is the relationship between smoking and cardiovascular disease? What is the relationship between diet and cardiovascular disease? What are the benefits of Omega 3 and 6 application? What are the benefits of prescribing polyvitamins and calcium for the treatment of osteoporosis and osteopenia? What are the benefits of applying a post-test?</p>	<p>Excellent reception. The proposal to discuss clinical issues has been accepted. ****MBE and Telehealth discussion.</p> <p>Themes chosen through group consensus among students and the preceptor. Discussion of practical issues such as TV show use. Rudimentary questions that include broader questions. Full use of the portal and its databases in addition to the **BVS. Discussion of systematic reviews. Construction of a flowchart for accessing databases.</p>
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Group G2 Period: 04/13 to 07/13

<p>Weekly workshops involving one preceptor and five interns. Application of a pre-test using a Likert scale.</p> <p>Themes:</p> <p>What are the health benefits of zinc use? What benefits does zinc use offer in childhood, youth and adulthood? How can we use pumpkin seeds; phytotherapy and applications of folk, complementary or alternative medicine to address common complaints related to PC. Phytotherapy Vertigo: What is it? What is its etiology and diagnosis? How can one treat it? What is the efficacy of using cinnarizine (to treat dizziness) and Ginkgo biloba (a herbal medicine used to treat dizziness)? Application of a post-test using a Likert scale</p>	<p>Excellent reception. Discussion of clinical issues. ****MBE and Telehealth discussion.</p> <p>Themes chosen through group consensus among students and the preceptor. Full use of the portal and its databases in addition to the **BVS. Use of systematic reviews and the ***SBE Portal. ***SBE is expanded to include 12 databases.</p>
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Source: the authors

*AMI: Acute Myocardial Infarction

**BVS: Virtual Health Library

***SBE: Evidence-Based Health

****MBE: Evidence-Based Medicine

Table 4 - Likert scale questionnaires of interns (10 students) and respective preceptors with scores of 1 to 5 given for each question

Questions	PRE 10 interns (G1+G2) and 1 preceptor (Preceptor)			POST 10 interns (G1+G2) and 1 preceptor (Preceptor)		
	Prec.	G1	G2	Prec.	G1	G2
1) Primary Care teaching and learning should be improved	4	24	17	5	25	16
2) I have knowledge of search portals	4	12	17	5	22	21
3) I have knowledge of Telemedicine and Telehealth resources	4	8	8	4	24	19
4) I have knowledge of digital libraries	5	16	21	5	24	23
5) My training in online tools such as research sites, digital libraries, Telemedicine and Telehealth has been important	5	20	23	5	23	25
6) My training in online tools such as research sites, digital libraries, Telemedicine and Telehealth has been more important than my use of printed books and my institution's library	3	13	10	4	11	21
7) I have knowledge of evidence-based medicine	1	12	18	4	23	24
8) I apply Evidence-Based Medicine in Basic Care	2	17	20	4	24	22
9) I apply Evidence-Based Medicine in other practice settings (*)	-	17	20	-	23	21
* Preceptor only works at the BHFU						
10) The application of Evidence-Based Medicine can improve my knowledge base	5	20	25	5	25	25
11) The application of Evidence-Based Medicine can improve my performance in Primary Care	5	22	25	5	24	25
12) My teachers or preceptors (**) have knowledge of Evidence-Based Medicine	1	20	19	4	20	20
** For the preceptor = students						
13) I discuss medical practices based on evidence-based medicine with my teachers or preceptors (**)	1	15	16	5	24	22
** For the preceptor = students						
Total possible (absolute number)	60	325	325	60	325	325
Total presented (absolute number)	40	220	247	55	300	272
Total (relative number)	67%	68%	76%	92%	92%	84%

Source: the authors

Table 5 - List of selected references with study titles and modalities and respective themes identified from the BVS research using the terms instruction and basic care:

REFERENCES	
Title and type of study	-Objective of study with intervention proposal-
<p><i>Ensino e Aprendizagem em Serviços de Atenção Básica do *SUS: desafios da formação médica com a perspectiva da integralidade. "Narrativas e Tessituras"</i> PhD Thesis (Albuquerque, 2007)</p>	<p>Focus on teaching, learning and evaluation in basic *SUS services with the analysis of obstacles to and potential for the transformation of training and assistance in terms of completeness with reference to the **DCNs. The work recommends that new care projects for care and training be developed collectively.</p>
<p><i>Improving education in primary care: development of an online curriculum using the blended learning model.</i> Article (Lewin, 2009)</p>	<p>Effectiveness of using a mixed learning curriculum at Case Western Reserve University's School of Medicine in Cleveland, Ohio using modules available online.</p>
<p><i>A preceptoria na rede básica da Secretaria Municipal de Saúde do Rio de Janeiro: opinião dos profissionais de Saúde</i> Article (Trajman <i>et al</i>, 2009)</p>	<p>Evaluations of 351 PC health professionals of the ***SMS in Rio de Janeiro on teaching activity. It is shown that there has been little appreciation and encouragement of teaching based on work and teaching conditions or improvements of salaries, infrastructure and professional qualifications. The ****IES and the state are responsible for carrying out effective partnerships to mitigate this situation.</p>
<p><i>Estrategia de superación para perfeccionar la labor del tutor em los estudiantes de Medicina de la Filial de Ciencias Médicas de Morón.</i> Article (Alonso, 2010)</p>	<p>The study finds that the training of tutors for general practitioner students remains insufficient at the School of Medical Sciences of Moron in Cuba. The work proposes a means of improving tutor training through three avenues: overcoming challenges, teaching assistant work and methodological work.</p>
<p><i>Becoming a super preceptor: a practical guide to preceptorship in today's clinical climate.</i> Artigo (Barker <i>et al</i>, 2010)</p>	<p>The study proposes ways to apply realistic techniques to ensure that instruction is successful.</p>
<p><i>Competencias docentes del Médico de Familia em el desempeño de la tutoría em la carrera de Medicina</i> Article (Sotolongo <i>et al</i>, 2005)</p>	<p>The work verifies the absence of a system for selecting and training tutors. Moreover, the authors criticize a lack of suitable scenarios for teaching due to material difficulties. It is observed that inadequate teaching-service relationships have resulted in improvisation and a lack of preceptor motivation. The work calls for the use of skills that can improve pedagogical management among family doctors who serve as tutors.</p>

*SUS: Brazil's Unified Health System
**DCNs: National Curricular Guidelines
***SMS: Health Department of Rio de Janeiro
****IES: Higher Education Institutions

Supplementary Files

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- [Appendixesfinal.docx](#)