# Evidence-Based Practice: beliefs, attitudes, knowledge and behaviours of Sri Lankan physiotherapists

Pathmanathan, C., Nanayakkarawasam, P.P.

# Abstract

*Purpose*: This study describes physiotherapists' self-reported attitudes, beliefs, knowledge, and barriers to Evidence-Based Practice (EBP).

*Methodology*: In a cross-sectional online survey, practising physiotherapists were invited to fill a Google form with Likert scales, which measured the required components. Descriptive and chi-square tests were performed to analyse data.

*Results*: The majority of 108 participants were female (56.5%). Most physiotherapists (63%) belong to the age group 30-39 years. It was found that 90% of participants had positive attitudes towards EBP. Although 89.8% of participants had learnt EBP during their academic programmes, complete awareness of the terminology of EBP was poor. More participants (57.4%) revealed that they received support to use current research in their practice, but 51% did not have access to current research. Insufficient time was the main barrier to practising EBP (26%) in clinical settings. Implementing EBP in their clinical practice was low (74 %) despite training during their academic programme.

*Conclusion*: It is noted that there was lack of implementation of EBP even though participants had a positive attitude towards EBP. It is recommended to have ongoing training and national-level policies to enhance EBP in physiotherapy clinical practice in Sri Lanka.

Keywords: Evidence-Based Practice, Physiotherapy, Evidence-based Healthcare

# Introduction

EBP is a globally accepted model of clinical decision making which is considered a gold standard in clinical practice by many health professionals, including Physiotherapists (Hasani *et al.*, 2020). World Physiotherapy (2019) (formerly the World Confederation of Physical Therapy) approved a policy on EBP in 2003. It states that "physical therapists have a responsibility to ensure that the management of patients/clients, carers and communities is based on the best available evidence."

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Improving patient ensuring the care, management of health resources effectively, satisfying the patient, increasing patients' safety, improving clinical outcomes, reducing healthcare costs, and decreasing variation in patient outcomes are advantages of using evidence-based practice (Black et al., 2015). EBP facilitates the physiotherapy practice into professional accountability and promotes service delivery and education (Physiotherapy, 2021). Further, it provides the framework for lifelong and self-directed learning (Balogun, 2021). However, predominant barriers hinder the implementation of EBP and restrict the benefits to the community and the physiotherapy profession (Scurlock-Evans et al., 2014).

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South-East Asian Journal of Medical Education Vol. 16, no. 1, 2022 Some barriers to the implementation of EBP are poor access to evidence, organizational barriers, ineffective education, limited time for retrieving and interpreting research and applying research to individual patients (Jette et al., 2003). The lack of opportunities for physiotherapists to conduct research that develops their EBP skills and increase positive attitudes is an unseen barrier (Scurlock-Evans et al., 2014). Inadequacy of data sources, perceived conflict with patient preferences, and economic pressures are additional barriers to implementing EBP (Jette et al., 2003). A study conducted in India further revealed inadequate emphasis on clinically oriented teaching of EBP and assessment methods, even at the Postgraduate curricula level (Panhale et al., 2017).

Several cross-sectional studies conducted in many countries (Alshehri et al., 2017, Hasani et al., 2020, Jette et al., 2003, Ramírez-Vélez et al., 2015a, Yahui & Swaminathan, 2017) strived to determine the physiotherapist's attitudes, beliefs, knowledge, behaviours, and barriers; more similarities were found in the studies. The most prominent similarity of all these studies was the positive attitude of physiotherapists towards EBP. Participants revealed that they were interested in learning more about EBP and research methodologies. Another frequent discovery was the physiotherapist's inability to employ EBP in clinical practice despite the positive attitudes towards implementing EBP. The majority of participants of all the studies had stated that the EBP was essential for the improvement of clinical practice, but they had emphasised the lack of time as a barrier. The findings of the studies may provide a basis for implementing EBP in different clinical settings and also change the teaching-learning practices of EBP.

It is observed that the Sri Lankan physiotherapy practice does not fully embrace the EBP concept. This indicates that Sri Lankan physiotherapy clinical practice is based on physiotherapists' clinical expertise rather than the research evidence and clinical practice guidelines. Sri Lankan Physiotherapists can acquire the best evidence from the global physiotherapy community within a shorter period due to advancements in communication technology in Sri Lanka (Bandusir, 2021). The open-access concept also allows them to access literature comfortably (Dijk et al., 2021). Therefore, it is vital to identify the factors affecting the EBP of the local physiotherapy practice to enhance the implementation of EBP. As the published data is scarce, this study describes Sri Lankan physiotherapists' selfreported beliefs, attitudes, knowledge, and behaviours towards EBP. In addition, this study also describes education and skills related to obtaining and evaluating evidence, attention to the literature relevant to practice, access to and availability of information, and perceptions of the barriers to EBP.

# Methods

# Study design

A cross-sectional, descriptive study was conducted with convenience sampling to fulfil the study aims. Sri Lankan Physiotherapists who were practising for more than one year in any setting in the country were recruited for the study. Physiotherapists practising overseas and retired from service were excluded.

# Population and sample

The target population of this study was the Sri Lankan physiotherapists practising in the public and private sectors. The number of government physiotherapists in Sri Lanka was 652 (Medical Statistics, 2019)] and few physiotherapists practise exclusively in the private sector. Therefore, the authors decided to allow many physiotherapists to participate in the survey within eight weeks.

#### Data collection tools

A questionnaire developed by Jette et al. (2003) to determine physiotherapists' attitudes, beliefs, learning, behaviours, and barriers skills. concerning EBP was utilized in this study. It was not necessary to translate the questionnaire to native languages as the Sri Lankan Physiotherapists attain their entry-level education in English. This questionnaire explores respondents' attitudes and beliefs

about EBP, educational background, knowledge, and skills related to accessing and interpreting information, level of attention to and use of the literature, availability, and access to information to promote EBP, and their perceived barriers in using Evidence in practice. A Likert scale was used to assess items concerning attitudes, beliefs and education, knowledge, and skills related to EBP. Yes/No questions were also used in several questions. Jette et al (2003) established the reliability of the questionnaire, and (Ramírez-Vélez et al., 2015b) validated it.

# Data collection procedure

Approval for this study was obtained from the Ethics Review Committee of the Faculty of Medicine, University of Colombo. As there was no publicly accessible physiotherapy register in the country, the online Google form survey link was sent to physiotherapists attached to the government hospitals via the Government Physiotherapy Association communication link. It was also posted in WhatsApp groups that belong to the Sri Lanka Society of Physiotherapy and Government Physiotherapists. Further, the link was posted on Facebook, and it was sent personally as a message on Facebook Messenger. The link was posted again at the end of the second and fourth weeks to obtain adequate responses from the participants. The online Google form was closed after eight weeks, and all data was recorded in it.

# Data analysis

The descriptive analysis was done first. The Chi-square test was performed to identify the factors influencing the practice of EBP guidelines, using EBP in their clinical decision making, and eager to learn or improve their skills related to EBP by using SPSS version 16.0. A 5 point Likert scale (1- strongly disagree, 5 - strongly agree) was converted to 3 point scale (1- disagree, 3- Agree) (Jetti *et al.* 2003) to perform the Chi-square test. P<0.05

was considered as the statistically significant value.

#### Results

Though the response rate was unpredictable as the link was circulated via social platforms, 108 Sri Lankan Physiotherapists responded to the Google form. Descriptive analysis was performed to describe the demographic data of the study sample (Table 1).

It was found that many participants were aware about the EBP related term 'systematic review' but less aware of some other terms (Table 2). The majority accepted that the EBP improves the quality of patient care (96.3%).

The EBP practice among Sri Lankan physiotherapists is summarized (Table 3). From the participants, 89.8% had foundations for EBP as part of their academic preparation, but 3.7% had no academic preparation.

Self-perceived barriers to practice EBP was assessed (Table 4). Lack of time was the main barrier to the EBP when considering the barriers related to EBP among Sri Lankan physiotherapists.

The relationship of demographic factors, the workload at their settings, the training they received, and facilities at their settings between use of practising guidelines in their practice, clinical decision-making using EBP, and interest in learning or improving skills were assessed with the Chi-Squire test (Table 5).

According to the authors' knowledge, this is the first study conducted in Sri Lanka that focuses on describing self-reported beliefs, attitudes, knowledge, and behaviours of Sri Lankan physiotherapists towards EBP. It is also the first to determine the perception of barriers against incorporating EBP among Sri Lankan physiotherapists and determine the access to and the availability of scientific information.

	Variables	Responses	Frequency	%	
Background	Gender	Female	61	56.5	
information		Male	47	43.5	
	Age group	20-29 y	20	18.5	
		30-39 y	68	63	
		40-49 y	11	10.2	
		50+ y	9	8.3	
	A valid physical therapy license	No	7	6.5	
		Yes	101	93.5	
	Entry-level qualification to practice	Baccalaureate	75	69.4	
	physiotherapy	Higher National Diploma	33	30.6	
	Highest degree attained	Baccalaureate	80	74.1	
		Doctoral	3	2.8	
		Master's	13	12	
		others	12	11.1	
	Intention to purque on advanced degree	Do not know	21	19.4	
	in the future	No	11	10.2	
		Yes	76	70.4	
	Regularly (once per year) participate in	No	35	32.4	
	continuing education courses	Yes	73	67.6	
	Are you a clinical instructor for physical	No	58	53.7	
	therapist students/interns/residents?	Yes	50	46.3	
Work related	Average working hours per week	<20	5	4.6	
information		20-30	10	9.3	
		31-40	26	24.1	
		>40	67	62	
	Number of patients/ daily	<5	12	11.1	
		10-May	26	24.1	
		15-Nov	25	23.1	
		>15	45	41.7	
	Problems treated	Cardiovascular/	15	13.9	
		Musculoskeletal	52	48.1	
			19	17.6	
			14	13	
		Do not treat patients	1 7	0.9	
	Patients category		80	7/ 1	
	T allents category	Geriatric (65+v)	11	10.2	
		Paediatric (<18)	11	10.2	
		other	6	5.5	
	Location of the facility	Rural	5	4.6	
		Suburban	25	23.2	
		Urban	78	72.2	
	Facility	Acute care beenite!	20	25.0	
	r acinty	Acute repebilitation	30 11	30.Z	
			11	10.2	
		Facility-based outpatient	12	11.1	
		Home care	2	1.9	
		Privately owned outpatient	7	6.5	
		School system	2	1.9	
		Sub-acute rehabilitation	24	22.2	
		University	3	2.7	
		Other	9	8.3	

Table 1: Background information of participants and work related information

	EB	r _					1.4.1
		Understand		Understand		Completely	
	-	N	%	N	%	N	%
Awareness of the	Relative risk	11	10.2	47	43.5	50	46.3
terms related to	Absolute risk	11	10.2	50	46.3	47	43.5
EBP	Systematic review	4	3.7	27	25	77	71.3
	Odds ratio	30	27.8	51	47.2	27	25
	Meta-analysis	16	14.8	39	36.1	53	49.1
	Confidence interval	29	26.8	48	44.5	31	28.7
	Publication bias	14	12.9	48	44.5	46	42.6
		Stro	ngly			Stro	naly
	_	disagree/ disagree		Neutral		agree/agree	
		Ν	%	Ν	%	Ν	%
Attitude about EBP among physiotherapists	Literature and research findings are useful in my day-to-day practice.	2	1.8	6	5.6	100	92.6
	I need to increase the use of evidence in my daily practice.	2	1.8	3	2.8	103	95.4
	The adoption of EBP places an unreasonable demand on physical therapists.	30	27.8	26	24.1	52	48.2
	I am interested in learning or improving the skills necessary to incorporate EBP into my practice.	2	1.8	3	2.8	103	95.4
	EBP improves the quality of patient care.	2	1.8	2	1.9	104	96.3
	EBP does not take into account the limitations of my clinical practice setting.	17	15.7	39	36.1	52	48.2
	My reimbursement rate will increase if I incorporate EBP into my practice.	18	16.7	37	34.3	53	49
	Strong evidence is lacking to support most of the interventions I use with my patients.	36	33.3	30	27.8	42	38.9
	EBP helps me make decisions about patient care.	0	0	11	10.2	97	89.8
	EBP does not take into account patient preferences.	30	27.8	46	42.6	32	29.6

# Table 2: Awareness about EBP related terms, Physiotherapists' self-reported attitudes and beliefs about FRP

N: Number; %: percentage

Formal training on EBP for Sri Lankan Physiotherapists         Read/review research/literature related to my clinical practice.         -=1 article         11         10.2           EBP among Sri Lankan Physiotherapists         Use professional literature and research findings in the process of clinical decision making.         -=	Criteria	Factor	Responses	#	%
EBP among Sri Lankan Physiotherapists         I cereated to my clinical practice.         2.5 article         5.2         48.2           EBP among Sri Lankan Physiotherapists         Use professional literature and research findings in the process of clinical decision making.         <-1 time		Read/review research/literature	<=1 article	11	10.2
EBP among Sri Lankan Physiotherapists         Use professional literature and research findings in the process of clinical decision making.         6-10 articles         28         25.9           EBP among Sri Lankan Physiotherapists         Use MEDLINE or other databases to search for practice-relevant literature/research.         <-1 time		related to my clinical practice.	2-5 article	52	48.2
EBP among Sri Lankan Physiotherapists         I seerach findings in the process of clinical decision making.         11-15 article         17         15.7           EBP among Sri Lankan Physiotherapists         Use MEDLINE or other databases to search for practice-relevant literature/research.         -<=1 time		-	6-10 articles	28	25.9
EBP among Sri Lankan Physiotherapists         Use professional literature and research findings in the process of clinical decision making.         2-5 times         56         51.9           EBP among Sri Lankan Physiotherapists         Use MEDLINE or other databases to search for practice-relevant literature/research.         2-5 times         14         13         12           I actively seek practice guidelines pertaining to areas of my practice.         11-15 times         24         38.9           I actively seek practice guidelines pertaining to areas of my practice.         Strongly disagree         1         0.9           I use practice guidelines in my practice.         Disagree         3         2.8           I am able to incorporate patient preferences with practice guidelines on EBP for Sri Lankan Physiotherapists         Strongly agree         9         8.3           I have received formal training on EBP for Sri Lankan Physiotherapists         I learmed the foundations for EBP as part of my academic preparation.         Strongly disagree         1         0.9           I have received formal training in search strategies for tile appraisal of research literature as part of my academic preparation.         Strongly disagree         3         2.8           I have access to current research literature as part of my access to current research facilities by Sri Lankan         I received formal training in critical appraisal of research literature as part of my acceess practice my accees to current research iterature as		-	11-15 article	17	15.7
EBP among Sri Lankan Physiotherapist         I actively seek practice guidelines pertaining to areas of my practice.         Strongly agree         3         2.8           I use practice guidelines in my practice.         Disagree         10.9         10.2         3.2           I use practice guidelines in my practice.         Disagree         10.9         3.2         3.2           I use practice guidelines in my practice.         Disagree         10.9         3.2         3.2           I use practice guidelines in my practice.         Disagree         10.9         3.2         3.2           I am able to incorporate patient preferences with practice guidelines part of my academic preparation.         Strongly agree         10.9         3.2           I am able to incorporate patient preferences with practice guidelines part of my academic preparation.         Strongly agree         10.9         3.2           I have received format training in offical appraisal of research literature as part of my academic preparation.         Neutral         44         40.7           Agree         66         5.6         3.3         3.3         3.3         3.3           I have received format training in official appraisal of research literature as part of my academic preparation.         Neutral         7         6.5           Agree         66         5.6         3         3.2		Use professional literature and	<=1 time	12	11.1
EBP among Sri Lankan Physiotherapist         Clinical decision making.         6-10 time         26         24           I use MEDLINE or other databases to search for practice-relevant literature/research.         i-11 time         13         12           EBP among Sri Lankan Physiotherapist         I actively seek practice guidelines pertaining to areas of my practice.         Strongly disagree         1         0.9           I use practice guidelines in my practice.         Disagree         8         7.4           I use practice guidelines in my practice.         Neutral         32         29.6           Agree         56         51.9         5100/19 agree         3         2.8           I use practice guidelines in my practice.         Neutral         25         23.2         Agree         71         65.7           I am able to incorporate patient preferences with practice guidelines part of my academic preparation.         Strongly agree         1         0.9           I have received formal training in search strategies for finding research relevant to my practice.         Neutral         7         6.5           Neutral         13         12         3         3           I have received formal training in critical appraisal of research literature as part of my academic preparation.         Neutral         13         12           Agree		research findings in the process of	2-5 times	56	51.9
EBP among Sri Lankan Physiotherapist         I actively seek practice guidelines pertaining to areas of my practice.         2-5 times         42         38.9           I actively seek practice guidelines pertaining to areas of my practice.         11-15 times         25         23.1           I actively seek practice guidelines pertaining to areas of my practice.         Strongly disagree         1         0.9           Disagree         8         7.4         Neutral         32         26.6           Agree         56         51.9         Strongly agree         11         10.2           I use practice guidelines in my practice.         Neutral         25         23.2         Agree         71         65.7           Strongly agree         9         8.3         3         28         Neutral         25         23.2           Agree         71         65.7         Strongly agree         9         8.3           I am able to incorporate patient preferences with practice guidelines         Disagree         1         0.9           Disagree         4         3.7         Agree         65         6.5           Neutral         74         44         40.7         Agree         6.5         6           Notarial         9         3.3         S		clinical decision making.	6-10 time	26	24
EBP among Sri Lankan Physiotherapist         Use MEDLINE or other databases to search for practice-relevant literature/research.         <=1 time         13         12           I actively seek practice guidelines pertaining to areas of my practice.         1 actively seek practice guidelines pertaining to areas of my practice.         6-10 time         28         26           I actively seek practice guidelines pertaining to areas of my practice.         Strongly disagree         1         0.9           I use practice guidelines in my practice.         Disagree         3         2.8           I am able to incorporate patient preferences with practice guidelines         Strongly agree         1         0.9           I am able to incorporate patient preferences with practice guidelines         Strongly agree         1         0.9           I are able to incorporate patient preferences with practice guidelines         Strongly disagree         1         0.9           I are able to incorporate patient preferences with practice.         Strongly disagree         1         0.9           I have received formal training in on EBP for Sri Lankan         I have received formal training in search strategies for finding research relevant to my practice.         Strongly disagree         1         0.9           I received formal training in calities by Sri Lankan         I am able to access practice guidelines online.         Neutral         13         12		-	11-15 times	14	13
EBP among Sri Lankan Physiotherapist         search for practice-relevant literature/research.         2.5 times         42         38.9           I actively seek practice guidelines pertaining to areas of my practice.         1 actively disagree         1         0.9           I actively seek practice guidelines pertaining to areas of my practice.         Strongly disagree         1         0.9           Disagree         8         7.4           Neutral         32         29.6           Agree         56         51.9           I use practice guidelines in my practice.         Disagree         3         2.8           Neutral         25         23.2         Agree         71         65.7           Strongly agree         9         8.3         3         3         3         3           I am able to incorporate patient preferences with practice guidelines         Disagree         1         0.9		Use MEDLINE or other databases to	<=1 time	13	12
EBP among Sri Lankan Physiotherapist         I actively seek practice guidelines pertaining to areas of my practice.         6-10 time         28         26           I actively seek practice guidelines pertaining to areas of my practice.         I strongly disagree         1         0.9           Disagree         8         7.4         Neutral         32         29.6           Agree         56         51.9         Strongly agree         3         2.8           Practice.         Neutral         25         23.2         29.6           Agree         56         51.9         Strongly agree         3         2.8           Neutral         25         23.2         29.6         Agree         71         65.7           Strongly agree         9         8.3         3         3         3         3           I am able to incorporate patient preferences with practice guidelines for EBP as part of my academic preparation.         Strongly agree         1         0.9         3         3         3           I have received formal training in celevant to my practice.         Disagree         3         2.8         3         3         3           I received formal training in celevant to my academic preparation.         Strongly disagree         1         0.9         3		search for practice-relevant	2-5 times	42	38.9
EBP among Sri Lankan PhysiotherapistI actively seek practice guidelines pertaining to areas of my practice.11-15 times2523.1I actively seek practice guidelines pertaining to areas of my practice.Strongly disagree10.9Disagree87.4Neutral3229.6Agree5651.9Strongly agree1110.2I use practice.Neutral2523.2Agree7165.7Strongly disagree10.9Disagree65.6Neutral240.9Disagree65.6Neutral4440.7Agree5046.3Strongly disagree10.9Disagree65.6Neutral4440.7Agree6355.3Strongly agree76.5Neutral76.5Strongly agree32.8PhysiotherapistsI have received formal training in relevant to my practice.Strongly agree3I received formal training in critical appraisal of research literature as part of my academic preparation.Strongly disagree10.9Disagree65.60.21.312Agree6560.221.3321.3Strongly agree2321.31.312Agree6560.221.331.4Agree6560.21.01.413<		literature/research.	6-10 time	28	26
EBP among Sri Lankan         Tactively seek practice guidelines pertaining to areas of my practice.         Strongly disagree         1         0.9           Physiotherapist         I actively seek practice guidelines pertaining to areas of my practice.         Disagree         8         7.4           Neutral         32         29.6         Agree         56         51.9           Strongly agree         11         10.2         23.2         Agree         71         65.7           I use practice guidelines in my practice.         Neutral         25         23.2         Agree         71         65.7           I am able to incorporate patient preferences with practice guidelines         Strongly disagree         9         8.3         10.9           Disagree         6         5.6         Neutral         44         40.7           Agree         50         46.3         Strongly disagree         1         0.9           Disagree         3         58         Strongly disagree         1         0.9           Disagree         3         2.8         Strongly agree         3         2.8           Formal training on EBP for Sri Lankan         I have received formal training in critical appraisal of research literature as part of my academic preparation.         Strongly disagree         1 <td></td> <td>-</td> <td>11-15 times</td> <td>25</td> <td>23.1</td>		-	11-15 times	25	23.1
Lankan       Physiotherapist       pertaining to areas of my practice.       Disagree       8       7.4         Physiotherapist       pertaining to areas of my practice.       Disagree       8       7.4         Neutral       32       29.6       Agree       56       51.9         Strongly agree       11       10.2       Agree       56       51.9         I use practice guidelines in my practice.       Neutral       25       23.2       Agree       71       65.7         Strongly agree       9       8.3       3<	EBP among Sri	l actively seek practice guidelines	Strongly disagree	1	0.9
Physiotherapist         Neutral         32         29.6           Agree         56         51.9         Strongly agree         11         10.2           I use practice guidelines in my practice.         Disagree         3         2.8           Neutral         25         23.2           Agree         71         65.7           Strongly agree         9         8.3           I am able to incorporate patient preferences with practice guidelines         Strongly agree         1         0.9           Disagree         6         5.6         Neutral         44         40.7           Agree         50         46.3         Strongly agree         7         6.5           Neutral         7         6.5         Agree         63         58.3           Strongly agree         34         31.5         Strongly agree         34         31.5           I have received formal training in search strategies for finding research relevant to my practice.         Neutral         13         12           Lankan         Agree         68         63         56.6           Neutral         13         12         Agree         66         6.6           Agree         68         63	Lankan	pertaining to areas of my practice.	Disagree	8	7.4
Formal training on EBP for Sri Lankan         I law received formal training in spart of my academic preparation.         Agree         56         51.9           I have access to facilities by Sri Lankan         I am able to access practice guidelines online.         I law able to access practice guidelines online.         Disagree         3         2.8           Mysiotherapists         I am able to access practice guidelines online.         Strongly agree         9         8.3           I am able to access practice guidelines online.         I learned the foundations for EBP as part of my academic preparation.         Strongly agree         1         0.9           I have received formal training in search strategies for finding research relevant to my practice.         I have received formal training in search strategies for finding research relevant to my practice.         Strongly disagree         1         0.9           I received formal training in search strategies for finding research relevant to my practice.         Strongly disagree         1         0.9           Disagree         66         63         3         1.3         12           Agree         66         60.2         3         2.1.3           My facility supports the use of current research in practice.         No         14         13           My facility supports the use of current research in practice.         Strongly disagree         4 <td< td=""><td>Physiotherapist</td><td></td><td>Neutral</td><td>32</td><td>29.6</td></td<>	Physiotherapist		Neutral	32	29.6
Formal training on EBP for Sri Lankan Physiotherapists         I learned the foundations for EBP as part of my academic preparation.         Strongly agree         1         1.0.2           I received formal training in facilities by Sri Lankan         I am able to access practice guidelines         Strongly agree         3         2.8           I am able to incorporate patient preferences with practice guidelines         Strongly disagree         1         0.9           I am able to incorporate patient preferences with practice guidelines         Strongly disagree         1         0.9           I am able to incorporate patient preferences with practice         Strongly agree         7         6.5           Neutral         44         40.7         Agree         50         46.3           Strongly agree         7         6.5         5         5         5           I learned the foundations for EBP as part of my academic preparation.         Disagree         3         2.8           I have received formal training in search strategies for finding research relevant to my practice.         Strongly disagree         1         0.9           I received formal training in critical appraisal of research literature as part of my academic preparation.         Strongly disagree         1         0.9           I am able to access practice guidelines online.         Neutral         13         12		-	Aaree	56	51.9
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		-	Agree	49	45.4
Strongly Agree 13 12		-	Strongly Agree	13	12

 Table 3: Evidence based practice, formal learning and access to the EBP among Sri Lankan

 Physiotherapists

Barriers	Frequency	%
Insufficient time	28	25.9
Lack of generalizability of the literature findings to my patient population	14	13.0
Lack of information resources	14	13.0
Inability to apply research findings to individual patients with unique characteristics	14	13.0
Lack of understanding of statistical analysis	12	11.1
Lack of collective support among my colleagues in my facility	8	7.4
Lack of research skills	7	6.5
Lack of interest	6	5.5
Poor ability to critically appraise the literature	5	4.6

# Table 4: Barriers to practice Evidence-Based Practice in clinical setup

		Use of practising guidelines in their practice					Interes	sted in	n learning		
				auidelines in their		Clinical decision			or improving skills		
				tice	making using EBP		necessary to				
			P					incorporate EBP			
	Factors	X <sup>2</sup>	df	p value	X <sup>2</sup>	df	p value	X <sup>2</sup>	df	p value	
Demogra	Age	0.329	6	p>0.05	0.356	9	p>0.05	0.061	6	p>0.05	
phic	Gender	0.164	2	p>0.05	0.128	3	p>0.05	0.699	2	p>0.05	
factors	Entry level qualification	0.027	2	p=0.013	0.063	3	p=0.013	0.255	2	p>0.05	
	Highest degree attained	0.755	6	p>0.05	0.506	9	p>0.05	0.110	6	p>0.05	
	Participating CPD	0.998	2	p>0.05	0.387	3	p>0.05	0.419	2	p>0.05	
	Being clinical educator	0.425	2	p>0.05	0.190	3	p>0.05	0.767	2	p>0.05	
Workload	Working hours per week	0.811	6	p>0.05	0.804	9	p>0.05	0.070	6	p>0.05	
at their	Number of patients	0.911	6	p>0.05	0.391	9	p>0.05	0.489	6	p>0.05	
settings	treated										
	Location of workplace	0.739	6	p>0.05	0.796	6	p>0.05	0.042	4	p>0.05	
	Types of problems	0.173	10	p>0.05	0.185	15	p>0.05	0.929	10	p>0.05	
	managed										
Training	Learned the foundations	0.753	4	P>0.05	0.489	6	P>0.05	0.415	4	p>0.05	
they	for EBP as part of the										
received	academic preparation.										
	Received formal training	0.175	4	P>0.05	0.025	6	p=0.028	0.002	4	P=0.038	
	in search strategies for										
	finding research										
	relevant to my practice										
	Received formal training	0.281	4	P>0.05	0.795	6	P>0.05	0.098	4	p>0.05	
	in critical appraisal of										
	research literature as										
	part of my academic										
	preparation										
Access	Have access relevant	0.906	2	p>0.05	0.351	3	p>0.05	0.060	2	P=0.032	
to	databases and the										
facilities	Internet at my facility						_			_	
at their	Support received at	0.188	8	P>0.05	0.015	12	P=0.01	0.238	8	P>0.05	
settings	settings to use EBP										

#### Table 5: Factors influencing using EBP guidelines in their practice

X<sup>2</sup>: Chi-Squared test, df: Degree of Freedom, p: significant value

# Discussion

#### Beliefs and Attitudes

The attitude of Sri Lankan physiotherapists is positive toward EBP. More than 90% of participants thought EBP helped their practice. They liked to develop EBP related skills and believed that it improves the quality of patients' lives. Similar results were found in studies conducted in other countries (Ramírez-Vélez et al., 2015b; Yahui & Swaminathan, 2017; Jette et al., 2003; Mwololo et al., 2021) Further, nearly 90% thought that EBP helped them make decisions about patient care. A positive towards EBP is essential attitude in implementing EBP (Arnadottir & Gudjonsdottir, 2016).

However, a more significant number of participants did not believe patient preference was important in EBP (Neutral; 42.6% or Agree; 29.7%). This perspective is similar to Brazilian physiotherapists' (Nilsagård & Lohse, 2010) but opposite to the view of the Kenyan sports physiotherapists (Mwololo *et al.*, 2021).

# EBP knowledge

The majority of respondents (89.8%) learnt foundations for EBP as part of their academic preparation, which is a higher percentage than in the other studies (Yahui & Swaminathan, 2017), (Jette et al., 2003). Further, they had received formal training on search strategies for finding research (84.3%) and critical appraisal of literature (81.5%). Teaching the principles of EBP at the undergraduate level influences clinical decision-making and research skills (M Burger, 2014). The research skills such as familiarity with the medical search engines (85.2%), confidentiality to critically review literature (72.3%), and finding relevant research to answer the clinical questions (90.8%) were known by the many. The teaching of 4-year Physiotherapy degrees (incepted in 2005) and 2-year conversion programmes conducted in Sri Lanka supported the results presented here. This study confirms that receiving formal training in search strategies for finding research relevant to the practice was significantly related to clinical decision making using EBP and

interest in learning or improving skills necessary to incorporate EBP, but Mwololo *et al.*, (2021) found the opposite results. It is mentioned that formal training does not have an influence on attitudes and perceptions regarding EBP.

# EBP implementation

Though many participants had positive attitudes towards EBP, they learnt the basics of EBP and developed research skills necessary in their formal education; it is noticeable that many were more eager to use practice guidelines (74.0%) than research findings. Reviewing and utilizing research literature for clinical decision-making was also poor. Positive attitudes towards EBP and less implementation were common in physiotherapy in Saudi Arabia (Hasani et al., 2020) and Thailand (Vongsirinavarat et al., 2020). But according to the Swedish Physiotherapists, various types of research-related knowledge and skills assist in using research in clinical practice (Dannapfel et al., 2013). Application of EBP involves curriculum consideration, teaching, and stakeholder engagement in EBP education (Lehane et al., 2019).

Further, it will be beneficial for physiotherapists to have regular training on EBP. National guidelines should be developed to encourage professionals to actively use EBP during their practice. Executing EBP is not simple, but necessary to consider many aspects of attitudes, potential, and the interaction between the clinician and the workplace (Arnadottir & Gudjonsdottir, 2016).

This study suggests that entry level qualification is one of the factors that influences use of EBP in their practice and clinical decision making. However, study indicates other factors such as age, gender, work load (eg: average work hours, number of patients per day), type of conditions and access to the facilities do not influence use of guidelines in clinical practice. The same findings were noted in the clinical decision making. However, formal training and support received in the setting influenced the clinical decision making. A study conducted among nursing officers suggests that age, number of years of nursing practice and number of years since obtaining the last health professional degree influenced the use of sources of knowledge (Dalheim *et al.*, 2012); skills in evidence based practice seem to reduce barriers to using research evidence. In Sri Lanka, less use of EBP in clinic decision making, actively seek practice guideline 62.1% and use guidelines in patient management 74%, may be the potential reason for less influence of those dependent variables.

# Barriers against incorporating EBP

The majority of the study respondents identified 'insufficient time' as the primary barrier for executing EBP, which was found to be the main barrier in other studies conducted elsewhere (Yahui & Swaminathan, 2017, Heiwe et al., 2011, Nilsagård & Lohse, 2010, Mwololo et al., 2021, Ramírez-Vélez et al., 2015b). This study shows that the criteria related to workload at their settings do not significantly influence the assessed EBP components. Contrary to these results, 'insufficient time' was the 'least important' barrier for the implementation of EBP in Saudi Arabia (Alshehri et al., 2017), but the 'most important' barrier was 'lack of formal education on EBP when following the foundation courses' which is not a barrier in this study.

Participating physiotherapists identified "Lack of generalizability of the literature findings to patient population" and "Inability to apply research findings to individual patients with unique characteristics" as barriers. The process of applying research findings to clinical decision-making is not effortless (Garner et al., 1998). Research findings of developed countries are challenging to be implemented in developing countries due to health inequality. cultural differences, perception, and biological and non-biological variations (Alemayehu et al., 2018). Limited research publications from countries with resource scarcity (Siriwardhana, 2015) may also hinder applying similar research. Physiotherapists of other developing nations (Yahui & Swaminathan, 2017; Mwololo et al., 2021) also faced similar problems.

"Lack of information resources" is considered another barrier to applying EBP in clinical practice. It is known that poor access to information makes EBP near impossible in developing countries (Pearson & Jordan, 2010). Although participants have access to online materials related to guidelines, there is a limitation for recent research articles. Unaffordable payments for published research literature are a problem in developing countries (Chan, 2005). Therefore, removing the limitations of access to the research literature and updating the physiotherapists' knowledge by professional bodies in developing countries and world organizations is a must. However, according to the present study analysis, having access to databases does not influence EBP practice among physiotherapists. Therefore, the need to educate physiotherapists to utilize those resource effectively is also an important fact to consider.

This study highlights the "lack of understanding of statistical analysis" as another drawback of implementing the EBP. This is agreed with other physiotherapy studies (Heiwe et al., 2011, Mwololo et al., 2021, Ramírez-Vélez et al., 2015b). It is difficult for non-statisticians to understand the statistical concepts, which affects clinicians to apply the literature for clinical practice. This may cause less understanding of EBP related terms except 'Systemic Review' (71.3%) by the respondents. A similar finding is seen among Saudi Arabian Physiotherapists (Alshehri et al., 2017, Tilson et al., 2016) found that 391 physiotherapy-related journal articles used 532 statistical terms, which could merge to 321 representative terms. Therefore, researchers have the responsibility to present their study results in such a way to make them understandable to the clinicians and assist the process of EBP (Armiio-Olivo, 2018). Further, statistical literacy can be improved by making necessary changes in BSc curricula continuous and providing professional development courses related to statistics (Tilson et al., 2016).

Lack of research skills and critical appraisal skills were not barriers to many, as most studied EBP and research in BSc and conversion programmes. Kenyan physiotherapists, more with Diploma, informed these as 'most important' barriers (Mwololo *et al.*, 2021).

# Conclusion

Physiotherapists practising in Sri Lanka received formal training in EBP during their training programme. However, the percentage of participants using EBP in their clinical practice is low. It is also noticed EBP related knowledge needs to be enhanced. The results indicate a lack of access to current research through journals, the support they received from the work settings, and insufficient time as possible reasons for the lack of EBP in their clinical practice. It is recommended to have ongoing training and national-level policy to enhance EBP.

# Limitations

The results of this study should be interpreted with some limitations. This self-reported online questionnaire was used to obtain the data. Further, the personal characteristics of the participants can cause information biases. Physiotherapists unfamiliar with using Google forms or not having a Gmail account might not participate in this study. Many physiotherapists who were unaware of EBP might not be interested in responding. This can introduce non-response bias and sample bias. Physiotherapists who were aware of EBP may contribute more than the others, leading to response bias.

The scarcity of statistics of government and private sector physiotherapists, not including physiotherapists from an official register, and opening the questionnaire to any physiotherapist can influence the generalizability of study findings. In addition, the few components of the questionnaire might not reflect the complex dimensions of attitude, beliefs, and behaviour of the Physiotherapists. Additionally, as some cited articles were published a few years back and conducted in different contexts, comparison of studies might be inappropriate because they may not represent the current statistics of those countries or identical to the Sri Lankan physiotherapy setting.

Despite these limitations, this first study conducted in the country received the attention from 108/600+ physiotherapists with diplomas and degrees working in many areas of the country to provide previously unknown information.

# Future recommendations

More detailed studies with a higher number of participants should be conducted to identify potential reasons for the lack of EBP in clinical practice. For example, focus group discussions should be conducted among stakeholders such as physiotherapy clinical and curriculum experts, clinical educators, and clinical physiotherapists to identify the potential reasons and methods to enhance EBP. There should be a national policy to enhance EBP to provide good care for the patients while minimizing unnecessary treatment.

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