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*Published in:*  
Physiotherapy Theory and Practice

*DOI:*  
[10.1080/09593985.2024.2316308](https://doi.org/10.1080/09593985.2024.2316308)

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*Recommended citation(APA):*  
Furness, J., Phillips, J., Fontenelle Dumans Canetti, E., & Kemp-Smith, K. (2024). Exploring mental health approaches and curriculum in physiotherapy: an Australasian perspective. *Physiotherapy Theory and Practice*, 1-15. <https://doi.org/10.1080/09593985.2024.2316308>

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# Physiotherapy Theory and Practice

## An International Journal of Physical Therapy

ISSN: (Print) (Online) Journal homepage: [www.tandfonline.com/journals/iptp20](http://www.tandfonline.com/journals/iptp20)

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To cite this article: J. Furness, J. Phillips, E. Canetti & K. Kemp-Smith (18 Feb 2024): Exploring mental health approaches and curriculum in physiotherapy: an Australasian perspective, Physiotherapy Theory and Practice, DOI: [10.1080/09593985.2024.2316308](https://doi.org/10.1080/09593985.2024.2316308)

To link to this article: <https://doi.org/10.1080/09593985.2024.2316308>



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Published online: 18 Feb 2024.



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## Exploring mental health approaches and curriculum in physiotherapy: an Australasian perspective

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### ABSTRACT

**Background:** Exposure to mental health problems are becoming increasingly more frequent within physiotherapy. Physiotherapists recognize the need for a biopsychosocial approach, however their knowledge, assessment, and treatment skills specific to mental health problems requires further research.

**Purpose:** To profile the level of education and perception of education that physiotherapists have acquired specific to mental health problems; and to profile an understanding of the current practice of physiotherapists specific to mental health problems.

**Methods:** An online survey addressed the aims of the study and collected data from physiotherapists in Australia and New Zealand (open between 20<sup>th</sup> of October 2022 to the 20<sup>th</sup> of March 2023).

**Results:** 139 respondents were included in the analysis. Physiotherapists had a perception that a significantly greater amount of coursework related to mental health needed to be included within their initial degree compared to what they received (mean difference of 20.0%, 95% CI: 17.5 to 22.5). This trend was evident irrespective of the degree level or the year of graduation. Higher perceived knowledge of anxiety (MD of 11.4,  $p = 0.001$ , ES: 0.5) and depression (MD of 11.8,  $p = 0.001$ , ES: 0.5) was evident in outpatient care physiotherapists. Lack of perceived knowledge is a reason for whether an assessment or treatment strategy is used with patients experiencing a mental health problem. Motivational interviewing and mindfulness were the most frequently used psychologically based techniques.

**Conclusion:** This study reveals the need to increase the amount of mental health and psychologically based techniques within Physiotherapy curriculum.

### ARTICLE HISTORY

Received 23 August 2023

Revised 8 January 2024

Accepted 8 January 2024

### KEYWORDS

Physiotherapy; mental health problems; anxiety; depression



## Introduction

Physiotherapists are educated to manage the physical impairments of patients with a range of pathologies across three broad areas of practice including neurological, cardiorespiratory, and musculoskeletal. However, many of these patients often present with mental health comorbidities. For example, in the neurological setting up to 52% of patients who have had a cerebro-vascular accident (CVA) have associated depression (Caeiro, Ferro, Santos, and Figueira, 2006). Similarly, in the cardiorespiratory setting patients presenting with conditions such as chronic obstructive pulmonary disease (COPD) can have associated anxiety, with the prevalence ranging from 10% to 55% (Willgoss and Yohannes, 2013). Furthermore, up to 25% of musculoskeletal conditions have associated mental health comorbidities (Australian Institute of Health Welfare, 2010).

Connaughton and Gibson (2016) discovered that a total of 76% of physiotherapists within Western

Australia reported seeing at least one patient per week with a mental health comorbidity. The recent global pandemic has significantly exacerbated the frequency of mental health disorders. The World Health Organization demonstrated that the prevalence of anxiety and depression has increased by 25% worldwide in the first year [2020] of the COVID pandemic (World Health Organisation, 2022). As the general population is increasingly impacted by mental health problems, physiotherapists will undoubtedly encounter a growing number of patients who present clinically with mental health challenges as the primary complaint or as a comorbid presentation.

Until recently, physiotherapists were taught a biomedical approach to assessment and treatment of patients. This model assumes disease to be fully accounted for by deviations from biological (somatic) variables, however advancements in the understanding of pain mechanisms have shown that this may not be

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adequate (Farre and Rapley, 2017). For example, the drivers and influences of pain are multi-factorial and often extend beyond tissue damage, encompassing psychological factors which further influence the individual's experience of pain (Stearns, Carvalho, Beneciuk, and Lentz, 2021). Similarly, breathlessness may not only be attributed to biological drivers but also catastrophic thoughts associated with anxiety (Willgoss and Yohannes, 2013). Furthermore, a pure biomedical model may not be adequate within mental health problems; whereby there may be the presence of mental illnesses but the absence of disease (Farre and Rapley, 2017). Clinical guidelines across a variety of contexts now place increasing emphasis on applying a holistic approach known as the biopsychosocial model (National Institute for Health and Care Excellence, 2021). This often involves a physiotherapist needing to understand the biological factors (pathophysiological changes or impaired body structure and function), the social determinants of health (occupation, family situation, health literacy and support within the community), and the psychological factors (attitudes and beliefs, coping strategies, fear avoidance behaviors). Combined, these factors are potential influencers of symptom presentation. The way that a patient's thoughts, feelings, emotions and behaviors influence their situation are often referred to as "yellow flags", and these are noted within a patient assessment (Stearns, Carvalho, Beneciuk, and Lentz, 2021). While clinical guidelines promote the use of a biopsychosocial model, physiotherapists report inadequate training, a lack of understanding and underutilization of psychological interventions to treat the multidimensional pain presentations (Alexanders, Anderson, and Henderson, 2015; Synnott et al., 2015). Consequently, patient care does not align with these recommendations of applying a biopsychosocial model of care (Hemmings and Soundy, 2020). Furthermore, a systematic review conducted by Zadro, O'Keeffe, and Maher (2019) demonstrated that 40% of care delivered by physiotherapists for low back pain did not align with clinical guidelines. A cross sectional survey conducted by Driver, Lovell, and Oprescu (2021a) explored the views and perceived knowledge and reported use of psychosocial strategies in practice in physiotherapy within Australia. The authors found that physiotherapists viewed psychosocial strategies as important and beneficial, however they lack the required skills and training to confidently apply these within patient care. Furthermore, while skills such as goal setting and positive reinforcement were commonly used, other skills such as Cognitive Behavioral Therapy (CBT)

and Motivational Interviewing were used less, not due to lack of importance but most likely due to the reflection of their training (Driver, Lovell, and Oprescu, 2021a).

Despite the lack of implementation of a biopsychosocial model of care; current research highlights the importance of addressing these psychological factors or yellow flags alongside other traditional physiotherapy interventions. Two major clinical trials conducted on patients with chronic low back pain illustrated the efficacy of stratified care according to psychological needs. In these studies, physiotherapists provided additional psychological interventions such as CBT alongside exercise therapy, demonstrating that these patients had significantly reduced disability compared to a control group receiving usual care (Hill et al., 2011; Lamb et al., 2010). Similarly, Cognitive Functional Therapy Also targets unhelpful pain-related cognitions, emotions and behaviors that contribute to pain and disability (Kent et al., 2023). This therapy has been shown to reduce comorbidities such as depression and anxiety in addition to pain and functional disability in persistent conditions such as nonspecific chronic low back pain (Kent et al., 2023; O'Sullivan et al., 2018; O'Sullivan, Dankaerts, O'Sullivan, and O'Sullivan, 2015).

Therefore, research, clinical guidelines, and physiotherapy approaches support treatment that addresses both mind and body. Mind and body approaches are perceived to benefit patients physical and mental health. Emerging research has demonstrated the neurophysiological effects of mind body practice (meditation) such as increased heart rate variability and suppression of inflammatory pathways (Farre and Rapley, 2017). Further societal benefits of these types of practices include empathy, tolerance, enhanced quality of patient care and personal resilience; therefore assisting in the management of persistent pain and mental health challenges (Farre and Rapley, 2017).

### ***Research supports the acknowledgment of the connection between the mind and body.***

This was evidenced in a survey conducted among physiotherapists in Australia which explored their attitudes toward treating patients with comorbid mental health problems using cross-sectional survey designs (Connaughton and Gibson, 2016; Lennon et al., 2020). Physiotherapists were presented with a set of open-ended questions, a notable theme was their desire, upon graduating, to have understood that the mind and body are inseparable (Connaughton and Gibson, 2016). Additionally, a cross sectional survey conducted with Irish physiotherapists reported that 82% perceived their

scope of practice to include identifying psychological distress in patients and approximately half (49%) routinely assessed for psychological distress (Lennon et al., 2020). A recent systematic review across 11 studies concluded that physiotherapists internationally perceive their role to include treating patients with anxiety and depression despite feeling underprepared to do so (Ribeiro et al., 2022). Despite this positive perception, physiotherapists report that their education did not adequately train them to address mental health problems and consequently they do not have the communication skills, confidence, time and resources available required to effectively engage and manage patients with mental health problems (Connaughton and Gibson, 2016; Lennon et al., 2020; Ribeiro et al., 2022; Synnott et al., 2015; Zangoni and Thomson, 2017).

The increasing prevalence of mental health problems and reported regularity of exposure in clinical settings creates a clear need for further research within this area of the physiotherapy profession. There is now a supporting body of literature that a mind and body approach is needed within clinical practice to address both physical and psychological problems (Farre and Rapley, 2017; Kent et al., 2023). Additionally, there is a desire for physiotherapists to be further educated within the domains of psychological interventions (Connaughton and Gibson, 2016; Driver, Lovell, and Oprescu, 2021a). This research will therefore extend and build upon the current literature. With respect to mental health problems, this research will also profile the level of perceived education received and what is now needed in physiotherapy curriculum. Further, it will outline the current approaches to the treatment of mental health comorbidities across a broad spectrum of clinical areas within physiotherapy. Understanding the current practices, perceptions, and behaviors in physiotherapists is paramount as this will ultimately highlight directions for curriculum development.

Therefore, the primary aim of this study was to profile the level of education and perception of education that physiotherapists have acquired specific to mental health problems, with the intent to provide further understanding of educational needs within the profession. Secondly, an understanding of the current practice of physiotherapists specific to managing patients with comorbid mental health problems was undertaken to help inform the current practice trends and possible curriculum needs.

## Methods

### Study design

Based on the research aims, an observational study design was employed. As the primary aims related to

profiling physiotherapists' education levels and management approaches specific to mental health comorbidities, a cross sectional survey design was used. This allowed for the exposure of interest (physiotherapists) and outcomes (education levels, perceptions, and management approaches) to be measured at a single point in time (please see supplementary File 1 to access the survey). The development of this study design was guided by the STROBE statement for reporting observational studies (von Elm et al., 2007).

For this study, the authors adopted the broader term: "mental health problem" and defined this term to include a continuum of mild undiagnosed symptoms of mental illness to a diagnosed mental illness such as anxiety and depression. Included in this definition of mental health problems was the term "psychological distress." This can be considered as a transient phenomenon characterized by symptoms of anxiety and depression and often subsides with removal of the stressor or as the person adapts to their changed circumstances. The authors adopted a broader term as it encompasses and aligns to clinical experiences.

### Setting

The study used an online methodology as this provided a feasible option to collect data from physiotherapists working within Australia and New Zealand.

### Participants

Physiotherapists that undertook their initial physiotherapy degree in Australia or New Zealand and are currently registered in either country were eligible to take part in the survey. Physiotherapists were recruited from both countries as curriculum, clinical work environments, and registration requirements are comparable between both countries as they both follow the same physiotherapy practice thresholds (Physiotherapy Board of Australia and Physiotherapy Board of New Zealand, 2015). Typically, physiotherapists can be first contact practitioners in both countries within the private sector but are not typically first contact practitioners in the hospital setting.

### Variables of interest

Based on the primary aims, there were several key variables of interest as illustrated in Table 1.

Key outcomes were perceived coursework allocated to learning about mental health within the

**Table 1.** Variables of interest used within the survey and accompanying examples.

Variables of interest	Examples from the survey
Demographic	Gender, and age
Educational profile	Year of graduation, initial degree, courses undertaken specific to mental health
location of primary work settings	Urban or rural
Primary specialty areas	Private practice or hospital inpatients
Underlying framework and approach to clinical practice	Biomedical, biopsychosocial approaches
Approaches to a patient with catastrophising thoughts	Talk to the patient about these thoughts, referral to a GP
Assessment approaches to mental health comorbidities	Patient report outcome measures such as the General Anxiety and Depression questionnaire
Management approaches to mental health comorbidities	Psychologically informed techniques such as motivational interviewing

initial physiotherapy degree and perceived levels of knowledge related to anxiety and depression. A continuous scale of 0–100 was used where participants self-selected this value. This represented an overall percentage of respondents' perceived level of knowledge and perceived amount of coursework within their initial degree.

Given the primary aims were specific to profiling physiotherapists' education levels and management approaches specific to mental health comorbidities a descriptive analysis was provided for all variables. Key groupings were developed to further explore the influence of workplace (inpatient compared with outpatient), year of graduation (physiotherapists graduating prior 2010 and those after this date) and level of education (Bachelor's degree compared with Masters and Doctor of Physiotherapy) on the outcomes listed above.

### Sample size

Two key primary outcomes were the perceptions of mental health course work curriculum, and knowledge of anxiety and depression both measured on a continuous scale. One of the main interests was to assess for statistically significant differences in these outcomes between various physiotherapy cohorts (e.g., working in an inpatient and outpatient setting or year of graduation) using an independent t-test. A sample size calculation using the G\*Power software (Franz Faul, Germany, version 3.1.9.6) estimated a total sample size of 128 respondents, based on a medium effect size of 0.5, a two-tailed test, an alpha level of 0.05, and a power of 80%.

### Recruitment strategy

A purposive recruitment strategy was used whereby physiotherapists were recruited through a range of online methods. This involved contacting physiotherapy organizations, researcher contacts, and using social media avenues to advertise and promote engagement in the survey. Large organizations that assisted with survey distribution included the Australian Physiotherapy Association, Physiotherapy New Zealand, and the

Council of Physiotherapy Deans Australia and New Zealand. Researcher contacts included physiotherapy leads at public and private hospitals, alongside private practices. Additionally, university contacts in Australia and New Zealand were contacted and distributed the survey advertisement and link to their respective contacts. In addition to this, social media was utilized in survey distribution, through posting to physiotherapy Facebook groups in Australia and New Zealand, as well as the advertisement being shared on Twitter™, LinkedIn®, and Instagram™. For each distribution, the approved advertisement of the survey was displayed with a link. Once a potential participant clicked on the link they were directed to the explanatory and consent pages. Given the purposive method of sampling, it was not possible to calculate a response rate.

### Survey design

The development of the survey stemmed from a previous systematic review conducted by the authors which highlighted that physiotherapists perceived a lack of education and felt underprepared toward treating patients with depression and anxiety (Ribeiro et al., 2022). The survey development was an iterative process where-by authors drew upon their existing research knowledge, clinical and personal experience. The final survey was developed following six iterations and a face validity assessment. The survey was divided into three distinct parts: Part 1 included a range of demographic questions, such as gender, age range, country of physiotherapy registration, country of qualification, primary work setting, and specialty area. Respondents were also asked to provide information on the inclusion of mental health education within their initial physiotherapy qualification, and any additional courses they had completed related to mental health.

Part 2 involved respondents being asked to indicate their underlying framework and approach as a physiotherapist; rate their own level of perceived knowledge of anxiety and depression and asked to consider how they would address symptoms of anxiety in a provided simulated case study.

Part 3 involved questions specific to the respondent's assessment and management practices when dealing with patients presenting with comorbid mental health problems in their clinical practice. The questions sought to identify the specific assessment methods utilized and the treatment techniques employed.

### Face validity assessment

Two physiotherapists with clinical and research experience completed the survey and provided feedback. They evaluated the survey's face validity by assessing factors such as the time it took to complete, relevance of the questions, any gaps in question types, clarity of survey sections, their willingness to encourage peers to participate, and their preferred avenues for survey promotion. Appropriate changes in the survey were made to reflect external reviewers' input.

### Data recoding

All data were recoded within Excel (Microsoft 365, Microsoft Corporation) from text to numerical format. Questions were either a single response or enabled multiple answers. For questions that only allowed a single response, a total count for each variable within the question was provided and the percentage calculated based on the total number of respondents for that specific question. Where a respondent could select multiple answers within a question, the total count was provided for each variable, however the percentage provided was calculated based on the cumulative total number of answers provided for each variable.

Binary groups were created for inpatient care (involved hospital inpatients) or outpatient care (private practice, hospital outpatients, sport and community). If participants selected both as their primary work area, they were excluded within the grouping. If participants selected hospital inpatients and education or research, they were coded as inpatient care. The same occurred for outpatient care with respect to education and research. An additional binary group was created for those that graduated between 1980 and 2009 and those that graduated between 2010 and 2023. These timeframes were based on the proliferation of research within the field of physiotherapy related to the biopsychosocial model at this timepoint, corresponding with the expansion of Masters and Doctor of Physiotherapy degrees.

### Data analysis

Descriptive statistics were presented as counts and percentages for categorical variables and mean (SD) for

normally distributed continuous variables, or median (IQR) for skewed continuous variables. Normality was checked using a combination of histograms, normal Q-Q plots, and the Shapiro-Wilk test. Comparisons were made between key demographic variables of the current study and published Australian workforce data to illustrate the generalizability of the sample (Australian Government Department of Health, 2019).

Cross-tabulation was used to examine bivariate relationships between relevant variables, while independent t-tests and Chi-square tests assessed significant differences between groups for continuous and categorical data, respectively. All statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS, version 28.0, USA).

## Results

The survey was open for a 5-month period from the 20<sup>th</sup> of October 2022 to the 20<sup>th</sup> of March 2023. A total of 184 responses were downloaded for analysis. Out of these, 45 responses were excluded as they did not provide any details past the initial demographic section. Therefore, a total of 139 respondents were included in the analysis. Total number of respondents ( $n =$ ) for each question were provided within the results.

### Demographics of the respondents

Table 2 presents the demographics of the respondents, with the majority being Australian-registered physiotherapists (84.6%). There was a higher representation of women (66.9%) compared to men (32.4%) in the study, with similar proportions when compared to national Australian data (64.2%), with most participants falling within the age range of 30 to 39 years (44.6%). Additionally, the educational profile revealed that most respondents obtained a Bachelor's degree in physiotherapy, (67.9%), followed by Master's degree (17.5%) then a Doctor of Physiotherapy (11.7%) as their initial physiotherapy qualification. Respondents also provided details regarding their post-graduate qualifications. A total of 149 answers were provided as the question allowed multiple answers. Master's degree was the most prevalent (34/149, 22.8%), followed by a Doctoral Degree (16/149, 10.7%).

Table 3 reveals that most respondents' primary work settings were in urban and city areas (81.3%) with similar proportions when compared to national Australian data (80.8%) (Australian Government Department of Health, 2019). The most frequent primary work settings were private practice settings (28.0%) and hospital inpatients (25.0%). The most frequent specialty area was

**Table 2.** Demographic and educational profile of all respondents.

Category	Gender	Count (139)	Percentage of Total (Workforce Data) *
Frequencies of gender	Man	45	32.4 (35.7)
	Woman	93	66.9 (64.2)
	Prefer to not say	1	0.7
Frequencies of age range		Count (139)	Percentage of Total
	20 to 29	39	28.1
	30 to 39	62	44.6
	40 to 49	20	14.4
	50 to 59	15	10.8
	60 to 69	3	2.2
Frequencies of country registration		Count (136)	Percentage of Total
	Australia	115	84.6
	New Zealand	19	14.0
	Dual registered	2	1.5
Frequencies of year of graduation of initial physiotherapy qualification by group		Count (135)	Percentage of Total
	1980 to 1989	8	5.9
	1990 to 1999	14	10.4
	2000 to 2009	32	23.7
	2010 to 2019	61	45.2
	2020 to 2023	20	14.8
Frequencies of initial physiotherapy qualification		Count (137)	Percentage of Total
	Diploma	4	2.9
	Bachelor	93	67.9
	Masters	24	17.5
	Doctor of Physiotherapy	16	11.7

\*\*Workforce data were sourced from (Australian Government Department of Health, 2019) National Health Workforce Data Set: Physiotherapy (Australian Government Department of Health, 2019).

**Table 3.** Frequencies of location and primary work settings and specialty areas.

Location of Primary Work Settings <sup>†</sup>	Counts (n = 139)	Percentage of Total (Workforce Data)*
Urban and city	113	81.3 (80.8)
Rural and remote	23	16.5
Both rural and urban	3	2.2
Primary Work Settings <sup>‡</sup>	Counts (n = 200)	Percentage of Total
Private Practice Setting	56	28.0%
Hospital inpatients	50	25.0%
Education	28	14.0%
Hospital outpatients	26	13.0%
Community	19	9.5%
Research	13	6.5%
Telehealth	4	2.0%
Sports setting	3	1.5%
Occupational Health	1	0.5%
Primary specialty/scope of practice areas <sup>‡</sup>	Counts (n = 287)	Percentage of Total
Musculoskeletal	114	41.3 (52.9)
Other	52	18.8 (5.6)
Neurological	51	18.5 (7.2)
Cardiorespiratory	27	9.8 (6.0)
Older Adults	17	6.2 (15.3)
Gender Health	7	2.5 (2.8)
Paediatrics	5	1.8 (5.1)
Sports	3	1.1 (2.7)

\*Workforce data were sourced from (Australian Government Department of Health, 2019) National Health Workforce Data Set: Physiotherapy (Australian Government Department of Health, 2019).

<sup>†</sup>Indicates only one answer could be provided.

<sup>‡</sup>Indicates that more than one answer could be provided.

#Musculoskeletal included orthopedics, persistent pain, hand therapy.

Other included: Education, mental health, research, occupational health, oncology, generalist.

Neurological included: vestibular, rehabilitation.



musculoskeletal (41.3%) which was similar to Australian national data (52.9%) (Australian Government Department of Health, 2019); cardiorespiratory and neurological specialties in the current study were well represented when compared to the national Australian data at 9.8% and 18.5% versus 6.0% and 7.2%, respectively (Australian Government Department of Health, 2019).

### Perceptions of mental health curriculum within initial physiotherapy degree

A total of 133 respondents answered the question specific to their perceptions of the percentage of coursework in their initial physiotherapy degree that was allocated to mental health. The median (IQR) was 9% (2–12%), and the percentage that they perceived that should be allocated to a physiotherapy degree median (IQR) was 30% (20 to 45%). Wilcoxon W test showed a mean difference of 20.0% (95% CI: 17.5 to 22.5) and an effect size, measured by rank biserial correlation, of 1.00, suggesting a strong relationship between the measures. Furthermore, the trend that more coursework should be allocated to mental health is evident when the data is stratified by initial physiotherapy degree level as depicted in Figure 1. A similar trend was evident when the data was stratified by year of graduation across all age groups (Figure 2). Both figures show that all responders, regardless of stratification method, desired more mental health content than what they had received in their coursework.

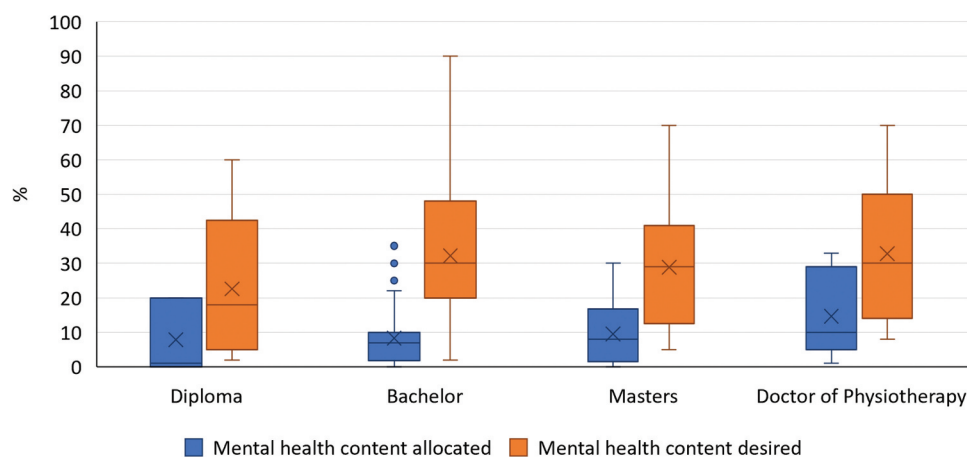
A total of 139 respondents indicated that some type of mental health education was relevant within curriculum. When asked about what specific content was

relevant a total of 472 answers were provided as the question allowed multiple answers. There was a relatively even distribution of frequencies across (a) physiotherapists wanting education on common mental health problems (130/472, 27.5%), (b) physiotherapy scope and roles in mental health (125/472, 26.5%), and (c) physiotherapy treatment for mental health (122/472, 25.8%) with (d) screening for mental health (85/472, 18%) being selected less times than the categories above.

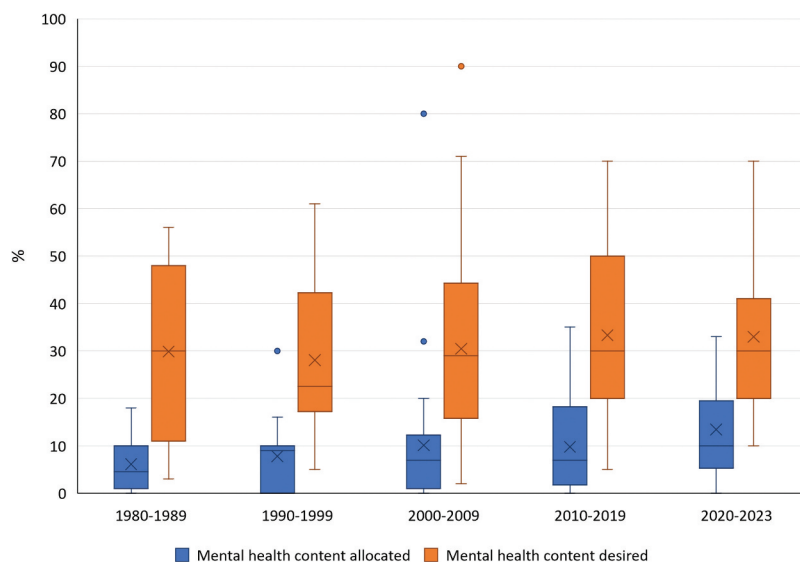
### Perceived knowledge in mental health

A total of 49 out of 139 (35.3%) respondents indicated they had attended a course specific to mental health. Of the 49 respondents, four indicated that they had undertaken two mental health-related courses, totaling 53 attendances to mental health courses. Mental health first aid was the most common course attended (24/53, 45.3%). A significantly higher number of mental health course attendance was found in those who graduated prior to 2010 (63.3%) compared to those who graduated after 2010 (36.7%;  $\chi^2 = 17.35$ ;  $p < 0.001$ ).

Respondents were asked to rate their perceived knowledge of anxiety and depression, specifically what the conditions are, causes, signs and symptoms, and treatments available on a scale from 0–100. Descriptive statistics showed that for the perceived knowledge of anxiety variable ( $n = 138$ ), the mean score was 51.3 (SD = 23.0). For knowledge of depression variable ( $n = 138$ ), the mean score was 49.7 (SD = 23.6). Knowledge of depression and anxiety were significantly correlated with year of graduation ( $r = -0.330$ ,  $p < .001$ ;  $r = -0.294$ ,  $p < .001$ , respectively), where earlier graduates had greater perceived knowledge of anxiety and depression. Those



**Figure 1.** Box plots illustrating perceptions of course work allocated to mental health within an initial physiotherapy degree and the perceived amount that should be allocated stratified by degree level. Means (X), medians (line in boxes), and minimum and maximal values (bottom and top whiskers, respectively) are indicated.



**Figure 2.** Box plots illustrating perceptions of course work allocated to mental health within an initial physiotherapy degree and the perceived amount that should be allocated stratified by year of graduation. Means (X), medians (line in boxes), and minimum and maximal values (bottom and top whiskers, respectively) are indicated.

graduating between 1980 and 2009 compared to those graduating between 2010 and 2023 had significantly higher levels of knowledge for anxiety ( $M = 58.5$ ,  $SD = 22.1$  vs.  $M = 47.2$ ,  $SD = 22.8$ ;  $MD = 11.3$ ,  $p = 0.005$ ,  $ES = 0.5$ ). The same trend was evident for knowledge of depression ( $M = 58.3$ ,  $SD = 23.0$  vs  $M = 44.4$ ,  $SD = 22.8$ ;  $MD = 13.9$ ,  $p < 0.001$ ,  $ES = 0.6$ ).

Both knowledge of anxiety and depression were analyzed across inpatient and outpatient care to determine differences between the groups. The independent samples t-test showed that the mean knowledge of anxiety was 43.5 out of 100 ( $SD = 19.8$ ) for the inpatient care group and 54.9 out of 100 ( $SD = 22.6$ ) for the outpatient care group, indicating a significant difference in perceived knowledge scores ( $MD$  of 11.4,  $p = 0.001$ ,  $ES: 0.5$ ). While the mean knowledge of depression was 41.5 out of 100 ( $SD = 20.8$ ) for the inpatient care group and 53.4 out of 100 ( $SD = 22.6$ ) for the outpatient care group, indicating a statistically significant difference in knowledge scores ( $MD$  of 11.8,  $p = 0.001$ ,  $ES: 0.5$ ) between the two groups. The inpatient group also recorded lower scores compared to the outpatient group ( $M = 25.9$ ,  $SD = 18.5$  versus  $M = 35$ ,  $SD = 17.6$ , respectively) when asked about the amount of mental health education that should be in the curriculum ( $MD = 9.1$ ,  $p = 0.001$ ,  $ES: 0.5$ ).

### Physiotherapy approaches to mental health problems

A total of 138 respondents indicated their perceived underlying framework and approach they used as physiotherapists when treating patients presenting with mental health problems. Respondents were provided

categories with associated definitions for a biomedical approach, biopsychosocial, unsure, or other. A total of 89.9% ( $n = 124$ ) indicated that they provide a biopsychosocial approach, and 5.1% ( $n = 7$ ) a biomedical approach. Respondents were then asked a series of questions related to a simulated case study to analyze various approaches (Figure 3).

### Approaches to catastrophising thoughts

Respondents were asked how they would address catastrophising thoughts that the patient was having toward their shoulder “that it will never recover”. Table 4 presents the results indicating that a total of 137 respondents would address these types of thoughts, with most stating they would talk to the patient ( $n = 115$ , 83.3%). When asked about what psychologically based techniques they would employ, a total of 245 answers were provided as the question allowed multiple answers with the highest frequency being MI techniques to help address the patient’s catastrophising thoughts (32.7%). No respondents indicated that addressing these symptoms was outside the scope of practice, nor did any of the respondents indicate that these symptoms would not influence clinical outcomes.

### Approach to mental health in clinical practice

#### Assessment of anxiety and depression within physiotherapy

When asked how participants assessed signs and symptoms of anxiety and depression, 121 out of 137 respondents indicated they would conduct

Using the case study below as an example, please answer the next four questions in relation to your usual approach in practice.

- 36-year-old male
- Self-employed fisherman
- Difficulty elevating right arm beyond 90 degrees
- Shoulder pain for past 3 months
- Single lives with parents but on waiting list for council house
- No specific social network
- Medical records reveal diagnosed mental health problems of anxiety and depression where he is currently under management by his GP
- The patient is currently experiencing symptoms of anxiety (catastrophising thoughts that his shoulder will never recover)

Figure 3. Simulated case study presented within the survey.

Table 4. Frequency of physiotherapy approaches to catastrophising thoughts.

Physiotherapist approach to catastrophising thoughts†	Count (n = 138)	Percentage of Total
Talk to the patient	115	83.3%
Referral to Allied Health Profession	14	10.1%
Talk to the patient and refer on	8	5.8%
Unsure of what to do	1	0.7%
I would not address these symptoms as it is outside my scope	0	0%
Psychologically based techniques employed by Physiotherapists‡	Count (n = 245)	Percentage of Total
Motivational Interviewing (MI)	80	32.7%
Communicate and reassure	49	20.0%
Cognitive Behavioural Therapy (CBT)	48	19.6%
Mindfulness	44	18.0%
Acceptance and Commitment Therapy (ACT)	21	8.6%
Advice and Education	3	1.2%
Do you believe these symptoms of anxiety will influence clinical outcome‡	Count (n = 138)	Percentage of Total
Yes	132	95.7%
I am not sure	6	4.3%
No	0	0%

†Indicates only one answer could be provided.

‡Indicates that more than one answer could be provided.

some form of assessment. As respondents could select more than one answer a total of 278 answers were provided. Informal assessment (talking to the patient) was considered the most frequent ( $n = 114$ , 41%), followed by asking specific questions related to anxiety and depression ( $n = 55$ , 19.8%). A total of 16 (11.6%) out of 137 respondents indicated that they would not assess symptoms associated with anxiety and depression.

Further sub-analysis of these 16 respondents reported significantly lower perceived knowledge of anxiety ( $M = 40.2$ ,  $SD = 20.7$ ) when compared with the

121 respondents who would conduct some form of assessment ( $M = 52.9$ ,  $SD = 23.0$ ); (MD of 12.7,  $p = 0.038$ , ES: 0.56). A further analysis was conducted on these 16 respondents, revealing a significantly higher proportion worked in an inpatient setting within the group (20% and 7.3%, respectively,  $\chi^2 = 4.00$ ;  $p = 0.05$ ).

In relation to the use of formal outcome measures, a total of 35 out of 137 (25.5%) respondents indicated “yes” and 102 (74.5%) indicated “no”. Differences between inpatient and outpatient care were also reflected. A total of 31 respondents (4 respondents were either research or teaching

focussed) used formal outcome measures, with only 2 (6.5%) respondents classified as inpatient care physiotherapists and 29 (93.5%) respondents classified as outpatient care physiotherapists ( $\chi^2 = 11.1$ ,  $p < 0.001$ ). A total of 21 different outcome measures were reported with the most used outcome measure being the Fear Beliefs Questionnaire ( $n = 16$ , 17.2%), followed by the Depression, Anxiety, and Stress Scale ( $n = 13$ , 14%).

The final part of the survey investigated the use of psychologically based techniques in clinical practice. A total of 124 (91.9%) out of 135 respondents indicated they used some psychologically based technique. The remaining 11 (8.1%) respondents indicated that the primary reason for not using these techniques was due to a lack of knowledge ( $n = 8$ , 72.7%). As illustrated in Table 5, a total of 358 answers were provided specific to psychologically based techniques with the most used technique being MI ( $n = 91$ , 25.4%), followed by Mindfulness ( $n = 76$ , 21.2%). Despite being the most used technique, only 2 respondents indicated they had completed a course specific to MI (see Table 5).

## Discussion

The aims of this study were to profile the level of education and perception of education that physiotherapists have acquired specific to mental health problems, and to provide an understanding of the current practice of physiotherapists specific to mental health problems. The respondents in this study indicated that there is a general perception that further education specific to mental health is needed within Physiotherapy curriculum. This perception was evident regardless of the degree level or year of graduation. Furthermore, respondents indicated that they would use assessment such as talking to the patient and treatment techniques such as MI and mindfulness to help address patients with mental health problems. Those working in inpatient settings appear to have lower perceived knowledge of anxiety and depression and use less

assessments and tools (patient reported outcome measures) than those in the outpatient settings. Physiotherapists graduating before 2010 also reported higher perceived knowledge than those graduating later with respect to anxiety and depression.

### Perceptions of mental health curriculum within initial physiotherapy degree

The respondents as a whole, or when stratified by degree level or year of graduation, all perceived a need for further curriculum to be dedicated to mental health within their initial physiotherapy degree. This finding would be expected given the growth in prevalence of mental health conditions with estimations of a 25% increase in anxiety and depression since the COVID-19 pandemic (World Health Organisation, 2022). Physiotherapists in New Zealand and Australia are first contact practitioners, which increases the likelihood of exposure to patients with mental health problems. No respondents indicated that there should not be curriculum specific to mental health. When asked about the type of curriculum needed there appeared to be an even spread of wanting curriculum based on conditions, physiotherapy scope and treatment techniques. These findings are reinforced by a recent study which explored physiotherapy perceptions toward mental health, and found that physiotherapists believed they were underprepared and had less confidence when implementing psychosocial strategies for patients with anxiety and depression (Ribeiro et al., 2022). Connaughton and Gibson (2016) identified several themes specific to mental illness that graduates wished they had already known; specifically, condition-based knowledge, communication strategies and the fact that the mind and body are not separate. A systematic review by Synnott et al. (2015) demonstrated that physiotherapists perceived that neither their initial training or professional development training provided the necessary skills and confidence to adequately address influencing cognitive, psychological, and social factors. In the

**Table 5.** Psychologically based techniques used in clinical practice.

Psychologically Based Techniques‡	Count ( $n = 358$ )	Percentage of Total	Attendance of specific Mental Health Courses	
			Count ( $n = 53$ )	Percentage of total
Motivational Interviewing (MI)	91	25.4%	2	3.8%
Mindfulness	76	21.2%	-	-
Cognitive Behavioural Therapy (CBT)	52	14.5%	1	1.9%
Self-Talk	54	15.1%	-	-
Mental Imagery	38	10.6%	-	-
Acceptance and Commitment Therapy (ACT)	28	7.8%	2	3.8%
Other*	8	2.2%	48	90.5%
I do not use psychologically based techniques	11	3.1%	-	-

‡Indicates that more than one answer could be provided.

\*Other (inclusive of Neurolinguistic programming, goal setting, trauma informed approaches, psychoeducation, graded exposure, support).

current study, perceptions for more curriculum were evident despite the undergraduate degree taken, however postgraduate entry degrees (Master's or Doctor of Physiotherapy) were associated with a higher perceived amount of mental health curriculum within the initial degree. This may indicate that postgraduate degrees are now placing greater emphasis on mental health curriculum, however, given the heterogeneity of subjects that relate to mental health curriculum between the degrees and between the universities, it is difficult to draw this conclusion. Heaney, Green, Rostron, and Walker (2012) further reinforced this by evaluating psychology curriculum within physiotherapy degrees across 13 institutions within the United Kingdom. The study found that 76% of the institutions used an integrated method of psychological curriculum rather than named modules in psychology and therefore were unable to clearly quantify the amount of psychological content. Given the current study and supporting literature, there is a clear consensus that further education specific to mental health is needed to enable physiotherapists to treat patients confidently and effectively with mental health comorbidities.

### **Perceived knowledge in mental health**

Respondents rated their knowledge of depression and anxiety to be approximately 50 out of 100 which was classified as “moderate knowledge” on the scale used within the survey. Interestingly, these variables were significantly correlated with year of graduation. Perceived knowledge of mental health since graduation increased despite indicating lower amounts of mental health course work in their initial physiotherapy degree. These results are reinforced by a study on Australian Physiotherapists which found a significant positive correlation between years of experience and reported confidence in applying psychosocial strategies (Driver, Lovell, and Oprescu, 2021a).

The earlier graduate cohort (prior to 2010) also had significantly higher proportions of participants attending a mental health course. A potential explanation is that greater clinical experience, more professional development opportunities and increased life experience lead to a greater understanding of anxiety and depression. This finding was supported Ribeiro et al. (2022) who found that increasingly positive perceptions toward mental health was correlated to higher levels of exposure and experience with mental health conditions.

Of note, only 49 out of 139 respondents (35%) had completed a specific mental health course post-graduation. The current study and previous research

suggest that knowledge and positive perception increase over time and with experience, however younger physiotherapists may need additional training to upskill and bridge the knowledge gap in mental health. Unfortunately, apart from mental health first aid training, there are limited mental health courses available associated with the accredited organizations (World Physical Therapy, Australian Physiotherapy Association, and Canadian Physiotherapy Association, Physiotherapy New Zealand). Therefore, it is important that initial physiotherapy degree curriculum specific to mental health is adequate to enable and empower graduates to use psychological informed physiotherapy strategies. Driver, Lovell, and Oprescu (2021b) highlighted that physiotherapists are not psychologists, however, require an ability to identify common psychosocial symptoms such as anxiety and depression. They emphasize that the knowledge required should be suitable for clinical settings, with a focus on recognizing when it is necessary to refer patients to specialists. Driver, Lovell, and Oprescu (2021b) propose a training framework that delivers psychosocial content by experts who are well-versed in both psychosocial factors and the practice of physiotherapy. This includes the ability to assess and manage psychosocial issues, determine what is within their scope of practice, and identify when a referral is needed.

The physiotherapist's scope of practice within mental health problems is complex; boundaries may be established using recognized screening tools that determines the impact of mental health challenges and yellow flags on the patient and their presentation. Tools that assist in determining these boundaries may include the STarT Back Screening Tool, Örebro Musculoskeletal Pain Questionnaire, and the OSPRO-YF (Stearns, Carvalho, Beneciuk, and Lentz, 2021). Stearns, Carvalho, Beneciuk, and Lentz (2021) developed a four-part pathway for establishing clinical boundaries and scope of practice, which can assist in practice. These include: 1) Standard physiotherapy designed for patients with low yellow flags impact and no mental illness symptoms, focusing on self-management and encouraging activity; 2) Psychologically Informed Physiotherapy (PIPT) integrating cognitive behavioral strategies for moderate yellow flags; 3) PIPT with referral to specialist healthcare providers for those with moderate or high yellow flags; 4) Immediate referral is reserved for severe mental illness or suicidal ideologies, necessitating emergency care and communication with other healthcare providers.

Based on inpatient or outpatient care, it appears that outpatient-based physiotherapists have higher perceptions of knowledge specific to anxiety and depression

and perceive that a greater amount of curriculum should be included in the initial physiotherapy degree. This finding is supported by the fact that outpatient physiotherapists are first contact practitioners and therefore are exposed to a wide variety of conditions and comorbidities. Treating musculoskeletal conditions inadvertently exposes the treating physiotherapist to comorbid mental health problems such as anxiety and depression in a variety of commonly treated patients such as workers compensation (Núñez-Cortés et al., 2023), athletes (Furie, Park, and Wong, 2023) and within women's health (Reed, Whittall, Emery, and Osborne, 2023). Inpatient care may often take more of a biomedical approach where patients have attended hospital for a specific condition or procedure. Furthermore, physiotherapists working in hospital settings treat patients following acute illness and trauma, therefore management is focussed on biological systems and ensuring survival as a priority, rather than assessment and treatment of other co-morbidities such as mental health problems. It also needs to be highlighted that not all acute inpatient care is about ensuring survival and inpatient physiotherapists also recognize the comorbid mental health problems across a spectrum of presenting conditions (Heywood et al., 2022). Finally, inpatient care often involves working in a multidisciplinary team which may include a social worker and or psychologist that provide services specific to mental health comorbidities. Expectations for a physiotherapist's role may be more defined and knowledge in anxiety and depression being less relevant in some inpatient settings.

### ***Physiotherapy approaches to catastrophising thoughts***

Interestingly, all respondents indicated they would address catastrophising thoughts, with the majority indicating they would talk to the patient about these thoughts. No respondents indicated that addressing these thoughts was outside of their scope of practice. Additionally, all respondents believed that catastrophising thoughts would affect their physical health, indicating their understanding of the mind body connection. Results showed that almost 90% of respondents indicated their approach followed a biopsychosocial framework, aligning with current practice guidelines (National Institute for Health and Care Excellence, 2021). This also aligns to the work of Connaughton and Gibson (2016) where participants indicated that they wished that they had already known that "you cannot separate the mind and body connection." Landmark studies (Hill et al., 2011; Lamb

et al., 2010) and a more recent one (Murphy, Blake, Power, and Fullen, 2016) have identified this connection. These studies found improved outcomes in pain and disability when addressing psychological needs in combination with physical needs, when compared to addressing physical needs only. In all three studies physiotherapists provided CBT to the participants. It should be noted that the Physiotherapists underwent additional training to conduct this form of psychologically informed physiotherapy. For example, in the study by Lamb et al. (2010), physiotherapists underwent a 2-day course and we also provided additional mentoring if needed. The content within the CBT treatment includes goal setting, pacing, challenging beliefs, and unhelpful thoughts, understanding and managing pain, and improving communication with health professionals (Lamb et al., 2010). CBT may be perceived as a treatment technique outside the scope of a physiotherapist, however the components within the CBT program outlined above, place physiotherapists as a suitable health practitioner to deliver such an intervention.

As outlined above, there are positive outcomes in pain and disability when addressing both physical and psychological needs in chronic conditions (Kent et al., 2023). This current study has shown that the primary reason physiotherapists did not use a psychologically based technique was due to lack of knowledge. This may provide a rationale as to why psychological needs are not consistently addressed within patient care. Physiotherapy curriculum should aim to include these types of interventions, where strategies are taught to students to help challenge unhelpful beliefs and thoughts related to pathology, pain, and activity. Driver, Lovell, and Oprescu (2021b) further confirmed the above with over 50% of physiotherapists preferring strategy specific training on interventions such as; cognitive behavioral approaches, MI, imagery and mindfulness.

It must be noted that while the current study reveals perceived acceptance of the biopsychosocial model, research has shown a lack of understanding when it comes to applying the biopsychosocial model within clinical practice (Mescouto, Olson, Hodges, and Setchell, 2022). A study by Cowell et al. (2018) illustrated that clinicians recognized the importance of the biopsychosocial model, however they had difficulty in managing psychosocial features of pain and concluded further training is needed in this area. Furthermore, there are limitations in the model itself, whereby a patient's pain can be reduced to biological, psychological and social contributors; oversimplifying the complexities of pain and not

recognizing that these overlap and interact. Furthermore, broader social aspects such as cultural, interpersonal and institutional power dynamics have been neglected by researchers (Mescouto, Olson, Hodges, and Setchell, 2022).

### **Physiotherapy approaches to mental health in clinical practice**

All respondents were asked about the use of outcome measures within clinical practice, less than a third use a clinical outcome measure to assess a patient's overall mental health. When further exploring outcome measure use, there were significantly higher proportions of outpatient care physiotherapists using these outcome measures compared to inpatient physiotherapists. This current finding reinforces an increased awareness to further explore mental health contributions when treated by outpatient care physiotherapists. The most used outcome measure was the Fear Belief Questionnaire (FBQ), which assess the patient's beliefs that physical activity influences pain. The high use of the FBQ provides some rationale for this outcome measure to be incorporated in the physiotherapy curriculum.

Over 90% of respondents in this study indicated using psychologically based techniques; the most common being MI followed by Mindfulness. While MI was traditionally used in addiction therapy, it is now being adopted by physiotherapists (McGrane, Galvin, Cusack, and Stokes, 2015; Tse, Vong, and Tang, 2013) and illustrated within the current study. MI provides a method which is facilitated through the clinician allowing the patient to explore and resolve ambivalence and consequently develop behavioral changes (Rollnick and Miller, 1995). As MI uses a range of simple communication strategies (open-ended questioning, affirmations, reflective listening, and summarizing), it is not unexpected that this technique is most widely used within this current sample. The second most frequently used technique was Mindfulness; this approach encourages the patient to be present in the current moment with breathing and relaxation exercises encouraged to facilitate this. Again, there is a clear link between the role of the physiotherapist and the use of these techniques given the influence pain and associated thoughts, beliefs and experiences may have on the sympathetic nervous system stress response (Caneiro, Bunzli, and O'Sullivan, 2021). Mindfulness strategies are applicable to patients presenting to physiotherapy as they aim to downregulate the stress response via the parasympathetic pathway (Jaiswal, Muggleton, Juan, and Liang, 2019).

Although MI and Mindfulness are commonly employed rehabilitation strategies. In response to

attending courses related to mental health, 3.8% reported taking courses on MI, while no participants indicated completing courses on mindfulness. This may be due to lack of physiotherapy specific courses available on psychologically based techniques, as most physiotherapy organizations do not yet offer these topics. This highlights the need to embed psychologically based techniques such as MI, mindfulness, and CBT within current physiotherapy curriculum; advocating for a wider range of courses to be offered by major physiotherapy organizations. Furthermore 11 respondents out of 135 (8%) indicated that they did not apply any type of psychologically based technique due to lack of knowledge. This again aligns with a major theme of the need for further education specific to mental health identified in this and previous studies (Lennon et al., 2020; Ribeiro et al., 2022).

### **Study limitations**

This study has several limitations and caution should be applied when generalizing the results outside of this study population. Firstly, this was not a random sample of physiotherapists, as a purposive recruitment strategy was used to access participants. This adds bias to the results, as physiotherapists who were interested in this topic may have been more likely to respond to the survey advertisement. The research team was also unable to calculate a response rate to the survey, as it was distributed via a range of different modes and mediums. Secondly, this survey asked questions specific to perceptions of mental health curriculum and current knowledge. The actual amount of curriculum is not quantified within this study and would be very difficult to truly conduct as curriculum specific to mental health may be integrated in certain subjects that are not classified as mental health or psychology-related subjects. There also the issue of memory decay, with respondents less likely to accurately recall as time goes on (Jenkins, Earle-Richardson, Slingerland, and May, 2002). Research conducted with physiotherapists specific to implementing evidence-based practice has shown a lack of association between perceptions of knowledge and actual knowledge (Balogun et al., 2021). Given the lack of association and subjectivity within the current study, the perceptions of how physiotherapist approach mental health problems needs to be viewed with caution; however, they still present the current experiences of practicing physiotherapists.

When comparing this current study to national data from Australia the comparison was made against the Australian national data as most respondents (86%) were registered in Australia. The comparison to national Australian data provides moderate evidence of the

similarity between the current sample and its representation within the actual physiotherapy community.

## Conclusion

This study reveals that irrespective of the physiotherapy degree or year of graduation, there is a perception that more coursework related to mental health needs to be included in the physiotherapy curriculum. Higher perceived knowledge of anxiety and depression was evident in outpatient care physiotherapists and those physiotherapists that had graduated prior to 2010. Lack of perceived knowledge appears to be a factor influencing whether an assessment or treatment strategy is used with patients experiencing mental health problems. The most frequently used outcome measure is the FBQ, with MI and mindfulness being the most frequently used psychologically based techniques. This study reveals the need for mental health and psychologically based techniques to be increased within physiotherapy curriculum. There is also a need for the offering of postgraduate courses relevant to mental health and psychologically based techniques for physiotherapists to further equip recent graduates and outpatient care physiotherapists.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

## Funding

This study was approved by the Bond University Human Research Ethics Committee [Approval number: JF01037]

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