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Development and Validation of a Questionnaire to Assess the Effect of Online Learning on Behaviors, Attitudes, and Clinical Practices of Physical Therapists in the United States Regarding Evidenced-based Clinical Practice

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ABSTRACT
Purpose: The purpose of this study was to evaluate the face and content validity of a modified self-report questionnaire adapted from previous studies' questionnaires. The modified questionnaire will be used in a later study to assess the effect of online learning on behaviors, attitudes, and clinical practices of physical therapists in the United States regarding evidence-based clinical practice. **Methods**: An expert panel of nine physical therapists in the field of evidence-based practice reviewed and rated the modified instrument for the relevance and representativeness of each item based on a dichotomous rating of favorable or unfavorable. Their ratings were used to calculate the content validity index values of each final item. Items with content validity index (CVI) greater than 0.78 were included in the final instrument. **Results:** The final instrument contained 23 Likert-type scale multiple choice questions and 13 dichotomous "yes" or "no" response options, and 13 are ranked response options categorized under eight thematic domains designed to address the effect of internet use and online information resource use on evidence-based practice among physical therapists in the United States. Demographic and practice data were also collected. **Conclusion**: The preliminary findings support the face and content validity of this 59-item questionnaire pending further validation for construct and criterion validity.

BACKGROUND AND INTRODUCTION

Evidenced-based practice (EBP) is one of the five key elements of the American Physical Therapy Association (APTA) Vision 2020 adopted by the House of Delegates in the year 2000.[1] Several studies have posited that in order for the importance and effectiveness of physical therapy (PT) approaches to be measurable, the implementation of those approaches must be subject to standardization and uniformity of the criteria.[2-6] These researchers argued that consistency in delivery of PT techniques and approaches would facilitate the conduction of acceptable or credible comparative research into the effectiveness of such clinical approaches, even at an international level. Thus, there is a need to assess the use of research evidence – EBP – among PT clinicians in order for the APTA Vision 2020 EBP goals to become achievable.

Several earlier studies have elucidated many factors that hinder the practitioner's ability to integrate evidence-based methodologies into daily clinical practices.[2-6] These studies suggested that availability and ease of access to research evidence is the key to ensuring that busy clinicians embrace and adopt evidence-based treatment approaches. Specifically, a 2003 study

by Jette et al to evaluate physical therapists' (PT) beliefs, attitude, knowledge, and behavior regarding evidence-based practice (EBP) noted that the utilization of web-based information was strongly dependent on accessibility to computer technology, which in turn was tied to the type of practice environment.[3] That is, clinicians in practice settings that provided access to health information technology demonstrated greater propensities to access online evidence for clinical guidance. The same observation was made in a 2007 study by Bridges et al.[4]

Furthermore, studies by Jette et al, Bridges et al, and other investigators showed that PTs with internet access at home and work had greater tendencies to seek, interpret, and utilize web-based information.[2-6] In addition, their findings that recent graduates demonstrated higher propensities to adopt and utilize evidence-based approaches while more experienced practitioners tended to depend on professional peer-to-peer or expert opinion for practice guidelines has been repeatedly corroborated in other studies.[2-6] Many of the investigators posited that such tendencies by recent graduates may be due to the fact that application and usage of computer technology is an integral part of their professional education process. They posited that recent graduates are more computer literate or more technologically well informed than the previous generation of PTs. All of the previous studies suggested the need for future research to examine the specific means by which PTs seek, collect, and integrate evidence into clinical practice.[2-6]

However, over the past few years, proliferation of computer-based learning and online information access among the general populace has created a significant paradigm shift in use, distribution, and application of various types of information. The Pew Research organization reported that over 90% of American households have access to a computer for web hosted information, and over 80% of adults ages 18 to 65-years-old use the internet regularly.[7] Such observation may suggest that today's healthcare professionals, in particular PTs, are using web-hosted information more than ever before. It is unclear whether such affinity for online information is for professional enrichment or for non-job related social networking among other usage reasons; the specific reasons are unknown.

Many of the prior studies mentioned above have separately examined trends, such as 1) attitude and behaviors and other general factors influencing the propensity of practitioners to utilize EBP, or 2) use of information technology among healthcare professionals using the same or similar survey instrument in various clinical settings and geographic locations, thus demonstrating the validity and reliability of the instrument used to assess such trends and factors affecting the adoption of EBP.[2,6,8] Nevertheless, there has been no documented evidence that examine the relationship between use of the internet and the propensity to adopt EBP among PTs. Therefore, the aim of this study is to adapt and validate a survey instrument that can be used to examine the effect internet use has on behavior and attitudes of PTs towards EBP in regards to their clinical practice.

This instrument was based primarily on the instrument used in an earlier study by Jette et al to examine how the aforementioned characteristics relate to the physical therapy practitioner tendency to adopt evidence based approach.[3] The questionnaire items to explore use of web-based resources were based on a similar tool used by Podichetty et al in an earlier study.[8] The study by Podichetty et al was relevant because it examined the correlation between use of internet for information and clinical practice in a multidisciplinary environment. In addition, the ideas for the scale used to assess the rate and use of web-based resources – internet behavior – was patterned after the scale used by Kumar et al to study rate of computer use and measure internet behaviors of engineering teachers and students.[9]

The strength of a research study design is strongly dependent on how precisely the identified variables are measured; this is known as validity.[10] Validity denotes the extent to which specific items on a tool accurately assess the concept being measured in the research study. Validity ensures that the questions being asked allow valid inferences to be made. The three types of validity related to data measurement are 1) content (and face) validity, 2) criterion (predictive) validity, and 3) construct validity. In this study, we sought to ensure that the items in our questionnaire addressed each thematic domain that will be explored in a future study; this study addressed face and content validity.

The importance of a rigorous process to ascertain face and content validity of an instrument has been emphasized in several studies, but most succinctly Haynes et al as follows:[11-20]

- Content validity is essential to predict the efficacy of the tool in order to minimize or eliminate measurement errors that may occur when multiple measures are required.
- Content validity allows the study tool to effectively capture all the aspects of the construct and variable that may be outside the thematic domain by highlighting the degree of covariance.
- Content validity impact the veracity of clinical inferences that may be drawn from the data obtained. That is, to demonstrate how well obtained data is able to adequately address and suffice for the variables inside the specific thematic domain.

The adoption of a rigorous content validation approach in our study allowed us to demonstrate that this instrument is comprehensive enough with regards to conciseness and completeness required to establish the tool's credibility at the preliminary stages.[11,12,14,16,21]

Face validity denotes the conciseness of the items on the instrument concerning clarity, brevity, and completeness. Content validity denotes the degree to which items on the instrument relate to the subject matter and their appropriateness with regards to the objectives being addressed by the test.[10] Content validity relies upon judgment of an expert panel.[3,10,11] The expert panel member must possess extensive knowledge and demonstrate a good grasp of the subject being explored. The adequacy of the final content of the test instrument would be based on the collective opinion of these experts based on their professional assurance. The modified instrument is evaluated to determine the extent to which each item appear to be a valid measure of the attribute it is meant to measure. This study aimed to appraise the face and content validity of a modified self-report questionnaire adapted from questionnaires used in previous studies.

METHODOLOGY

Description and Development of the Instrument

The type of validity we are going to ascertain in this study is the face and content.[10] Most of the initial 63 items on this multilevel assessment instrument were adapted primarily from a previously validated instrument used in a 2003 study by Jette et al.[3] The reliability and validity of the original instrument was also established by the original author and in subsequent studies.[4-6] Written permission was sought and granted to this author. Some of the wordings were changed and updated for consistency by the authors of this study to adequately address the objectives of our study. The seven main attributes – attitude and beliefs about EBP, interest and motivation to engage in EBP, educational knowledge and skills to access and interpret information, level of attention and utilization of literature, accessibility to pertinent information, barriers or facilitators to EBP, demographic and practice setting – were retained. The conceptualized characteristics of the PT to be assessed by the revised instrument include extent of computer use with regards to assessment of online information competency of each PT and attitude and behaviors regarding EBP. With permission from Podichetty et al, additional items were adapted and incorporated to determine the pattern and extent of online information resources computer.[8]

The resulting instrument was designed to explore the following thematic domains:

- Attitude and beliefs about EBP
- Interest and motivation to engage in EBP
- Educational knowledge and skills to access and interpret information
- Level of attention and utilization of literature
- Internet behavior
- Accessibility to pertinent information
- Barriers or facilitators to EBP
- Demographic and practice data to determine the respondent's personal characteristics and practice environment.

Furthermore, the use of a 5-point Likert type scale was retained; the agreement scale options were "strongly agree," "agree," "neutral," "disagree," "strongly disagree," for items relating to attributes and knowledge. However, items pertaining to use of technology (internet behavior) and access to information used a dichotomous scale with categorical option of "yes/no" responses. Remaining items utilized a fill-in-the-blank format. A non-applicable category was added to certain areas where the options provided do not apply to the participant.

Administration Procedure for Face and Content Validity

Based on suggestions by experts in the field of content validation,[11-15] nine experts were identified and invited to review the instrument for face and content validity. Specific guidelines used for selection and inclusion of the experts included:

- Experienced and licensed physical therapists (≥ 10years)
- Familiarity with the thematic domains/concept in evidence-based practice (teaches or publishes peer-reviewed papers in the field of evidence-based practice).

The instruments were distributed via the electronic media (email) with an introductory cover letter to each panelist/reviewer (see appendix A). The completed instruments were returned to the author via the same medium. The panelists were provided with detailed instruction to identify the correlation between items of the instrument and the aforementioned thematic domains (see appendix A). This was done in order to ensure that there was a sufficient level of control for chance agreement and statistical

justification especially with regards to the newly added items.[11-14,16] Also, this was necessary in order for us to determine how well the new item additions assimilated into the previously validated instrument and the ability to retain its usability.

The experts were also requested to identify deficient areas and provide recommendations or suggestions on ways to improve the sentence structure to ensure clarity and conciseness based on any difficulties encountered in deciphering the instructions for filling out the instrument.[11,17]

The responses of the panel of experts were indicated by the use of favorable or unfavorable ratings. A favorable rating meant that the item was objectively structured and could be positively classified under the thematic category. In addition, the reviewers were to indicate any perceived inconsistency or potential difficulties regarding the clarity and succinctness of the individual items. The cumulative average of the level of agreement among the experts is assigned a numerical value known as content validity index (CVI).[11] The CVI is the proportion of items on an instrument that achieved a relevant rating by the content experts.[12,13] In a panel consisting of nine experts, a CVI index of greater that 80% or 0.80 is a high value which denotes a high level of agreement – a significant majority of the panel's opinions agree that items are relevant to concepts being investigated – and reveals the potency of the items on the instrument. Likewise, a low CVI of less than 80% means the items on the instrument does not adequately address the thematic domains being explored because it raises the issue of objectivity and appropriateness. Such an instrument must be significantly revised before it can proceed onto the next stage in determining the validity and reliability of the instrument. The overall snapshot was that the instrument must be able to measure the concepts that were being studied adequately.

DATA ANALYSIS

The content validity of the instrument was established based on the magnitude of the content validity index (CVI) values as it related to degree of agreement among the panelists.[11,16,18,19] Based on recommendations from previous studies, we set the minimum level of agreement between nine panelists at ≥ 0.78 at 0.5 level of significance.[11,13] This meant that seven of the nine judges must agree in order for the items to be part of the final instrument. Item CVI score of less than 0.78 means the item was considered either not relevant to the thematic domain, or that the item required verbiage revision to remove ambiguity and ensure an accurate response.

A dichotomous rating of favorable or unfavorable was used for the quantification of content validity.[17] Favorable (F +) denoted items that were deemed either as relevant, needed minor rewording for relevance, succinct and concise as is. These items were assigned a score of +1.0. Unfavorable (F -) denoted items that were deemed either not relevant or unable to determine their relevance based on current sentence structure. These items were given a score of +0.0.

A favorable rating by seven or more members of the expert panel yielded a CVI index of greater than 78% or 0.78 denoted a high level of agreement is a high value. This meant that if a significant majority of the panel's opinions agree, items were considered relevant to concepts being investigated. Responses were imputed to a spreadsheet and checked for missing values using 2007 Microsoft Office Excel for Windows.

RESULTS

All members of the panel were physical therapists who have worked in the fields of EBP either as authors/researchers (three panelists), instructors (three panelists), or clinical consultants (six panelists). The numbers of years in practice as PTs ranged from 10 to 30 years, mean years of experience for all the panelists were 20.1-years, SD±7.3 (n=9).

The revised instrument, after panel review was consolidated and analyzed, contained 59 items from the original 63 items. Four items (items 24, 43, 51, 52) were excluded due to low agreement among the reviewers, CVI <0.78 (see items highlighted in red in Table 1). The four items omitted from the original version were deemed irrelevant to the thematic domains by a greater majority of the panel. They included

- An item about the type of internet access – hi-speed or dial-up- under the internet behavior thematic domain;
- An item about respondent's ability to decipher statistical terms under the thematic domain of educational knowledge and skills to access and interpret information;
- Two items, under the demographic and practice data, about respondent's plans for advanced degrees or clinical specialization were considered irrelevant to the demographic and practice data.

Six of the nine members suggested their removal, three of the panelists opined that the attribute were not relevant to the study objectives. Although items 11 and 30 received low agreement (highlighted in green), they were retained with significant rewording to remove ambiguity of the wordings. Based on feedback from the panelists, the two items' thematic domain was

correctly identified by all panelists, but three of the panelists thought the wordings were vague. In addition, all the panelists agreed on the relevance of the items to their thematic domains. In addition, the sentence structure of items 10, 15-20, 29-31, and 35 were also rearranged based on feedback received.

The final instrument (Appendix B) contained 59 items with multiple choice or ranked response options categorized under their thematic domains. Twenty-three of the 59 items consisted of Likert type scale multiple-choice questions, 13 items had dichotomous yes/no response options, and the remaining 13 are ranked response options. The remaining 10 items are related to demographic and practice data.

Table 1. Content Validity Indices

Item number	Content Validity Index	Item Number	Content Validity Index
1	1	41	0.777777778
2	1	42	0.777777778
3	1		
4	0.888888889	43.1	0.666666667
5	0.888888889	43.2	0.666666667
6	1	43.4	0.666666667
7	1	43.5	0.666666667
8	1	43.6	0.666666667
9	0.777777778	43.7	0.666666667
10	1	43.8	0.666666667
11	0.666666667	44.1	1
12	1	44.2	1
13	0.777777778	44.3	1
14	0.888888889	44.4	1
15	1	44.5	1
16	0.888888889	44.6	1
17	0.888888889	44.7	1
18	0.888888889	44.8	0.888888889
19	0.888888889	44.9	1
20	0.777777778	45	1
21	0.777777778	46	1
22	1	47	1
23	1	48	1
24	0.666666667	49	1
25	1	50	0.888888889
26	1	51	0.666666667
27	0.888888889	52	0.666666667
28	1	53	1
29	0.888888889	54	1
30	0.666666667	55	0.888888889
31	0.777777778	56	0.888888889
32	0.777777778	57	0.888888889
33	0.888888889	58	1
34	0.777777778	59	1
35	1	60	1
36	0.888888889	61	1
37	0.777777778	62	1
38	0.888888889	63	1
39	0.888888889		
40	0.888888889	Total # favorable	58.5
		Proportion favorable	0.93

DISCUSSION

This study established the content validity of a modified instrument designed to assess the relationship between utilization of online information resources and PTs' behaviors, attitudes, knowledge, and adoption of EBP. The CVI method used in this study does not indicate the level of agreement; rather it measures the proportion of agreement among a group of experts. In addition,

unlike other content validation methods such as the multirater- Kappa coefficient, the CVI is not able to delineate chance agreement. Thus, the minimal agreement of some of the items may have been because the CVI uses only a dichotomous scale – relevant or not relevant – that does not allow chance agreement among panelists. However, this characteristic makes the CVI very robust in that it eliminates ambivalence and allows straightforward interpretation, which helps in constructing more reliable and valid data concerning content validity.

The items on the final instrument strongly represented the thematic domains as follows:

- Items 1,2,4,6 to 12 represented attitude and beliefs about evidenced-based practice
- Items 3 and 5 represented interest and motivation to engage in evidenced-based practice
- Items 13 to 15 represented level of attention and utilization of literature
- Items 16 to 21 represented accessibility to pertinent information
- Items 22 to 35 represented internet behavior
- Items 36 to 40 represented educational knowledge and skills to access and interpret information
- Item 41 represented barriers to evidenced-based practice
- Items 42 to 59 represented demographic and practice data

The four items omitted from the original version were deemed irrelevant to the thematic domains based on the low CVI index. It is important to note that the deleted items were removed because of perceived ambiguity in their applicability to their thematic domains as related to the goals of a future study for which the survey is designed. The future study will evaluate the relationship between accessibility and use of computer resources, and attitudes of PTs towards evidence-based clinical practice. The remaining items under the affected thematic domains were considered sufficient for the purpose of the instrument. For example, in regards to item 43, the original study by Jette et al that utilized the item (and its sub-items) to evaluate subjects' actual critical appraisal skills of empirical research by rating of statistical terms will not be explored in our future study.[3] Rather, our future study will evaluate self-reported literature appraisal skills more generally as related to the PT's ability to retrieve web-based clinical resources or treatment guidelines. In addition, inclusion of items in subsequent studies similar to our future study exploring attitudes, beliefs, and behaviors have varied depending on the focus of the studies.[4-6,8]

CONCLUSION

This new instrument, in its entirety, has been found to demonstrate an adequate and acceptable measurement performance needed for a future descriptive study to assess the effect of web accessibility and usage including online learning on behaviors, attitudes, and clinical practices of physical therapists in the United States regarding evidence-based clinical practice. Our questionnaire appeared to have adequate face and content validity.

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Appendix A
Invitation to Participate in an Expert Review Panel

Dear colleague,

I would like to invite you to consider being a part of an expert review panel to evaluate the content validity of a questionnaire. The development of the questionnaire is an independent study I am conducting to assess the relationship between use of internet and attitude of PTs towards evidence-based practice. I am very aware of your busy schedule, but your input would be greatly appreciated since this is a topic area. This questionnaire is designed to address factors affecting evidence-based practice in physical therapy profession in a future study. This study will examine the effect of the internet on attitudes, behaviors, and use of evidence-based practice among physical therapists; it is being conducted as a partial fulfillment of the requirements for my PhD degree in physical therapy at the MY university in (insert state name) under the supervision of Dr. Mi Supervisor.

Your voluntary participation in this project will provide useful information on this topic. Your extensive years of experience as a physical therapy professional, researcher, or educator qualify you for participation as a member of the panel of experts who will attempt to match the operational definitions with their appropriate categories within the questionnaire. Your comments and opinions would be greatly appreciated; it would help me to rewrite some of the items that were not successfully classified.
Please complete the enclosed survey by June 26th 2009.
If you have any questions about any aspect of this study, please contact me at- xx@.edu or call XXX-XXX-XXX. You may also contact supervising faculty, Dr. XXXXX at XXX-XXX-XXX.

Instructions:
Please fill in your information below:
Date:
Name:
Address:
Title/Position:
Years (PT):

Please individually rate following 63 items favorable (positive) or unfavorable (negative) to the survey items you believe refers to – attitudes and beliefs about evidence based, interest in and motivation to engage in EBP, educational background and knowledge and skills related to accessing and interpreting information, level of attention to and utilization of literature, internet behavior, accessibility to relevant information to enhance and perceived barriers EBP.
Please, fill in your comments/ ratings in the space following each question (not in the answer section). You may also provide additional comments that identify deficient areas and provide recommendations, suggestions on ways to improve the sentence structure to ensure clarity and conciseness based on any difficulties you encountered in deciphering the instructions for filling out the instrument.
Thank you for your assistance.

Sincerely,
XXXXXXXXXXX

Appendix B
Evidence Based Practice (EBP) Questionnaire - Final Version

This section of the questionnaire inquires about personal use of, and perceived benefits and limitation of EBP.

For the following items, click on the appropriate box that indicates your response.	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1. Application of EBP is necessary in the practice of physical therapy.	☐	☐	☐	☐	☐
2. Literature and research findings are useful in my day-to-day practice.	☐	☐	☐	☐	☐
3. I need to increase the use of evidence in my daily practice.	☐	☐	☐	☐	☐
4. The adoption of EBP places an unreasonable demand on physical therapists.	☐	☐	☐	☐	☐
5. My facility supports the use of current research in practice.	☐	☐	☐	☐	☐
6. I am interested in learning or improving the skills necessary to incorporate EBP into my practice.	☐	☐	☐	☐	☐
7. EBP improves quality of patient care.	☐	☐	☐	☐	☐
8. EBP does not take into account the limitations of my clinical practice setting.	☐	☐	☐	☐	☐
9. My reimbursement rate will increase if I incorporate EBP into my practice.	☐	☐	☐	☐	☐
10. Strong evidence is lacking to support most of the interventions I use with my patients	☐	☐	☐	☐	☐
11. EBP helps me make decisions about patient care.	☐	☐	☐	☐	☐
12. EBP does not take into account patient's reported values and treatment preferences	☐	☐	☐	☐	☐

For the following items, please click on the appropriate box that indicates your response for **a typical month**

13. Read/review peer-reviewed research/literature related to my clinical practice	☐≤1 article	☐ 2-5 articles	☐ 6-10 articles	☐11-15 articles	☐ 16+ articles
14. Use professional literature and research findings in the process of clinical decision making	☐ ≤1 times	☐2-5 times	☐ 6-10 times	☐11-15 times	☐16+ times
15. Use MEDLINE, CINAHL, APTA Open Door or other databases to search for practice-relevant literature/research.	☐≤1 times	☐ 2-5 times	☐ 6-10 times	☐11-15 times	☐16+ times

The following section inquires about personal use and understanding of clinical practice guidelines. Clinical practice guidelines provide a description of standard specifications for care of patients with specific diseases and are developed through a formal, consensus-building process that incorporates the best scientific evidence of effectiveness and expert opinion available. For the following items, click on the appropriate box that indicates your response

16. Clinical practice guidelines are available for topics related to my practice.	Yes ☐	No ☐	Do Not Know ☐		
17. I am aware that clinical practice guidelines are available online.	Yes ☐	No ☐	Do Not Know☐		
18. I am able to access clinical practice guidelines online.	Yes ☐	No ☐	Do Not Know ☐		
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
19. I actively seek clinical practice guidelines pertaining to my practice areas	☐	☐	☐	☐	☐
20. I use clinical practice guidelines in my practice.	☐	☐	☐	☐	☐

21. I am able to incorporate patient preferences with practice guidelines	☐	☐	☐	☐	☐

The following section inquires about availability of resource to access information and personal skills in using those resources and your internet usage pattern - at home and/or at work.

22. I have access to current research through professional journals in their paper form.
☐Yes ☐ No
23. I have the ability to access relevant databases and the internet at my facility.
☐Yes ☐ No
24. I have the ability to access relevant databases and the internet at home or locations other than my facility.
☐Yes (at home) ☐Yes (at work) ☐Yes (both) ☐ Not applicable
25. How often do you access the internet?
☐Daily ☐2-3 times/week ☐2-3times/month ☐once/ month
26. How many hours do you spend per week on the internet?
☐<5 hours/week ☐6-14hours/week ☐>15hours/week
27. What do you usually surf the internet for? (click on all that apply)
☐Communication ☐Entertainment ☐Education ☐Research ☐other
28. Which of the following aspects of internet communication do you utilize?
☐ Email ☐chat rooms ☐forums ☐blogs ☐other
29. How do you browse the internet for the required information?
☐Search engines ☐subscription databases ☐other
30. Do you use internet regularly for updating professional (clinical) skills?
☐ Yes ☐No
31. Please indicate which service(s) you utilize most for online peer to peer social networking - check all that apply.
☐Facebook ☐MySpace ☐LinkedIn ☐Twitter ☐Other
32. Please indicate which service(s) you utilize for online peer-to-peer professional networking (e.g. APTA Blog, Myphysicaltherapyspace, Advance for PT web blog, etc)
33. Does information from websites influence your healthcare decisions?
☐Yes ☐No
34. Do you trust the general quality of medical/professional websites?
☐Yes ☐No
35. Have you participated on web based continuing education courses?
☐Yes ☐No

For the following items, click on the appropriate box that indicates your response; in items referring to your "facility," consider the practice setting in which you do the majority of your clinical care.

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
36. I learned the foundations for EBP as part of my academic preparation	☐	☐	☐	☐	☐
37. I have received formal training in search strategies for finding research relevant to my practice	☐	☐	☐	☐	☐
38. I received formal training in critical appraisal of research literature as part of my academic preparation	☐	☐	☐	☐	☐
39. I am confident in my ability to critically review professional literature	☐	☐	☐	☐	☐
40. I am confident in my ability to find relevant research to answer my clinical questions	☐	☐	☐	☐	☐

For the following items, rank your top 3 choices by placing numbers in the appropriate boxes (1=most important).

41. Rank your greatest barriers to the use of EBP in your clinical practice.

	1	2	3
Insufficient time	☐	☐	☐
Lack of information resources	☐	☐	☐
Lack of research skills	☐	☐	☐
Poor ability to critically appraise the literature	☐	☐	☐
Lack of generalizability of the literature findings to my patient population.	☐	☐	☐
Inability to apply research findings to individual patients with unique characteristics.	☐	☐	☐
Lack of understanding of statistical analysis	☐	☐	☐
Lack of support among my peers/colleagues/employer	☐	☐	☐
Lack of interest	☐	☐	☐

The following section inquires about personal demographic information. For the following items, choose the appropriate box that indicates your response.

42. What is your gender? ☐ Male ☐ Female
43. What is your age group? ☐ 20-29y ☐ 30-39y ☐ 40-49y ☐ 50+y
44. Do you currently hold a valid physical therapy license? ☐ Yes ☐ No
45. For how many years have you been licensed? ☐ <5y ☐ 5-10y ☐ 11-15 ☐ >15y
46. What is your entry-level degree for physical therapy?
    ☐ Certificate ☐ Baccalaureate ☐ Entry-level master's ☐ Entry-level doctorate
47. What is your highest degree attained?
    ☐ Baccalaureate ☐ Entry-level master's ☐ Advanced master's
    ☐ Entry-level doctorate ☐ Advanced doctorate ☐ Other
48. Are you a clinical certified specialist? If yes, which speciality?
    ☐ Yes ☐ No Speciality:
49. Do you regularly (≥ once per year) participate in continuing education courses?
    ☐ Yes ☐ No
50. Do you belong to one or more professional practice-oriented organization (e.g. APTA)?
    ☐ Yes ☐ No
51. Are you a clinical instructor for physical therapist student/interns/residents?
    ☐ Yes ☐ No
52. On average (within the past year), how many hours per week do you work?
    ☐ <20 ☐ 20-30 ☐ 31-40 ☐ >40
53. On average (within the past year), how many patients do you see daily?
    ☐ <5 ☐ 5-10 ☐ 11-15 ☐ >15
54. How many full-time physical therapists are in the facility in which you do the majority of your patient care?
    ☐ <5 ☐ 5-10 ☐ 11-15 ☐ >15
55. Please indicate the percentage of your total work time that you spend in each type of activity during an average month.
    a) Patient care %
    b) Research %
    c) Teaching %
56. Which of the following best describes the location of the facility in which you perform the majority of your patient care?
    ☐ Rural ☐ Urban ☐ Suburban

57. List the state(s) in which you practice.

58. Which of the following best describes the facility at which you do most of your patient care?
☐Acute care hospital ☐acute rehabilitation ☐subacute rehabilitation
☐Skilled nursing facility ☐home care ☐school system
☐University ☐privately owned outpatient clinic
☐Facility-based outpatient clinic ☐other

59. Which of the following best describes the majority of patients and types of problems you see? Click one box in each section.

Section 1
☐Orthopedic
☐Neurological
☐Cardiovascular/pulmonary
☐Other
☐Do not treat patients

Section 2
☐Pediatric (<18y)
☐adult (19-64y)
☐geriatric (65+y)
☐other
☐do not treat patients

This Questionnaire was adapted (with permission) based on previous studies by the following:

Kumar R, Kaur A. Internet Use by Teachers and Students in Engineering Colleges of Punjab, Haryana, and Himachal Pradesh States of India: An Analysis. E-JASL 2006;7:1 (Open Access) Available at http://southernlibrarianship.icaap.org/content/v07n01/kumar_r01.htm Accessed on November 12, 2012.

Jette DU, Bacon K, Batty C, Carlson M, Ferland A, Hemingway RD, Hill JC, Oqilvie L, Volk D. Evidenced-based practice: beliefs, attitudes, knowledge, and behaviors of physical therapists. *Phys Ther*. 2003;83(9):786-805. [PMID 12940766]

Podichetty VK, Booher J, Whitfield M, Biscup RS. Assessment of internet use and effects among healthcare professionals: a cross sectional survey. *Postgrad Med J*. 2006 Apr; 82(966):274-9. [PMID 16597816]