

Knowledge, Attitude and Practice towards Evidence Based Practice in Post Graduate Physiotherapy Students

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ABSTRACT

Background: Evidence Based Practice (EBP) includes integration of best available research, clinical expertise, and patient values and circumstances related to patient and client management, practice management. EBP approach can lead to enhanced quality of whole health care and is important to professional development of physiotherapists. The purpose of the study was to assess the level of knowledge, attitude and practice of Evidence-Based Practice among Physiotherapy students.

Methodology: One hundred and thirty-two Post-Graduate physiotherapy students of Gujarat University were included using convenience sampling. Participants were given the Evidence-Based Practice Profile (EBP2) to complete. The Evidence-Based Practice Profile (EBP2) takes 10-12 minutes to complete and consists of a total of 58 items, each using a 5-point Likert scale and other characteristics. The questionnaire includes five domains. Descriptive Analysis was done in Microsoft excel.

Results: The EBP2 was completed by 100 subjects (Student response rate:-75.75%). 92 were females and 8 were males with mean age 23.27 ± 1.15 years. Mean total domain score (maximum) in Relevance was 57.57 ± 7.38 (70), Terminology was 59.74 ± 10.6 (85), Confidence was 37.29 ± 9.64 (55), Sympathy was 19.3 ± 3.89 (35), Practice was 26.38 ± 7.95 (45).

Conclusion: There was a fair knowledge (Relevance, Terminology) of EBP, fairly positive attitude (Sympathy, Confidence) and fair practice (Practice) of EBP among post graduate students of Gujarat University.

Implication: There is a need to educate students at undergraduate level to improve practice of EBP at post graduate (professional) level and progress the profession's approach to developing, using and promoting research and its contribution to generating new evidence, knowledge transfer and service improvement.

Keywords: Evidence Based Practice; Physiotherapy; Post Graduate Students

INTRODUCTION

Evidence-based practice (EBP), which originates from evidence-based medicine, has been described as 'the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. Evidence Based Practice (EBP) includes integration of best available research, clinical expertise, and patient values and

circumstances related to patient and client management, practice management, and health policy decision-making.^[1]

Sackett et al originally described the fundamental principles and the 5 steps of Evidence-Based Practice follows:

1. **Ask:** Formulating a research question,
2. **Acquire:** Knowledge related to search engines/ databases, Literature search,

3. **Appraise:** Inclusion of Levels/hierarchy of evidence, Types of study designs, Types of validity & reliability, Tools of critical appraisal, Inclusion of Statistical methods,
4. **Apply:** Application of evidence in clinical decision making,
5. **Assess:** Ability to self reflect on how well the previous four steps were performed.^[2]

EBP approach can lead to enhanced quality of whole health care. That is important to professional development of physiotherapists. In the recent times, the Physiotherapy profession has been undergoing a period of change as a result of pressure from different health professional groups. In order to meet these challenges Physiotherapists (PTs) have been encouraged to prove the effectiveness of their interventions through scientific evidence known as evidence based Practice.^[3,4] By incorporating Evidence based practice in bachelors' curriculum, it will help to implement EBP at their Post-graduate or clinical level for clinical-decision making.

Because of the publication of the Sicily statement,^[1] there has been greater attention paid to EBP training in entry level education (Bachelor degrees or equivalent). Glasziou recommended that, EBP training should be introduced early, and embedded and applied throughout entry-level training.^[5] In theory, the training for EBP should 'future-proof' graduates with the life-long learning skills required for making evidence-based health care decisions.^[1] The World Confederation for Physical Therapy (WCPT) believes that, Physical therapists have a responsibility to ensure that the management of patients/clients, carers and communities is based on the best available evidence. They also have a responsibility not to use techniques and technologies that have been shown to be ineffective or unsafe.^[6] EBP is still not a part of the curriculum in many universities, but is part of few universities of Gujarat in Undergraduate and postgraduate Courses.

Studies in India and especially in Gujarat are few.

Dawes et al. suggest that learning has three components; knowledge, attitudes and skill, and out of these, the development of attitudes is the most difficult and even problematic as attitudes are "caught, not taught" at the point of patient contact where students learn to incorporate theory into practical skills for patient care.^[1] Evidence-Based Practice Profile (EBP2) questionnaire, a self-reported questionnaire that examines self-perceived EBP knowledge, attitude and practice was used. The questionnaire has demonstrated very good reliability. The validity findings show promise in the application of the questionnaire for assessing and monitoring changes in the characteristics associated with an EBP profile at an individual and undergraduate curricula level and potentially beyond, when graduates move into the workforce.^[7]

The purpose of the study was to assess the level of knowledge, attitude and practice of Evidence-Based Practice and correlate knowledge, attitude and practice among Post Graduate Physiotherapy students.

METHOD

An Observational study was conducted in which 132 Post Graduate students of First and Second year of physiotherapy colleges of Gujarat University were included using convenience sampling. Students unwilling to participate were excluded. Permission to conduct the study was obtained from the head of the institute. Participants were explained the study and given the questionnaire to fill out. One hundred students completed the questionnaire.

The Evidence-Based Practice Profile Questionnaire (EBP2)^[7] was used in the study after taking the permission from the author. Evidence-Based Practice Profile (EBP2) is a self-reported questionnaire that examines self-perceived EBP knowledge, attitude and practice. The questionnaire has

demonstrated very good reliability. The validity findings show promise in the application of the questionnaire for assessing and monitoring changes in the characteristics associated with an EBP profile at an individual and undergraduate curricula level and potentially beyond, when graduates move into the workforce.^[7] The EBP2 had been previously evaluated for reliability and validity (ICCs 0.77-0.94, convergent validity $r = 0.52-0.80$, discriminative validity ANOVA $p < 0.001$ to 0.004).^[7]

The questionnaire required 10-12 minutes to complete. The questionnaire included 74 items all of which used a 5-point Likert scale, with a further few items which address demographic characteristics

and prior exposure to EBP training. There are five domains of questionnaire. The first 58 items related to one of five domains of EBP (Relevance, Terminology, Confidence, Practice, and Sympathy). Definition of these domains and item numbers are given in table 1. There were 16 additional non-domain items that described environmental and personal characteristics that might act as barriers or facilitators to EBP. Scoring of individual domain item scores were aggregated to give a domain score (5-point Likert scale, minimum score of 1 and a maximum score of 5 per item). For scoring, sympathy domain it needs to have Likert score reversed. Space was provided in the questionnaire for the addition of comments.

Table 1: Description of Domains and its item number of Evidence Based Practice Profile (EBP2)

EBP2 Domain	Item Description	Item Numbers	Likert scale label (1-5) Lowest – Highest
Relevance	Refers to the value, emphasis or importance placed on EBP	1-14	Not at all true – Very true Strongly disagree – Strongly agree
Terminology	Refers to an understanding of common research and statistical terms	22-38	Never heard the term – Understand and could explain to others
Confidence	Refers to a perception of ability with EBP skills	48-58	Not at all confident – Very confident
Practice	Refers to the use of EBP in clinical situations	39-47	Never – Daily
Sympathy*	Refers to the compatibility of EBP with professional work	15-21	Strongly disagree – Strongly agree

*For scoring, items 15-21 need to have Likert score reversed: 1-5, 2-4, 3-3, 4-2, 5-1

Knowledge includes Relevance and Terminology, Altitude includes Sympathy, Confidence and Practice.

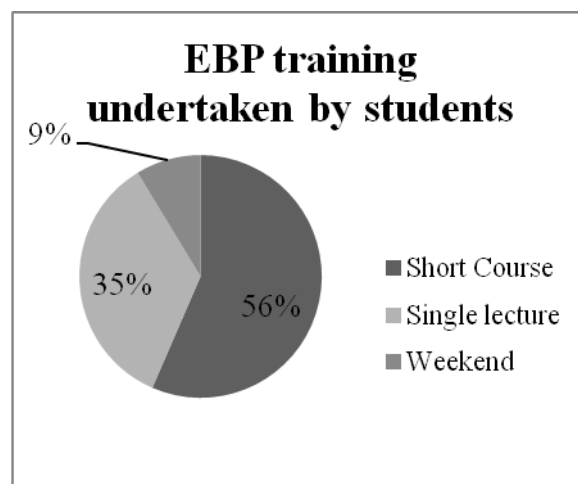
Descriptive Analysis was done in Microsoft excel. Higher scores indicate better awareness. Spearman correlation was used to correlate between domains.

RESULTS

The EBP2 was completed by 100 subjects. Student response rate was 75.75% of which 92 were females and 8 were males. Year of passing graduation ranged between 2014-2018. Demographic data is shown in Table 2.

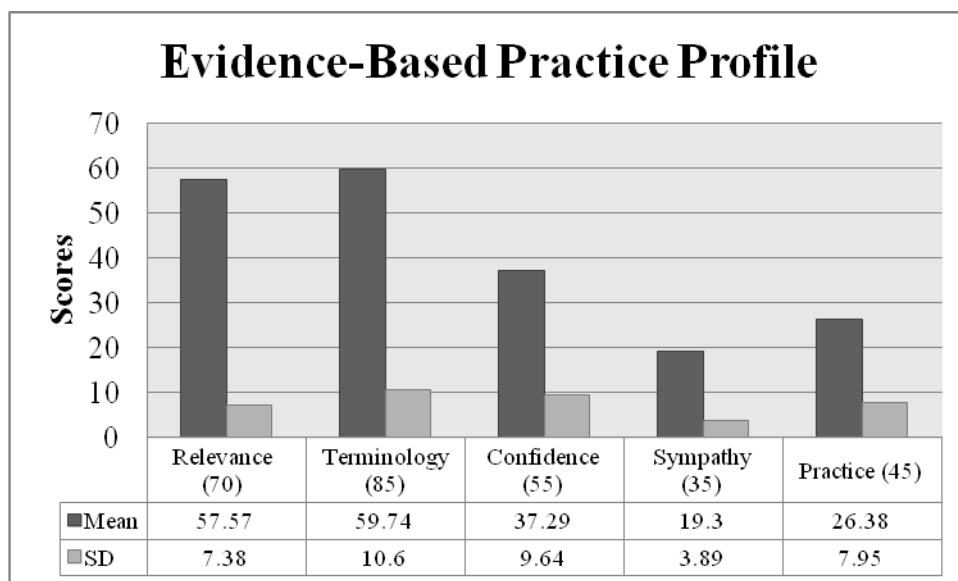
Table 1: Demographic data of students	
Gender	Mean ± SD
Females	92
Males	8
Total	100
Age (in years)	23.27 ± 1.15
Education level	
1 st year	50
2 nd year	50

23% of the students reported that they had undertaken EBP training. Courses included in form of short course of 10-20 hours, a single lecture of 1-3 hours and weekend course of 3-10 hours which is shown in the Graph 1.

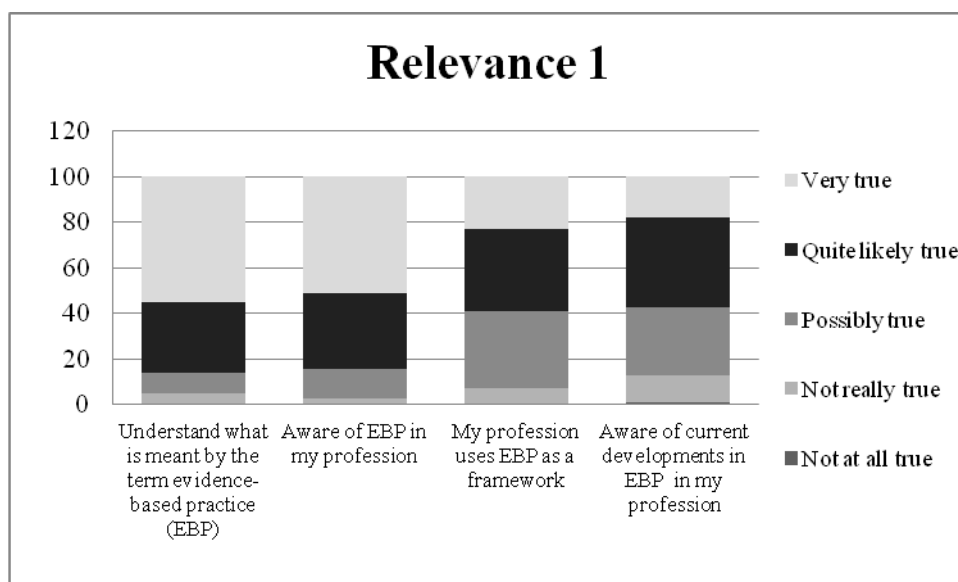


Graph 1: EBP training undertaken by students

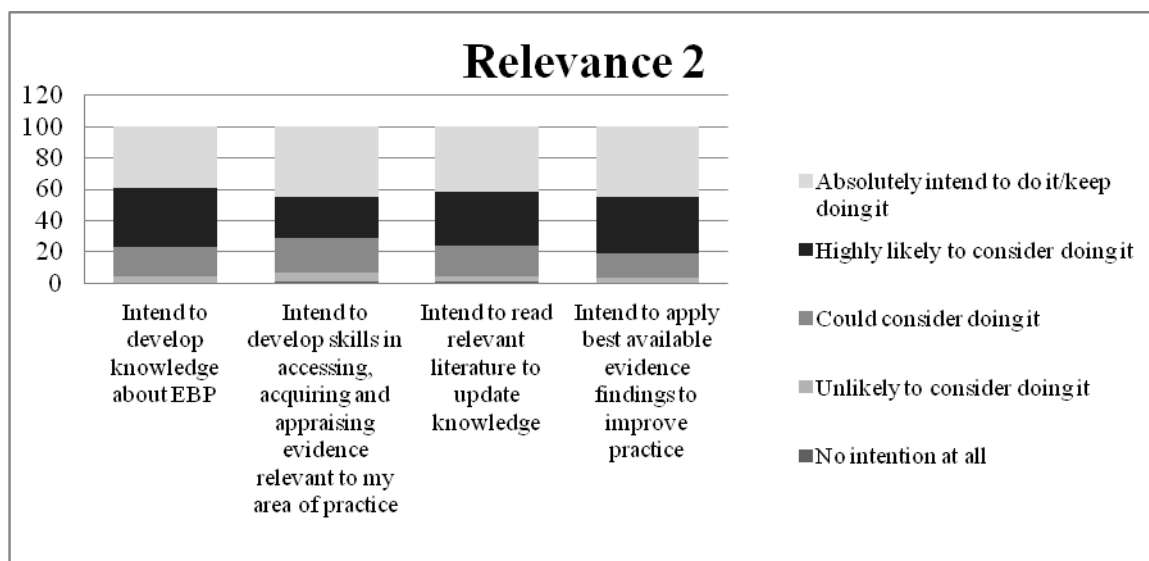
Each total domain score with Mean ± SD (Highest score) is shown in Graph 2.



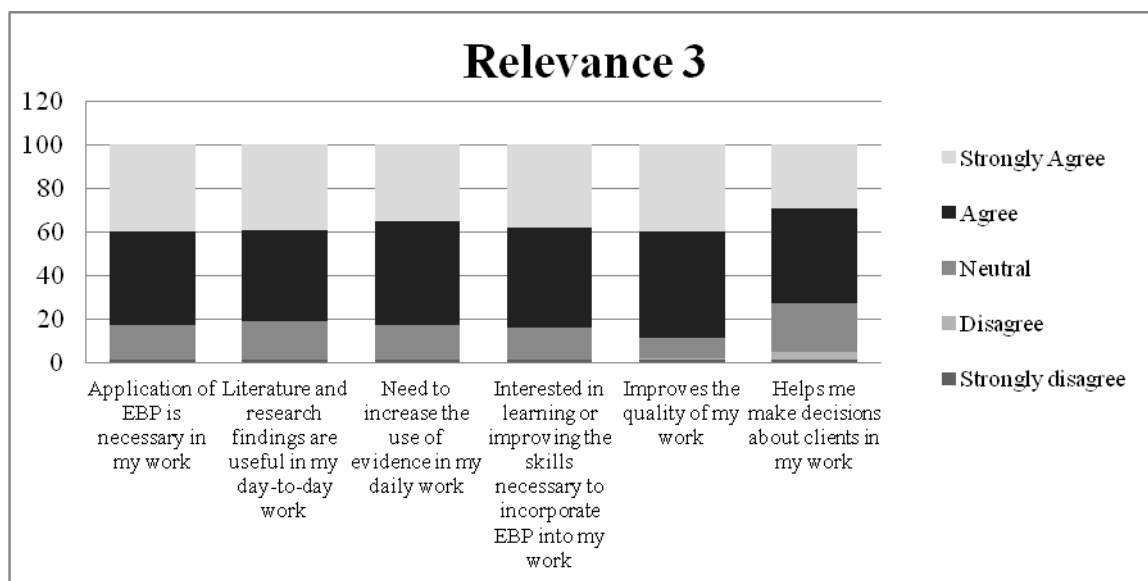
Graph 2: Mean ± SD score of each domain of EBP2



Graph 3A: Scoring of responses related to Relevance domain score



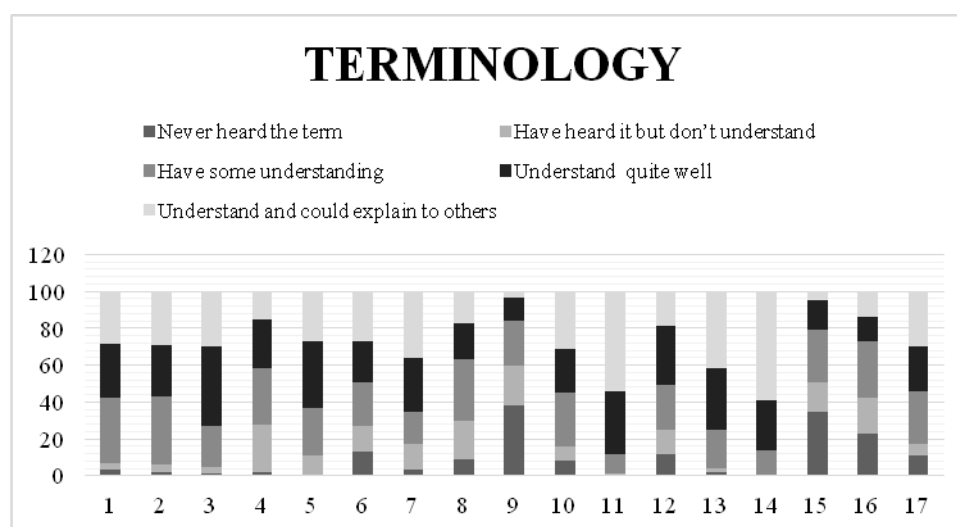
Graph 3B: Scoring of responses related to Relevance domain score



Graph 3C: Scoring of responses related to Relevance domain score

Graph 3A, 3B and 3C shows the Scoring of responses related to Relevance domain of 1st and 2nd year PG students.

Graph 4 shows Understanding of research terminologies, and percentages students who responded never heard and understand terms completely.



Graph 4: Scoring of responses related to Terminology domain Score (see footnote a)

Footnote a: Terminology

1	Relative risk
2	Absolute risk
3	Systematic review
4	Odds ratio
5	Meta analysis
6	Number needed to treat
7	Confidence interval
8	Publication bias
9	Forest plot
10	Intention to treat
11	Statistical significance
12	Minimum clinically worthwhile effect
13	Clinical importance
14	Randomised controlled trial (RCT)
15	Dichotomous outcomes
16	Continuous outcomes
17	Treatment effect size

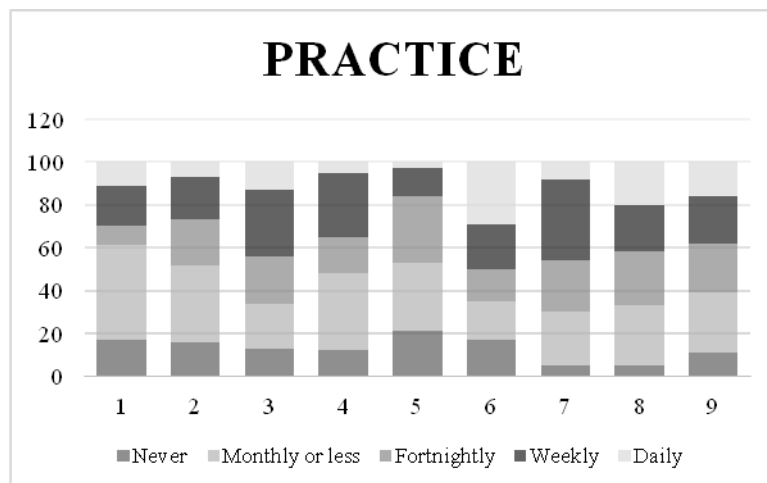
Graph 5 shows level of confidence in terms of not at all confident and very confident.



Graph 5: Scoring of responses related to Confidence Domain Score(see footnote b)
Footnote b: Confidence

1	Research Skills
2	Computer skills
3	Ability to identify gaps in your knowledge
4	Ability to convert your information needs into clearly answerable questions
5	Awareness of major information types and sources
6	Ability to search an electronic database
7	Ability to access evidence (get copies of articles or reports)
8	Ability to critically analyse evidence against set standards ie quality scoring
9	Ability to determine how valid (close to the truth) the material is
10	Ability to determine how useful (clinically applicable) the material is
11	Ability to apply information to individual cases (ie integrate research evidence with personal preferences, values, concerns, expectations)

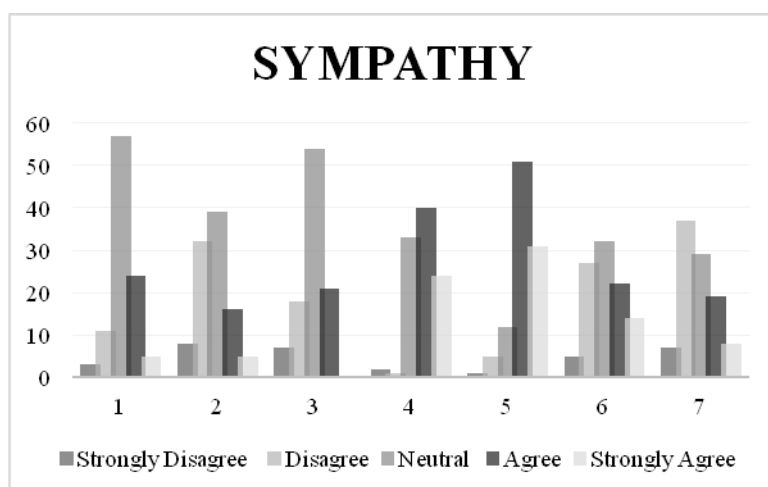
Practice domain refers to the use of EBP in clinical situations. Graph 6 shows percentage score of practice domain of 1st and second year post graduate students.



Graph 6: Scoring of responses related to Practice Domain Score (see footnote c)
Footnote c: Practice

1	Formulated a clearly answerable question that defines the client or problem, the intervention and outcome(s) of interest
2	Tracked down the relevant evidence once you have formulated the question
3	Searched an electronic database
4	Critically appraised any literature you have discovered to determine the methodological quality
5	Integrated research evidence with your expertise
6	Considered your clients' preferences when making clinical/professional decisions
7	Read published research reports
8	Informally shared and discussed literature/research findings with others in your workplace
9	Formally shared and discussed literature/research findings with others in your department/practice (eg journal club, in-service presentation)

Graph 7 shows sympathy domain scores in terms of strongly disagree and strongly agree.

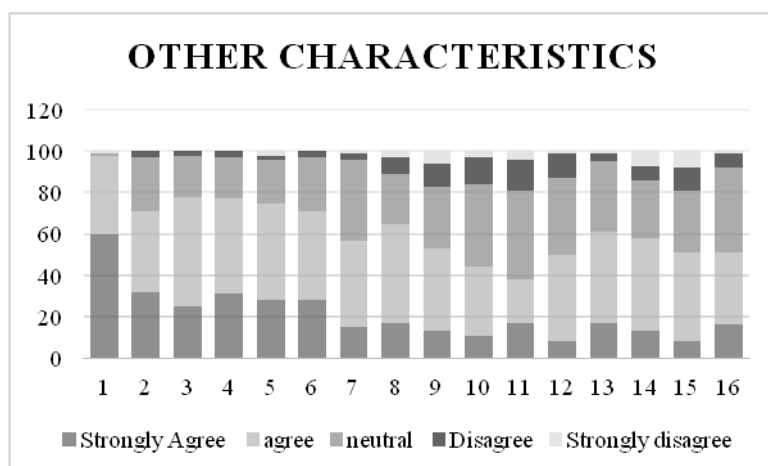


Graph 7: Scoring of responses related to Sympathy Domain Score (see footnote d)

Footnote d: Sympathy

1	EBP does not take into account the limitations of my day-to-day work
2	There isn't much point in doing EBP because there is a lack of strong evidence to support most of the work I do
3	EBP does not take into account my clients' preferences
4	In making decisions about my professional work, I value clinical/field experience more than scientific studies
5	Workplace experience is the most reliable way to know what really works
6	Critical appraisal of the literature and its relevance to the client is not very practical in the real world of my profession
7	Seeking relevant evidence from scientific studies is not very practical in the real world

Other 16 non-domain items which describe environmental and personal characteristics were analysed descriptively which is shown in Graph 8.



Graph 8: Non-Domain Environmental and Personal characteristics (see footnote e)

Footnote e: Other Characteristics

1	I want to learn new information
2	I critically evaluate new ideas
3	I have good management skill
4	I solve problems using a plan
5	I Enjoy studying
6	In my organisation, leaders continually look for opportunities to learn
7	I make time to read research
8	Insufficient time is one of the greatest barriers to the use of EBP in my clinical/professional practice
9	My workload is too great for me to keep up to date with all the new evidence
10	The cost of information resources limits my use of EBP in my clinical/professional practice
11	Easy access to computers dictates whether or not I practise EBP
12	The resources available to me are adequate to undertake EBP
13	Collective support amongst my colleagues is one of the greatest facilitators to my use of EBP in clinical/professional practice
14	Support from management is one of the greatest facilitators to my use of EBP in clinical/professional practice
15	Senior management/my employer requires me to use EBP
16	I've just had a gutful of EBP

The result of the study shows fair knowledge i.e., in the domain of relevance and terminology, fairly positive attitude i.e., in domain of sympathy and confidence and fair practice i.e., in domain of practice of EBP among Post Graduate students of Gujarat University.

Spearman's correlation was used to find correlation between domains. Correlation values are shown in table 3.

Table 3: Spearman's correlation value (r_s) between EBP domains of Relevance, Terminology, Confidence, Sympathy, Practice		
Correlation	r_s -value	p value
Relevance -		
Terminology	0.345*	0.001, <0.01
Confidence	0.441*	0.001, <0.01
Sympathy	0.047	0.644
Practice	0.223*	0.026, < 0.05
Terminology -		
Confidence	0.477*	0.001
Sympathy	-0.093	0.357
Practice	0.337*	0.001
Confidence -		
Sympathy	0.082	0.419
Practice	0.591*	0.001
Sympathy - Practice	0.099	0.327

DISCUSSION

The result of the study shows fair knowledge i.e., in the domain of relevance and terminology, fairly positive attitude i.e., in domain of sympathy and confidence and fair practice of EBP among post graduate students of Gujarat University. In the present study 23% of the students reported they had undertaken EBP training. And out of which 56% of students taken training in the form of short course of 10-20 hours, 35% Single lecture 1-3 hours, 9% of weekend course of 3-10 hours.

71-83 % of students reported 'highly intend to' or 'absolutely intend to' develop knowledge, skills in accessing, acquiring and appraising evidence relevant to area of practice and to read relevant literature to update knowledge and to apply best available evidence findings to improve practice EBP. In present study, 83% of students 'agree' or 'strongly agree' need to increase the use of evidence, 89% of students were interested in learning and improving the skills necessary to incorporate EBP in their work and 73%

reported EBP improves their quality of work. Alshehri, M. A., et al also showed in their study Physiotherapists' awareness and knowledge towards EBP implementation were relatively low, indicating an evident gap in terms of their understanding and application of EBP in Saudi Arabia.^[8]

Present study shows Spearman's correlation between Relevance and Terminology and Confidence was moderate positive correlation ($r_s = 0.345^*$, $r_s = 0.441^*$ $p = 0.001$, <0.01 respectively), with Sympathy weak positive correlation ($r_s = 0.047$, $p = 0.644$), and with Practice was weak positive correlation ($r_s = 0.223^*$, $p = 0.026$, < 0.05). Spearman's correlation coefficient between Terminology and Confidence and practice was moderate positive correlation ($r_s = 0.447$, $r_s = 0.337$ $p < 0.001$), Sympathy negative weak ($r_s = -0.093$, $p = 0.357$). There was a positive significant correlation between relevance and terminology with confidence ($p < 0.01$).

The present study shows, fair positive attitude with fair knowledge of EBP. The participants were asked for "Do they understand EBP?" and "Do they understand by Relative Risk?" responding Strongly Agree or Strongly Disagree. However, they were not asked to define "What is EBP?" Or "What is Relative Risk?" Manjula R, et al showed in their study on medical students that most of the participants hold positive attitudes toward EBP but lack sufficient knowledge and skills for implementation.^[9] In present study, we found fair Knowledge of EBP but we could not assess the knowledge (Terminology, Relevance) descriptively. Similar study by Shaikh, A. A., et al on Physiotherapy students^[10], showed there was poor to fair knowledge of Evidence Based Practice.

Alshehri, M. A., et al also showed in their study a positive attitude towards the use of EBP, with most participants responding 'agree' or 'strongly agree' (81–95%) with regards to the importance of research in practice. Present study found positive significant correlation between

relevance and terminology (knowledge) with confidence (Attitude) ($p < 0.01$). Similar result by Alshehri, M. A., et al in their study showed significant association between participants' awareness score and education level ($P < 0.001$).^[10]

In present study, practice of Routine access to electronic database and reading a published research report daily was found to be 13% and 8% which is similar to the results of Manjula R et al showed 8.2% participants had daily routine access to database.^[9] In the present study fair positive result in attitude to practice EBP domain but 48% agreed as lack of time as barrier to practice EBP. Similar study by Shaikh, A. A., et al on Physiotherapy students showed¹⁰ positive attitude to Practice EBP but, they are unable to practice EBP in day to day life reported due to lack of time (41.8%) and lack of communication skills.^[6,9,10]

Limitations

Only Gujarat university students were included and other characteristics of the students and related questions were not analysed.

CONCLUSION

The study shows fair knowledge (Relevance, Terminology) of EBP, fairly positive attitude (Sympathy, Confidence), fair practice (Practice) of EBP among post graduate students of Gujarat University.

Implications

Lack of confidence and fair practice of EBP is seen at post graduate level. So there should be more attention paid to include EBP training in the curriculum and educate the students for EBP training / course at the Graduate level. Incorporating EBP at undergraduate level to improve and encourage practice of EBP in post graduate level and clinical decision making. And thus progress the profession's approach to developing, using and promoting research and its contribution to generating new evidence, knowledge transfer and Health care.

Future Recommendations

To study the correlation between Knowledge, Attitude and Practice of Evidence Based practice in post graduate students of various university. To compare Knowledge, Attitude and practice level Pre and Post Evidence based practice training in Post graduate students. To study the Knowledge, Attitude and Practice of Evidence Based practice in under graduate students.

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