

## RESEARCH ARTICLE

**Extent of EBP process implementation of PT Clinicians in PLM-affiliated institutions**

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**Background:** Evidence Based Practice (EBP) is the conscientious, explicit and judicious use of current best evidence in making decisions about the care of an individual patient. It integrates clinical expertise, best evidences and patient's values through the implementation of 5 EBP processes: Ask, Acquire, Appraise, Apply and Assess which improve both patient care and clinical practice every time the cycle completes its turn. Despite of its effectiveness, implementation of EBP is a challenge. Variations and inconsistencies in the implementation of the EBP processes were found due to different factors and barriers. Philippines shares the same challenges and barriers in the implementation of EBP process but no local study has been found on the extent of implementation of EBP processes among Physical Therapist.

**Objectives:** This study determines the extent of the EBP processes implemented by PT clinicians in PLM-affiliated institutions.

**Methodology:** This is a descriptive cross-sectional survey that made use of a developed and validated questionnaire which collected the data on demographic profile: age, gender and year graduated, highest educational attainment and the extent of EBP process implementation of Physical Therapist in PLM – affiliation centers.

**Results:** Ninety-three PTs responded in the study. 89.2% (n=83) has BSPT as their highest educational attainment. 2.2% (n=2) has Masters while 3.2% (n=3) has Doctorate in Physical Therapy. EBP is implemented by respondents. Asking clinical questions was implemented at a high extent (composite mean = 2.88) while searching for evidence (2.17), critical appraisal (2.25), use or integration of research (2.46), evaluation of outcomes (2.1) were implemented at a low extent.

**Conclusion:** Although, EBP processes has been implemented in the local university's affiliation, majority of the processes were implemented at a low extent except for asking clinical questions, which was implemented at a high extent. Greater efforts on addressing common barriers have been recommended to be able to fully implement EBP practice.

**Keywords:** Evidence Based Practice, Physical therapy clinicians, PLM-affiliated institutions, EBP Process, implementation

**Introduction**

In the modern physical therapy practice, evidence-based practice (EBP) has become an important intervention in the clinic. According to Sackett *et al.* (2000), EBP has been defined as “the conscientious, explicit and judicious use of current best evidence in making decisions about the care of an individual patient” [1]. This includes integrating individual clinical expertise with the available clinical evidences from systematic research to be able to provide the best interventions in treating patients [2].

EPB involves EBP processes which are systematic steps of obtaining the current and best evidences to be integrated in healthcare professional's clinical practice with the goal of best addressing patient's condition. According to Jewell's Guide to Evidence Based Physical Therapist Practice (2017), these steps include: Ask, Acquire, Appraise, Apply and Assess [3]. Asking a question enables physical therapist to understand the patient's condition and to determine the appropriate diagnostic test and best management or treatment for patients. To answer that

question, the second step is to search and acquire articles and journals related to the answers to the questions. Third, the articles and journals should be appraised critically to be able to assess its credibility, validity, usefulness and relevance to the patient. Fourth, the application of the best evidence in patient management combined with clinical expertise and with consideration of patient's condition, preferences and values. The last step is evaluation of the clinical process and assessment of the patient's outcomes after incorporating research in the clinical practice. With conscientious application of these steps, patient care and clinical practice improve every time the cycle complete its turn [4]. Moreover, EBP adaptation has made clinicians 'better informed' about the patient, [5] and has promoted better patient outcomes [6], improved quality of life (QOL) [7] and has decreased healthcare cost [8].

Although EBP steps have been recommended because of its benefits, the actual implementation in the clinical practice is a challenge [9,10]. According to Moore (2018), there's a variability in EBP practice observed among healthcare team in rehabilitation [11]. Most physiotherapists claimed to implement EBP steps in their clinical practice, however the implementation of each EBP process vary in frequency and are inconsistent [6,12] which therefore, limits the application of full EBP cycle or process [13]. EBP process implementation refers to the application of the tasks involved in the EBP processes from step 1 to 5 and incorporating it in one's clinical practice. The extent of application of each EBP process describes either how frequent one does the EBP tasks [6] or how extensive one applies the EBP tasks in the clinical practice. For instance, Iles (2006) *et al.* found out that majority of the physiotherapist claimed to implement step one by identify gaps in knowledge, however, the item on formulating questions, which is also part of step one, did not match with it. Their study also found out that most physiotherapist frequently acquired and read relevant evidences (step 2), however, less than half of them used database search such as PEDro, Cochrane and Medline (step 2) and only a quarter of them did critical appraisal (step 3) which indicates the lack of discrimination between valid and invalid evidences. Moreover, 70% of the physiotherapist claimed to integrate evidences (step 4) in their clinical practice even if majority of them did not appraise the evidences they obtained. Beirwas (2015) similarly reported that physiotherapists implemented EBP processes, however, the frequencies in the application of each step were inconsistent. It revealed that step 1 (formulating questions) and step 2 (searching for evidences) were less frequently implemented while step 3 (critical appraisal) was the least implemented; step 4 (integration of evidence) and step 5 (evaluation) were reported to be frequently

implemented [6]. The scoping review of literature that Condon, *et al.* (2015) did on the ability of physiotherapist to undertake EBP steps have shown that there's limited evidence of physiotherapist undertaking the full EBP process [13].

Common barriers that led to infrequent and inconsistent implementation of EBP process include lack of time [12,13,14,15,16], lack of knowledge and skills in EBP use [12,17,18,19,20] specifically on acquiring and critically appraising evidences [12,13], institutional and cultural barriers such as protocols, physician's orders [18,21], patient workload [12,22,23], patient's preference [24] and limited access to research materials [25,26,16,22].

Academic and clinical education setting also influence the attitude and application of EBP in the practice of physiotherapist [27,28,29,30]. However, specific educational infrastructure for EBP in the curriculum is still lacking which led to arbitrary and fragmented teaching of EBP in the classroom and inadequate integration of EBP in the clinical practice [16,31]. Students also experienced lack of role models in EBP application [30] which is also a factor that influences the application of EBP in the clinical practice. On the other hand, high educational attainment such as Masters and Doctorate degree are positively correlated with research skills and production [32]. Studies in United States have shown that Doctorate in Physical Therapy has increased adoption of EBP [6,33], and has enhanced EBP practice [34]. Thus, graduate studies play a role in training and influencing future physical therapists to adopt EBP in their clinical practice.

In the Philippines, similar challenges and barriers affect the usage and implementation process of EBP in the clinical setting. Practitioners' most reported barriers also include deficiencies of time, lack of access to resources, lack of skills and research supporting policies [16,22,35]. Traditionally, Physiotherapists in the Philippines require doctors' referral before proceeding with the treatment which may also hinder application of research evidence practice processes [36]. In the local educational setting, EBP has also been incorporated in the undergraduate and graduate curriculum, however, the study of Gorgon (2013) found out that educators have inadequate competency in teaching EBP [16]. Moreover, in the clinical setting, students identified the lack of support for EBP uptake, lack of information resources in affiliation centers, and lack of EBP content placement in the clinical education program [16] which would definitely affect the EBP practice and application of EBP process. However, no local study has been found yet on the extent of implementation of EBP process among Filipino Physiotherapist.

Researchers, therefore, aim to determine the current extent of implementation of EBP processes among Physical Therapist working in PLM – affiliated institutions. Aside from contributing to local studies, this information would allow the researchers to determine the possible gaps in the current practice of EBP processes expected from Physiotherapist as reflected in Commission on Higher Education's (CHED) Memorandum Order No. 55 Series of 2017's minimum standards or expected outcomes for Research [36]. This would encourage collaboration between academic institution and clinical affiliation on their EBP training of future Physical Therapist. Moreover, this would also facilitate the development of specific EBP training program not only in PLM affiliation centers but also for other physiotherapist who are willing to improve their EBP skills and to better incorporate EBP in their clinical practice.

## Methodology

### *Study design and Sampling*

A descriptive cross-sectional survey was administered to Physical Therapy clinicians practicing in PLM's 16 affiliated institutions. Participants included: (1) Registered physical therapist in the Philippines, (2) who are currently practicing physical therapy in PLM-affiliated institutions, and (3) are officially hired in the institution (regular or temporary status).

A purposive sampling technique was utilized because this paper intended to determine only the extent of EBP practice among licensed physical therapists officially hired in the PLM's clinical affiliated institutions. The study obtained 60% (n=93) responses out of 155 physical therapist population, which is considered as good response rate based on 60% - 70% rate [37].

### *Instrumentation*

Since no existing questionnaire that specifically addresses the objectives of this study was found, researchers developed the questionnaire based from previous EBP studies [10,12,38,39].

The instrument was categorized into 3 sections: (1) Demographic data, (2) Educational background, and (3) Current EBP implementation process. Section 1 (Demographics) determined the ages, gender and year of graduation of the participants. Section 2 determined the highest educational degree obtained by the participants. Section 3 of the questionnaire included the items on the EBP

Processes' Extent of Practice which were obtained and modified from the survey questionnaire of Iles and Davidson [12], Bostrom [39], and Silva [10]. This section aimed to determine the extent of application of skills or tasks for each EBP process. This section was categorized into 5 EBP processes such as a) asking clinical questions, b) searching of evidence literature, c) critical appraisal, d) use and integration of research evidence to one's clinical expertise or practice, and e) evaluation of outcomes [1]. Researches also classified and included the specific EBP skills and subtasks per process that were obtained from Silva and Iles' questionnaire for each processes (refer to tables 1 – 5). Participants were asked to rate their extent of practice for every item in each EBP process following the response format used in Brostrom's study on the extent of performance of EBP tasks [39]. The rating scale follows: 0 = never done, 1 = very low extent, 2 = low extent, 3 = high extent and 4 = very high extent. The following descriptor for each rating was also indicated in the questionnaire for participants to have a better understanding and reflection of their extent of application or practice for every task in the EBP processes.

Very high extent= A score of 4. The activity is ALWAYS observed. (100% of the time)

High extent= A score of 3. The activity is observed OFTEN observed. (70%-90% of the time)

Low extent= A score of 2. The activity is SOMETIMES observed. (50% of the time)

Very low extent= A score of 1. The activity is RARELY observed. (20% or less of the time)

Not totally implemented= A score of 0. The activity is NEVER done completely. (0% of the time)

To ensure its validity, the questionnaire underwent face and content validation by a Physical Therapist expert in evidence-based practice, a Physical Therapist who specialize in Research, a PT educator and PT practitioner who were capable of doing the content validation. Redundant items were removed and slight revisions were done based on the feedbacks obtained. A pilot test was conducted in a non PLM-affiliated institution with 14 respondents who answered the questionnaire. Participants in the pilot study were given 1 hour to answer the questionnaire two times in a 3-weeks interval to compare its internal consistency [37]. Analysis of the results of the pilot study showed that the questionnaire has a good reliability with 0.814 score (acceptable Cronbach alpha value is 0.7 or higher for internal consistency). SPSS version 21 was used in analyzing the data obtained from the pilot testing.

### *Data Collection Procedure*

After reliability and validity testing of the questionnaire, the final version was printed and reproduced. Affiliation centers were followed up regarding the permission to conduct a survey. Consent forms were given a week before the implementation to allow the participants to review the purpose of the study. However, some institutions allowed the researchers to conduct the survey on the same day when consent forms were given. After the participants reviewed the consent form, they immediately accomplished and returned the survey form to the researchers on the same day. In some centers, accomplished questionnaires were obtained after a week. Data were immediately encoded manually in a Microsoft Excel file and was sent to the statistician for computation.

### *Ethical Consideration*

The study was sent and reviewed by the Institutional Review Board of San Juan De Dios Educational Foundation, an accredited Ethical review board Committee within Metro Manila. The research paper was granted an expedited approval for both the research protocol and informed consent. Ethical considerations applicable to the study were also considered and reviewed by the Research Committee of the College of Physical Therapy of Pamantasan ng Lungsod ng Maynila which included informed consent, voluntariness to participate, right to withdraw, risks and benefits, confidentiality and no conflict of interest statement. Before the survey was conducted in the centers, the researchers explained the purpose and benefits of the study before they answered the forms. Confidentiality, voluntary consent, and right to withdraw were also assured both verbally and through the written instruction. Participants were also told that all information obtained from them will only be used for the study and only the survey form number represented them. Participants were also advised to read again the instructions and informed consent before signing and proceeding with survey.

### *Data Analysis*

Data were entered in Microsoft Excel 2010 (Microsoft Corp, Redmond, WA, USA) and descriptive statistical analysis was done using the data software SPSS (version 21; SPSS Inc., Chicago, IL USA). Percentage frequencies and mean ( $\pm$  standard deviation) were obtained to analyze age, gender and educational background of participants. For each subtask in the EBP Processes, the weighted mean score were obtained. The responses in the rating scale for each subtask or skill in the EBP implementation process items were divided into low

extent (1 = very low and 2 = low) versus high extent (3 = high and 4 = very high) before the computing the weighted mean. The average of the weighted mean of the subtasks were also obtained to determine the overall mean for every EBP process. Interpretation of mean results for the current EBP process implementations are as follows: Never= 0, Very low extent=1, Low extent=2, High extent=3, Very high extent=4

## **Results & Discussion**

### *Demographic Profile*

The demographic profile of the 93 PT clinicians working in PLM-affiliated institutions consisted of 34 (36.6%) males and 59 (63.4%) females and with a mean age of 26 years old. Sixty (64.5%) graduated from batch between 2014 – 2018, followed by 18 (19.4%) who graduated between 2009 - 2013 which explains why majority are young PT professionals (below 30 years old). Similar age group (20 – 30 years old) composed majority of participants in the local EBP studies made by Gorgon (2013) and Dizon (2014) as well as in Ramirez Velez's (2015) study in Colombia. Young age group from different cohorts is due to the high turnover rate observed among Physical Therapists who seek employment abroad or shift to a more financially rewarding jobs [19].

### *Educational background of PT Clinicians*

Eighty-nine percent (n=83, 89.2%) of the respondents have Bachelor of Science in Physical Therapy (BSPT) as their highest educational attainment. Four (4.3%) are currently taking MSPT, while 2 (2.2%) completed their MSPT degree. One (1.1%) is still completing DPT program, while 3 (3.2%) attained DPT degree. Most respondents have BSPT as their highest educational attainment. This is consistent with the educational profile of participants in the local study of Gorgon (2012 & 2013), and in the international studies of Ramirez Valdez (2015), and AlJamei (2018). In the Philippines, clinicians do not often find enrollment in postgraduate feasible because of their lack of time and meager financial resources [22] Similarly, the study of Ramirez (2015) shows that not all Columbian PTs have access to professional development program [19]. Even if they see its importance, physical, motivational and organizational barriers hinder them from taking advance courses [19].

### *Extent of Evidence-Based Practice Process implementation*

#### *Asking Clinical Questions*

Table 1 shows that there is a high extent of application of Asking Clinical Questions, with a composite mean of 2.88  $\pm$



0.6959 (high extent). This initial process of asking and formulating question/s is triggered when clinicians see the need for an information that could provide better care for the patient. Respondents from this study implemented at high extent the following specific processes: identifying gaps in knowledge (2.91), converting needed information to answerable questions (3.09), formulating clear answerable questions by defining patient problem, intervention & outcomes (3.18) and drawing up questions in a structured way with all basic components (2.89). These findings are consistent with the scoping review of Condon (2015), stating that gaps in clinical knowledge were frequently acknowledged [13], and formulating specific clinical questions were reported by majority of physiotherapists [40]. However, McEvoy *et al.* (2011) reported a decline in formulating clinical questions as newly qualified physiotherapist transition in their workplace [30]. In the study of Beirwas *et al.* (2015) on the frequency of application of EBP processes, formulating questions was less frequently practiced and were inconsistent with the application of other EBP processes. He surmised that some respondents did not use well formulated clinical questions to guide evidence search [6] which could lead to inappropriate search of best evidences for patient management. Asking question/s enables clinician to understand better patient's condition. It also gives a focused direction in determining appropriate, reliable and valid tests as well as available effective interventions [38]. Thus, forming a good research question is the first step to attain a better clinical evidence based practice [9].

Discussing EBP in the work place is the only item in Table 1 that yielded a low extent implementation (2.34). This is in contrast with Salbach's (2009) report that physiotherapists prefer peers and social networks as sources of information since they can easily be reached and they can provide immediate answers relevant to the question/s [41]. Moreover, working with peers and senior colleagues may lead to the development of tacit knowledge that cannot be gained through literature-based alone [13]. They trust colleagues' advice that are built from their experiences. Furthermore, multiple channels that are open for discussion, persuasions or debate about treatment/ assessment options are necessary to arrive at the best solutions to clinical problems [13]. Thus, communication and discussion of EPB among colleagues may be strengthen to be able to create the culture of EBP practice. However, the challenge to rush and consult colleagues alone may forego the essential steps on formulating questions and on critiquing evidences [6] which may consequently lead to adoption of unproven treatments. It is therefore necessary to go through this first process of EPB to be able to arrive at the best evidence applicable to patients' needs.

#### *Searching for Evidence Literature*

Table 2 summarizes that the searching for evidence literature is practiced at a low extent (Composite Mean: 2.17 SD:  $\pm 0.9716$ ). Specifically, performing database searching (2.17, low extent) online database searching (2.41, low extent), searching PEDro (1.92, low extent), MEDLINE or

**Table 1.** *Asking Clinical Questions*

Step 1 Subtasks	Mean	Standard Deviation	Interpretation <sup>2</sup>
I discuss EBP at my workplace.	2.34	$\pm 1.0984$	Low Extent
I ask my patient about their preference and consider them in decision-making.	2.91	$\pm 0.9630$	High Extent
I tell my patients of their treatment options and involve them in decision-making.	2.81	$\pm 0.9885$	High Extent
I convert information needs into an answerable question.	3.09	$\pm 0.8349$	High Extent
I identify gaps in knowledge.	2.91	$\pm 0.8296$	High Extent
I formulate a clearly answerable question by defining the patient or problem, the intervention and the outcome.	3.18	$\pm 0.7654$	High Extent
I draw up questions in a structured, precise way, with all the basic components necessary.	2.89	$\pm 0.8780$	High Extent
<b>Composite</b>	<b>2.88</b>	<b><math>\pm 0.6959</math></b>	<b>High Extent</b>

1 n=93

2 Legend: Never=0, Very low extent=1, Low extent=2, High extent=3, Very high extent=4

CINAHL database (1.54, low extent), reading published research reports (2.25, low extent), tracking down evidences for formulated questions (2.3, low extent) & searching Cochrane library (1.44, very low extent). PEDro and Cochrane are 2 relevant database which are known to have high quality and pre-appraised evidences & clinical trials. MEDLINE and CINAHL also facilitate literature search [42]. Gorgon (2013) stated in his study that even though physical therapists are aware and are capable of accessing online database, less than 50% were familiar with the common search engine for biomedicine and health [16]. Using of computer and gadgets facilitate EBP searching and accessing online. However, different skills are required to navigate common Biomedical search engines like PEDro, MEDLINE, etc. which may explain why some physical therapists do not use them. McCluskey (2008) and Iles (2006) concluded that low use of these database search was due to respondents' lack of knowledge and skills [12,43]. Tacia (2015) in a qualitative study, stated that there is inadequate access to latest and easily understandable technology and computer systems [25].

Despite of the low extent implementation of database search, respondents have high extent of use of computer and internet during work for EBP implementation. The availability of computer, transportable gadgets, and smart phones made access to online resources possible in the

workplace which Condon (2015) confirms among physical therapists in his study [13]. However, Gilmour *et al.*, (2008) found that searching for evidences became arduous in the workplace due to difficulty accessing data and inadequate time searching for health information available online [44]. Therefore, low extent of implementation of database search is caused not only by lack of skills but also because of other barriers such as lack of time and lack of available technology in the workplace [25].

### Critical Appraisal

The extent of practice of critical appraisal (Table 3) is also low ( $2.25 \pm 0.8842$ ) based from this study. Critically appraising literature's quality of methodology (2.11) was least implemented among the items followed by the following: use of standard criteria to critically appraise literature (2.13, low extent), determine the type of design suitable to answer the questions of a scientific paper (2.17, low extent), critically analyze evidence against set standard (2.19, low extent), critically assess a scientific paper (2.21, low extent), determine the validity of the material (2.36, low extent) which is consistent with Beirwas (2015) findings on the least frequent implementation of critical appraisal [6]. Low extent of implementation could be a result of Filipino practitioner's lack of confidence in critical appraisal skills [22] which is also

**Table 2.** Searching for Evidence Literature

Step 2 Subtasks	Mean	Standard Deviation	Interpretation <sup>2</sup>
I perform database searches.	2.17	±1.1574	Low Extent
I search online databases.	2.41	±1.0767	Low Extent
I use resources such as computer and internet during work for EBP implementation.	2.55	±1.0781	High Extent
I use the PEDro database.	1.92	±1.3452	Low Extent
I search the Cochrane library.	1.44	±1.2551	Very Low Extent
I access articles and reports.	2.45	±1.1182	Low Extent
I search MEDLINE or CINAHL databases.	1.54	±1.3148	Low Extent
I read published research reports.	2.25	±1.1412	Low Extent
I track down relevant evidence once I have formulated the question.	2.30	±1.1305	Low Extent
I resolve my doubts about practice by posing questions that can be solved through finding up-to-date scientific documentation.	2.26	±1.1339	Low Extent
I determine the practical relevance and the impact of the results found in the treatment of my patients/customers.	2.54	±1.1279	High Extent
<b>Composite</b>	<b>2.17</b>	<b>±0.9716</b>	<b>Low Extent</b>

1 n=93

2 Legend: Never=0, Very low extent=1, Low extent=2, High extent=3, Very high extent=4

consistent with physical therapists' perceived low critical appraisal skills [17,12]. However, the scoping review of Condon (2015) reveals that over 50% of respondents reported confidence in appraising literature but high proportion of them also had difficulty doing statistical analysis and had poor research skills which is inconsistent with their reported perceived ability and their actual practice [13]. Igo (2000), on the other hand, cited that physical therapists have an idea about the proper way of criticizing a research evidence, however, they find it difficult and time-consuming that's why they opt to skip this part [45].

Though most of the subtasks in the critical appraisal process are implemented at a low extent, determining on the usefulness or clinical applicability of the material is implemented at a high extent by most respondents (2.61). Beirwas (2015) surmised that the inconsistencies in the frequency of use of the critical appraisal in EBP process is due to respondents' reliance on working knowledge and trusted sources which makes them immediately conclude on the usefulness of the material instead of going through the rigor of critically appraising a literature [6]. Moreover, majority still use their own judgement or colleagues' opinion in decision making [13,17] which is not evidenced-based and not accurate. Similar to what Beirwas (2015) commented on formulating questions, skipping these initial and essential processes would lead to inappropriate search for evidences which may lead to patient mismanagement [6]. Critical appraisal is an important step in searching valid, reliable and appropriate evidence based treatment specific for the patient. Admittedly, it requires practice, time, [19] guidance, and good clinical judgment in ones field to

develop the skill and confidence in doing critical appraisal. Thus, upskilling is highly recommended considering that most literatures admit clinicians' lack of confidence and skills in implementing it.

#### *Use or Integration of Research*

Table 4 reveals that the integration of research in clinical practice is implemented at a low extent (2.46  $\pm$ 0.9376). Specifically, respondents implemented at a low extent the following: 1) use of gathered data in response to the circumstance in clinical practice (2.35), 2) applying research data in individual cases (2.47), and 3) use of available research evidence in modifying traditional practice (2.49).

Integration of relevant evidence in patient management is combined with clinical expertise, and considers preferences, values and circumstances of individual patient [6]. It does not end with application of research findings, but it entails tailoring a client-centered approach on discerning the best evidence for one's patient [9]. To be able to arrive and use the right or best evidence for patient management, physical therapists should do the initial steps or processes correctly such as formulating the question and critically appraising the evidences. These steps are considered essential in focusing the search for evidence and determining its credibility and relevance to be able to locate the best evidence [6]. Thus, integrating research in patient, requires sufficient EBP knowledge and research skills. However, clinicians' lack of research skill hinders them from incorporating EBP in their practice [17,19,12,35] which explains the low extent of implementation of searching evidences, critical appraisal and

**Table 3. Critical Appraisal**

Step 3 Subtasks	Mean	Standard Deviation	Interpretation <sup>2</sup>
I critically assess a scientific paper I found.	2.21	$\pm$ 1.0199	Low Extent
I critically analyse evidence against set standards.	2.19	$\pm$ 0.9919	Low Extent
I determine how valid (close to the truth) the material is.	2.36	$\pm$ 1.0507	Low Extent
I determine how useful (clinically applicable) the material is.	2.61	$\pm$ 1.0219	High Extent
I critically appraise any literature discovered to determine the methodological quality.	2.10	$\pm$ 1.0050	Low Extent
I use standardized criteria to critically appraise scientific literature.	2.13	$\pm$ 1.0894	Low Extent
I determine the types of designs of scientific studies that are suitable to answer the different types of questions posted.	2.17	$\pm$ 1.0068	Low Extent
<b>Composite</b>	2.25	$\pm$ 0.8842	Low Extent

1 n=93

2 Legend: Never=0, Very low extent=1, Low extent=2, High extent=3, Very high extent=4

integration of research in clinical practice. Ramirez Velez (2015), found that “lack of research skills” is the main obstacle to using EBP and he also found an association between educational attainment with research skills among PTs in Columbia [19]. Graduates of bachelor course was associated with low level of skills which majority (89.2%) of the respondents in this study are.

Another most common barrier in integrating EBP is lack of time [12,13,25,19,22]. Tacia's (2015) qualitative study highlighted one response of participant saying that “the process of research approval of the doctors and everyone on board is time consuming [25].” Moreover, daily patient load or overload [17] plus, the home-based services that physical therapists need to provide after work, limit them from doing research [22]. Lack of resources to support the use of research evidence is another impediment that prevents clinicians from doing EBP. Different authors suggest that organizational support is essential to have time and resources necessary to undertake EBP process [13].

Despite of the low extent of implementation, Table 4, item 2 shows that respondents implement to a high extent application of research evidence based in their competencies or expertise (2.52). Gorgon (2012) noted that majority of their participants integrated research evidence only in selecting treatments, however across all practice dimension, textbooks, own experience and expert opinion were the most frequent source of evidence [22]. This skips the initial process of EBP and prevents application and practice of critical judgement of gathered evidences. Both Iles (2006) and Bierwas (2015) studies showed that majority of the clinicians agree to integrate evidence in their practice [6,12]. However, respondents had some inconsistencies in the application of the initial process of EBP which suggest that they may not be discriminating between valid and invalid evidence.

### Evaluation of Outcome

Table 5 shows that extent of implementation of evaluating outcomes is also low (composite mean of 2.14 ±0.7940). The least implemented is publishing the result of their evidence based practice in scientific journals (1.03, very low extent). This is followed by (from least extent to high extent): adjustment of research steps if it's not aligned with the result (1.86, low extent), listing of information that occurred from the intervention (1.98, low extent), formally discuss research evidence with colleagues (2.08), appraising results from research evidences before applying to clinical practice (2.09, low extent), use objective results from research to relay better information to patients (2.26, low extent), informally discuss research (2.35, low extent), use of result from assessment measure supported by scientific evidence (2.43, low extent), consider conflict of interest (2.45, low extent) and use of evidence based clinical practice guideline (2.46, low extent).

Evaluation of outcomes involves the use of self-evaluation to determine if clinical practice and patient outcomes have improved as a direct result of having integrated evidence into clinical practice. It includes reflection of the efficiency and effectivity of following EBP steps and the impact of the intervention to the patient [9]. Assessment of the impact of EBP process on patient outcome in the clinical setting are encouraged to be written for peer evaluation before publication. Publishing these work ensures dissemination of research work that may contribute new and applicable knowledge and practice in the clinical setting. Publications that are made available in portals provide other professionals access to evidences that promote and facilitate EBP utilization. Moreover, if these are assessed and are standardized it will facilitate searching of evidences similar to those found in PEDro, Cochane, PubMed, CINAHL, etc. However, publication of researches faces similar challenges that EBP implementation confronts. Level of research skills

**Table 4.** Use or Integration of Research

Step 4 Subtasks	Mean	Standard Deviation	Interpretation <sup>2</sup>
I apply data from research evidences in individual cases.	2.47	±1.0064	Low Extent
I apply research evidence/s based on my competencies.	2.52	±1.0278	High Extent
I use the current available research evidence to modify traditional practice.	2.49	±1.0281	Low Extent
I use data gathered from structured questions to respond to circumstances in clinical practice.	2.35	±1.0389	Low Extent
<b>Composite</b>	2.46	±0.9376	Low Extent

1 n=93

2 Legend: Never=0, Very low extent=1, Low extent=2, High extent=3, Very high extent=4



[46], highest educational attainment and motivations [32] are positively correlated with research production and publication. Though research skills & motivation are not established in this paper, most of the respondents' educational attainment are bachelor's degree which is associated with low implementation or incorporation of EBP in the clinical practice [6,12]. Moreover, lack of time, support and money were also the main constraints for carrying out research [32,46] which consequently limit publication.

Clinical practice guidelines (CPG) are statements that include recommendations intended to optimize patient care. They are systematic review of evidences and assessment of the benefits and harms of alternative care options. Clinical practice guideline may facilitate the work of clinician through its concise instruction on screening or diagnostic test to undergo and how to provide clinical or intervention services and other details of clinical practice [47]. However, respondents from this study show a low extent of implementation or use of clinical practice guidelines. According to the scoping review of Codon 2015, some Physical Therapists lack of agreement with the guidelines in general, had doubt on the credibility of guidelines and had expressed their lack of time to apply CPG and interpret the outcome measure results [13]. Moreover, the studies he mentioned found only a minor improvement in patient care

after adhering to the guideline which supports the low extent of implementation of clinical practice guidelines[13].

Assessment involves looking back on how one implemented the process of asking question, acquiring, appraising and applying evidences in one's clinical expertise [6]. Thus, EBP does not end in assessing the outcome, it encourages assessment of one's own performance in EBP process. The implementation of discussing EBP, identifying gaps (2.5, high extent), adjusting steps (1.86 low extent), listing changes that occurred during intervention (1.9, low extent), appraising results from evidences (2.09, low extent), using objective result from research for patient (2.26, low extent), using scientifically sound assessment measure (2.4, low extent) and considering conflict of interest all involve a conscious application and reflection of the process EBP (2.4, low extent). Since searching, critical appraisal and integration of EBP yielded a low extent, it is consistent with this last process. In the national study on teaching evidence based practice in the Philippines, Gorgon (2013), found that assessment in EBP is less frequently integrated in teaching, which may reflect the low implementation of assessment among practitioners [16].

The results on the extent of implementation of EBP process in the clinical setting is an important information on

**Table 5.** *Evaluation of Outcome*

Step 5 Subtasks	Mean	Standard Deviation	Interpretation <sup>2</sup>
I formally discussed research evidences with my colleagues.	2.08	±1.0285	Low Extent
I informally discussed research evidences with my colleagues.	2.35	±1.0799	Low Extent
I use evidence-based clinical practice guideline in my practice.	2.46	±1.0380	Low Extent
I identify gaps in what I know that I need to address.	2.55	±0.9941	High Extent
I publish the results of my practice in scientific journals.	1.03	±1.2199	Very Low Extent
I adjust the steps of the research evidence if it's not in line to the expected result.	1.86	±1.2032	Low Extent
I list information such as changes that occurred from the intervention applied.	1.98	±1.1373	Low Extent
I firmly appraise results from research evidences before putting them into clinical practice.	2.09	±1.0639	Low Extent
I use objective results from research evidences to relay better information to patients.	2.26	±1.0748	Low Extent
I use results from the assessment measures that are supported by scientific evidence.	2.43	±1.0257	Low Extent
I consider conflict of interests when assessing the results from evidence-based researches.	2.45	±0.9385	Low Extent
<b>Composite</b>	<b>2.14</b>	<b>±0.7940</b>	<b>Low Extent</b>

1 n=93

2 Legend: Never=0, Very low extent=1, Low extent=2, High extent=3, Very high extent=4

the status of EBP practice in the Philippines setting. The low extent of implementation is a reflection of a complex personal, educational, political and organizational condition in the country which are also the common challenges shared by other countries at varying degree. The study of Gorgon (2012) on the Research Evidence in a Developing country last 2012 showed the different conditions and barriers that led to a low research uptake among Physical Therapists. The need to develop effective capacity building programs for clinicians have been recommended but may not have been consistently implemented and supported. Though, there are many studies on effectivity of training in the practice of EBP, the conditions and barriers in the 2012 study of Gorgon still continue to persist which lead to a consistently low implementation of EBP in the clinical practice. Solutions to incorporate EBP in the curriculum has been observed in order to develop research competencies [16]. However, the fragmented and unstructured incorporation of teaching of EBP both in the classroom and in clinical placement led to insufficient clinical orientation and application. Thus, there's still a need to select effective strategies that would enable the attainment of minimum EBP competencies, standards and outcomes for entry level professionals. The latest CHED Memorandum Order No. 55, series of 2017 has indicated specific performance indicators and minimum contents based form World Confederation on Physical Therapy (WCPT) related to research skills. However, this should be tailored to the practice of Filipino Physical Therapist in the clinical setting. Continues collaboration between educational institutions and clinical affiliation should also take place in order support and bridge educational gaps in EBP. Moreover, clinicians have a significant role in modelling EBP application and practice. They are in the position to influence, model and train PT students during clinical education. However, if low implementation of EBP in the clinical setting continues among practitioners, EBP culture may not improve.

The objective of this study is limited to identifying the current extent of EBP practice of physiotherapist affiliated with the College of Physical Therapy of Pamantasan ng Lungsod ng Maynila. It is recommended to have a greater number of clinical affiliation centers or a national study may be considered to be able to generalize the results of this study. Moreover, a correlation of demographics, educational background and professional background with the current extent of EPB implementation may be done to be able to present association of these variables in the Philippine setting. This type of research has been widely done in other countries. A greater scope of educational background on EBP may also be obtained through an objective assessment of knowledge and

skills triangulated by a qualitative observational study which could support and provide a better explanation of the current extent of implementation of EBP in the clinical setting than just a self-evaluated survey. Unique institutional barriers may also be studied and considered to be able to find feasible solutions that would address them.

## Conclusion

Implementation of EBP Process has been incorporated in the local university's affiliation center however, the extent of application varies. Step one, asking clinical questions is implemented at a high extent (mean=2.8838), while the rest of the processes such as search for evidences (mean=2.1720), critical appraisal (mean=2.2581), integration of research evidence in one's clinical expertise (mean=2.4624) and evaluation of outcomes (mean=2.1447) are implemented at a low extent. Greater effort in addressing educational/training needs and identifying institutional barriers are similar recommendations from other studies to be able to fully implement EBP practice.

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