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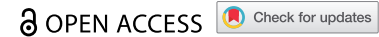


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RESEARCH REPORT



## Australian physiotherapists' perceived frequency of contact with clients experiencing distress: A cross-sectional survey

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### ABSTRACT

**Background:** Previous research suggests physiotherapists' perceived frequency of contact with clients experiencing psychological distress is common; however, there is significant variation in the frequency of such contact.

**Objective:** The study aimed to 1) investigate Australian physiotherapists' perceived frequency of contact with clients experiencing various forms of psychological distress; 2) identify potential factors that predict perceived frequency of contact; and 3) explore physiotherapists' beliefs regarding their role and self-reported capability to identify and assess psychological distress.

**Methods:** A nationwide online survey of 340 Australian physiotherapists was conducted, and the data were analyzed using descriptive analysis and regression analysis.

**Results:** Physiotherapists' perceived frequencies of contact with psychologically distressed and severely distressed clients expressed as proportions of all clients seen each week were 36.1% and 15.6%, respectively. Factors related to the clinical setting were stronger predictors of the perceived frequency of contact (Cohen's  $f^2 = 0.16$ ) than factors related to the physiotherapists themselves (Cohen's  $f^2 = 0.03$ ). Despite believing that identifying psychological distress was within their scope of practice, the physiotherapists in the study felt that assessing and managing this distress fell outside or on the boundary of their scope of practice.

**Conclusion:** Australian physiotherapists frequently encounter clients they perceive to be experiencing psychological distress. Future research into physiotherapists' capability to assess and respond to client psychological distress, using non-self-reported measures, is required.

### ARTICLE HISTORY

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### KEYWORDS

Physiotherapy; psychological distress; mental illness; trauma; suicide



## Introduction


The past 20 years have seen a move toward psychologically informed physiotherapy in many areas of practice such as pain management (Ballengee, Zullig, and George, 2021). Concurrently, the specialty of mental health physiotherapy has continued to develop, as evidenced by an increase in the number of papers published in the field each year (Heywood et al., 2022). Underpinning these developments in physiotherapy practice is the notion that physiotherapists should adopt a whole-person approach to client care and that physical and mental health should not be separated (Australian Physiotherapy Association, 2022; Driver, Lovell, and Opreescu, 2021). However, there is a lack of clarity regarding the role of physiotherapy in supporting people experiencing poor mental health, and while the literature on the topic is growing, it is currently small

compared to other areas of physiotherapy research (Heywood et al., 2022; Ribeiro et al., 2022).

Qualitative research has repeatedly found that physiotherapists experience difficulty supporting people experiencing poor mental health (Andrew et al., 2019; McGrath et al., 2021; Potter, Gordon, and Hamer, 2003). Physiotherapists commonly attribute their lack of confidence in supporting clients experiencing poor mental health to a lack of training in mental health (Ribeiro et al., 2022). The paucity of training in mental health provided to physiotherapists suggests that while a whole-person approach is commonly advocated, in actuality, the capability to identify and address mental health issues is not seen as a priority within the profession.

There are several reasons why mental health training may not be included in physiotherapy curricula, such as the curricula already being "overcrowded" (McMeeken et al.,

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2005). A lack of confidence in supporting people experiencing poor mental health alone appears inadequate to justify prioritizing mental health training over other content. However, there is emerging evidence that physiotherapists often work with clients who have poor mental health (Connaughton and Gibson, 2016a; Lennon et al., 2020; McGrath, Parnell, Verdon, and Pope, 2022b). If physiotherapists frequently encounter clients with poor mental health, then it is important to prioritize mental health training in physiotherapy curricula so that these professionals have the skills and knowledge to effectively support the mental health of their clients and maintain their own wellbeing (Lake, 2022; McGrath, Parnell, Verdon, and Pope, 2022a, 2022b).

The authors identified two cross-sectional surveys of physiotherapists that have investigated physiotherapists' perceived frequencies of contact with clients experiencing poor mental health (Connaughton and Gibson, 2016a; Lennon et al., 2020). Lennon et al. (2020) surveyed Irish physiotherapists finding that 39.6% of the respondents reported contact with clients experiencing psychological distress daily and 80.5% at least weekly. While psychological distress and mental illness are distinct constructs (Drapeau, Marchand, and Beaulieu-Prévost, 2012) a survey of Western Australian physiotherapists regarding their contact with clients with mental illness by Connaughton and Gibson (2016a) reported a similar frequency of contact to that reported by Lennon et al. (2020). Connaughton and Gibson (2016a) found that 41.3% of the respondents ( $n = 31/75$ ) reported contact with clients with a mental illness daily and 76.0% ( $n = 57/75$ ) on at least a weekly basis. While the findings made by Lennon et al. (2020) and Connaughton and Gibson (2016a) are valuable in ascertaining the frequency with which physiotherapists encounter clients experiencing psychological distress and mental illness, respectively, the spread of perceived frequency of contact within each study suggests considerable interpersonal variation. For example, 12 physiotherapists who participated in the study by Connaughton and Gibson (2016a) reported encountering people with a diagnosis of a mental illness once a month or less frequently.

Understanding why some physiotherapists report more frequent contact than others may help identify who may benefit from education regarding mental health and mental ill-health that goes beyond what is currently provided to physiotherapists. Several factors may potentially explain variations in perceived frequency of contact with clients experiencing psychological distress. Clinical sector (i.e. public, private, and charity/not-for-profit sectors) may influence perceived frequency of contact with clients experiencing

psychological distress, as psychological distress is associated with income level (Isaacs, Enticott, Meadows, and Inder, 2018). Clinical area of practice may influence perceived frequency of contact, as the prevalence of psychological distress varies among people with different medical diseases and disease stages (Heikkinen et al., 2019; Naser et al., 2021; Whitney, Peterson, and Warschawsky, 2019). Perceived frequency of contact may also be influenced by factors that impact physiotherapists' identification of psychological distress. There is limited research on the factors that may influence physiotherapists' ability to identify and assess mental health issues. However, studies conducted with medical practitioners suggest that appointment length, clinician compassion, clinician psychosocial orientation to client care, and mental health knowledge may be potential factors influencing clinicians' ability to recognize poor mental health in clients (Diamond et al., 2011; Gouveia et al., 2015; Heneghan et al., 2007; Stirling, Wilson, and McConnachie, 2001).

Considering the work of Lennon et al. (2020) and Connaughton and Gibson (2016a), neither investigated physiotherapists' perceived frequency of contact with clients experiencing suicidal distress, contemplating or engaging in non-suicidal self-injury, or experiencing psychological distress associated with particular life stressors such as sexual assault and abuse. Encounters with clients experiencing suicidal distress, contemplating or engaging in non-suicidal self-injury, and experiencing distress related to sexual assault and abuse are likely to be less frequent than encounters with clients experiencing depression and anxiety (McGrath, Parnell, Verdon, and Pope, 2022a). However, physiotherapists are expected to be able to conduct a preliminary suicide risk assessment (New South Wales Department of Health, 2004) and support clients who have engaged in non-suicidal self-injury (Glasse, 2007) and are often mandatory reporters for child abuse (Nayda and Pridham, 2004). On this basis, the current study had three aims: 1) investigate Australian physiotherapists' perceived frequency of contact with clients experiencing various forms of psychological distress (i.e. diagnosed mental illness and suicidal ideation); 2) explore potential predictors of physiotherapists' perceived frequency of contact with clients experiencing psychological distress; and 3) investigate physiotherapists' self-reported sensitivity to client distress and their beliefs regarding their role, confidence, and competence in the identification and assessment of psychological distress.

Regarding aim one, frequency of contact with clients was defined primarily as the proportion of clients seen each week that were perceived to be experiencing psychological distress. This approach considers variations

in clinical workload that may result from employment status (i.e. full-time versus part-time). In addition, frequency of contact was also assessed in terms of whether that contact was daily, weekly, or less often than weekly. The second approach allowed the findings of this study to be compared with the findings of Lennon et al. (2020) and Connaughton and Gibson (2016a). Regarding aim two, based on the existing literature it was hypothesized that clinical sector, clinical area of practice, length of initial appointment, physiotherapist sensitivity to distress, physiotherapist psychosocial orientation, and training in mental health would predict the number of clients physiotherapists encountered each week who they perceived to be experiencing psychological distress, after adjusting for the total number of clients seen each week.

## Method

### Subjects and Setting

An online questionnaire was used to collect data from currently registered and clinically practicing Australian physiotherapists between July and October 2022. To meet the inclusion criterion of clinically practicing, participants had to be clinically practicing at least part-time. No exclusion criteria were used. A non-probabilistic purposive and snowball sampling strategy was employed, with the main objective to recruit a sample whose characteristics were similar to the target population of registered and clinically practicing Australian physiotherapists. The sampling strategy was operationalized by recruiting participants via the Australian Physiotherapy Association (APA) National Groups' Facebook communication pages, APA electronic newsletters, and targeted LinkedIn paid advertisements. Advertisements promulgated via these platforms provided a link to the survey. To incentivize participation, an incentive prize draw was conducted, which invited participants who had completed the survey to enter the draw for a single AUD \$500 professional development voucher with the APA. Ethical approval for the study was granted by the Human Research Ethics Committee of Charles Sturt University (Protocol Reference H22213).

### Sample size

A sample size of 300 was deemed adequate for the purpose of this study. Although calculations of the precision of population estimates are based on the assumption that the sample is random and the sample in this study was nonrandom, a representative sample involving 300

participants would result in precision of population estimates from descriptive analyses in the vicinity of  $\pm 5.64\%$ , given a population size of 37,414 (Physiotherapy Board of Australia, 2022) and a confidence level of 95%. An a priori power analysis was conducted using G\*Power (Faul, Erdfelder, Lang, and Buchner, 2009) to determine the sample size required for multiple regression analyses. The a priori power analysis indicated that a sample size of 150 would be needed to identify a medium effect size ( $f^2$ ) of 0.15, assuming a statistical power of 0.80, a number of predictors set at 18 and a significance level set at 0.05.

### Survey

The survey (Supplemental Online Material 1) was hosted by SurveyMonkey and consisted of five elements: 1) nineteen demographic and practice-related questions; 2) five questions related to perceived frequency of contact with clients experiencing various forms of psychological distress; 3) six questions related to beliefs regarding scope of practice, confidence in identifying/assessing psychological distress, and self-reported competence in identifying/assessing psychological distress; 4) the modified Physician Belief Scale (mPBS) (McLennan et al., 1999); and 5) the Compassion for Others Scale (Gilbert et al., 2017). These elements are further described below.

Participants were provided with the following definitions of psychological distress and suffering (i.e. severe psychological distress): 1) Psychological distress is a subjective unpleasant emotional state that may be transitory, episodic, or permanent. Psychological distress is often characterized by depressive and anxiety symptoms but may also include a range of other negative emotions such as anger, frustration, grief, rumination, obsession, and feelings of being isolated or vulnerable. Psychological distress exists on a continuum, ranging from low to very high levels of psychological distress. Psychological distress may occur in response to a specific stressor or multiple stressors, or it may emerge in the absence of a stressor. The emotional symptoms of psychological distress may in some instances be the same as symptoms associated with mental disorders such as major depressive disorder, generalized anxiety disorder, and post-traumatic stress disorder; and 2) Suffering is a specific state of psychological distress that occurs when the intactness or integrity of the person is threatened or disrupted. Suffering is generally viewed as a severe state of psychological distress.

The definition of psychological distress was developed after a comprehensive review of the literature (McGrath, Pope, Parnell, and Verdon, 2022) with

input from an experienced mental health researcher (Dr. Jasmine B. MacDonald). The definition of psychological distress was also reviewed by an experienced clinical psychologist and mental health researcher (Associate Professor Gene Hodgins). The importance of broadening our understanding of mental health in physiotherapy practice to encompass both diagnostic and non-diagnostic perspectives is an emerging topic of discussion within the physiotherapy literature (Heywood et al., 2023; McGrath, Shephard, Berrick, Parnell, Verdon, Pope, 2023).

Participants were then asked to report the number of clients they see in a typical week, the number of clients they see in a typical week that they perceived to be experiencing psychological distress, the number of clients they see in a typical week that they perceived to be suffering (i.e. experiencing severe psychological distress) and the number of clients they see in a typical week that they know have a diagnosis of a mental illness. A 7-point Likert scale that ranged from daily (1) to never (7) was used to measure participants' perceived frequency of contact with clients experiencing psychological distress associated with specific negative life stressors (e.g. family violence), the latter drawn from the revised Social Readjustment Rating Scale (Hobson et al., 1998).

The mPBS (McLennan et al., 1999) is a 14-item scale adapted from the Physician Belief Scale (Ashworth, Williamson, and Montano, 1984). It contains two subscales relating to 1) "beliefs and feelings" of healthcare providers toward psychosocial client care and 2) "burden" experienced by healthcare providers when providing psychosocial care. The mPBS uses a 5-point Likert scale that ranges from disagree (1) to agree (5), with lower scores reflective of higher psychosocial orientation in client management. On this scale, a composite score of 70 indicates the lowest level of psychosocial orientation and a composite score of 14 indicates the highest level of psychosocial orientation. Reliability analyses revealed that the beliefs and feelings subscale ( $\alpha = 0.75$ ) and the burden subscale ( $\alpha = 0.79$ ) demonstrated acceptable internal consistency, while the full mPBS ( $\alpha = 0.85$ ) demonstrated good internal consistency (George and Mallery, 2003). Permission to use the mPBS was obtained from the authors.

In this study, only the Compassion for Others Scale from the Compassionate Engagement and Action Scales (Gilbert et al., 2017) was used. The Compassion for Others Scale is a 10-item scale that contains two subscales: 1) engagement and 2) actions. The Compassion for Others Scale uses a 10-point Likert scale, which ranges from never (1) to always (10), with higher scores reflective of higher levels of compassion for others.

A composite score of 100 indicates the highest self-rated level of compassion for others, and a composite score of 10 indicates the lowest self-rated level of compassion for others. Reliability analyses revealed that the engagement subscale ( $\alpha = 0.71$ ) and the action subscale ( $\alpha = 0.75$ ) demonstrated acceptable internal consistency, while the full compassion for others scale ( $\alpha = 0.81$ ) demonstrated good internal consistency (George and Mallery, 2003). Permission to use the Compassion for Others Scale was obtained from the authors.

### Data Analysis

Due to the various recruitment methods utilized, complete response rates for the survey could not be calculated as it was not known how many physiotherapists viewed the advertisement on the APA National Groups' Facebook communication pages, the APA electronic newsletters, or the targeted LinkedIn paid advertisements using the "sponsored content" method. The partial response rate was calculated by dividing the number of visits to the survey from LinkedIn sponsored messages by the number of views of those messages. The completion rate was calculated by dividing the number of people who answered questions 17, 18, and 20 by the total number of clicks on the survey link from all recruitment methods. Both rates are reported in the results section.

Descriptive statistics were calculated for all items, and average composite scores of the multi-item scales were calculated. Measures of perceived frequency of contact were calculated in two ways. The first being the proportion of clients seen each week who were perceived to be experiencing psychological distress, severe psychological distress, and mental illness. In addition, to allow a crude comparison between perceived frequencies of contact of physiotherapists with clients experiencing psychological distress and clients diagnosed with a mental illness reported in this study with frequencies reported elsewhere in the literature, on an ordinal scale (daily, weekly, less often than weekly), a second measure derived from the following calculation was performed:

$X = A/B$  C: If  $X \geq 1$  then daily contact; If  $X \geq 0.2$  but  $< 1$  then weekly contact; and If  $X < 0.2$  then less often than weekly contact

Where: A = Number of clients a participant encountered per week who they perceived to be experiencing psychological distress, severe psychological distress or mental illness; B = Clinical hours worked per week by the participant; and C = Length of standardized workday. Note that perceived frequency of contact expressed as "daily," "weekly," or "less often than weekly" was

calculated in relation to standard full-time employment hours of 38 h per week, incorporating estimated 32.9 clinical hours worked each week (Australian Government Department of Health, 2019).

A series of hierarchical regression analyses were conducted to explore relationships between the hypothesized predictor variables (Table 1) and the criterion, which was number of clients encountered each week perceived to be experiencing psychological distress. A simple linear regression was first conducted to explore the relationship between the single predictor “number of clients seen each week” and the criterion. Afterward, a series of hierarchical regressions were completed with the number of clients seen each week entered first as a control variable as per the recommendation of Field, Miles, and Field (2012). Multi-level categorical predictor variables were dummy coded so they could be examined using regression. Due to the Emergency Department ( $n = 5$ ), Mental Health ( $n = 2$ ), and Cancer, Palliative Care and Lymphedema ( $n = 7$ ) categories of predominant area of practice having less than 10 cases each, as per convention (Hollestein et al., 2021) they were combined with the “other” category for the purposes of the regression analysis.

Prior to interpreting the results of the regression analyses, assumptions of normality, linearity, and homoscedasticity were assessed based on visual inspection of the histogram of standardized residuals, residual scatterplot, and the normal probability plot for the criterion. The assumption of normality of residuals was violated; however, the violation appeared to be mild. Regression analyses are fairly robust to violations of the normality assumption with the impact often being mild or even negligible (Gelman and Hill, 2007; Knief and Forstmeier, 2021; Meuleman, Loosveldt, and Emonds, 2014). Therefore, the non-transformed criterion was utilized in the analysis as the results are more easily understood by readers.

For hierarchical regression analyses, the assumption of singularity was met as each predictor was not a combination of other predictors. Examination of zero-order correlations revealed statistically significant weak

and moderate correlations among predictor variables (Schober, Boer, and Schwarte, 2018). Although there was some correlation between predictors, collinearity statistics (i.e. variance inflation factor and tolerance) did not suggest that multicollinearity was present (Hair, Hult, Ringle, and Sarstedt, 2017). Cook’s distance (Cook, 1986) with a cutoff point of 1.0 was used to identify influential multivariate outliers and a cutoff point of 0.5 was used to identify high leverage points (Neter, Kutner, Nachtsheim, and Wasserman, 1996; Stevens, 2009). No influential multivariate outliers or high leverage points in any of the regression analyses were identified using this approach.

## Results

### Demographics

A total of 441 registered and practicing Australian physiotherapists began the survey, and the final sample included 340 physiotherapists after responses with missing or invalid data related to perceptions of frequency of contact with clients experiencing psychological distress (i.e. invalid because the data were out of range) were removed. The response rate to the targeted LinkedIn sponsored messaging advert was 6.0% (95 survey link visits out of 1,564 advert views) and the completion rate of question 17, 18 and 20 was 77.1% (340 people out of 441 survey visits). Of the 340 surveys included in the analysis, 318 respondents completed the entire survey. Descriptive statistics for all survey items are reported in Supplemental Online Material 2. The mean age of participants was 40.6 years (range = 22–73 years,  $SD = 11.3$ ), and the mean years of experience were 16.2 (range = 1–52 years,  $SD = 11.7$ ). The mean age and years of experience of physiotherapists in the current survey sample were marginally higher than those of Australian physiotherapists overall, cited in national data (mean age = 38 years, mean experience = 13.4 years) (Australian Government Department of Health, 2019). Comparison of the survey sample and the underlying population of Australian physiotherapists revealed

**Table 1.** Predictor variables.

Variable	Type	Dummy coded reference category
Number of clients seen per week	Continuous variable	N/A
Clinical sector	Multi-level categorical variable	Private sector
Clinical area of practice	Multi-level categorical variable	Sports and exercise
Typical length of initial client assessment	Continuous variable	N/A
Total score on the Compassion for Others Scale	Continuous variable	N/A
Total score on the mPBS	Continuous variable	N/A
MHFA and/or crisis intervention training	Dichotomous categorical variable	No MHFA or crisis intervention training

Number of clients seen per week is the control variable. Mental Health First Aid® (MHFA) is a common psychological first aid training program in Australia. While MHFA is used in text due to the ubiquity of the course in Australia, the variable also captured respondents who had completed ‘similar’ courses. mPBS = modified Physician Belief Scale. N/A = not applicable.

a higher female-to-male ratio (4.4:1) in the survey sample than the underlying population (1.8:1), as well as an underrepresentation of physiotherapists working in private practice and physiotherapists working predominantly in the area of musculoskeletal physiotherapy in the survey sample. Further demographic data of the respondents are presented in Table 2 alongside national data describing the overall population of Australian physiotherapists (Australian Government Department of Health, 2019; Physiotherapy Board of Australia, 2022).

### Frequency of contact with clients perceived to be experiencing psychological distress

On average, respondents reported encountering a mean of 10.8 ( $SD = 11.4$ ) and a mean of 4.3 ( $SD = 26.9$ ) clients per week who they perceived to be experiencing

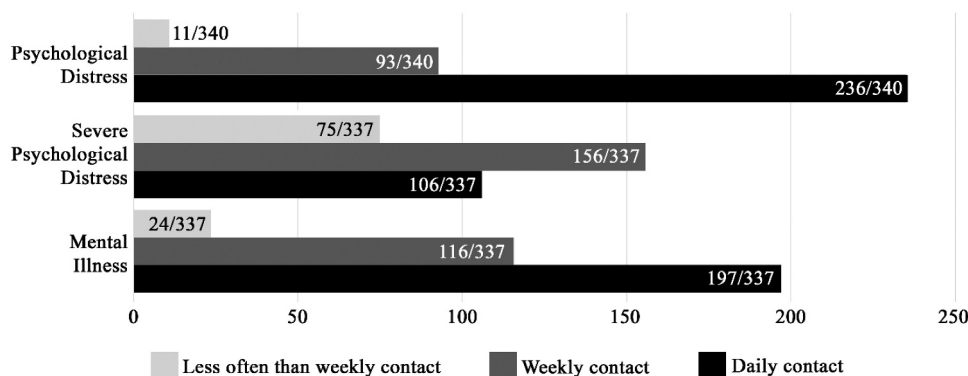
psychological distress and severe psychological distress, respectively. In terms of clients who they were aware had a diagnosis of a mental illness, on average, respondents reported encountering a mean of 8.4 ( $SD = 8.8$ ) such clients per week. Figure 1 shows the proportions of physiotherapists who reported daily, weekly, or less frequent contact with clients they perceived to be experiencing psychological distress or knew to have been diagnosed with a mental illness.

When expressed as mean proportions of total clients encountered each week, the average self-reported frequency of contact of physiotherapists with clients they perceived to be experiencing psychological distress or severe psychological distress was 36.1% ( $SD = 26.9\%$ ) and 15.6% ( $SD = 19.2\%$ ) of clients, respectively. The mean proportion of clients seen each week that physiotherapists were aware had a diagnosis of mental illness was 27.7% ( $SD = 22.4\%$ ) of clients.

**Table 2.** Participant demographics versus underlying Australian physiotherapist population characteristics.

Characteristic	Survey participants		National data (Australian physiotherapists)	
	n	%	n	%
Gender				
Female	274	80.6	24,041	64.3
Male	63	18.5	13,373	35.7
Non-binary	1	0.3	N/A	N/A
Prefer not to answer	1	0.3	N/A	N/A
Missing	1	0.3	N/A	N/A
Total	340	100.0	37,414	100.0
Principal scope of practice				
Musculoskeletal/Orthopaedic/Pain	123	36.2	15,610	52.9
Musculoskeletal	97	28.5	N/A	N/A
Orthopaedic	10	2.9	N/A	N/A
Pain	16	4.7	N/A	N/A
Women's, Men's and Pelvic Health	40	11.8	815	2.8
Gerontology	33	9.7	4,508	15.3
Neurological	32	9.4	2,118	7.2
Pediatrics	31	9.1	1,511	5.1
Disability	20	5.9	N/A	N/A
Cardiorespiratory	13	3.8	1,757	6.0
Sports and Exercise	12	3.5	796	2.7
Cancer, Palliative Care and Lymphedema	7	2.1	N/A	N/A
Emergency Department	5	1.5	N/A	N/A
Mental Health	2	0.6	N/A	N/A
Other	22	6.5	1,640	5.6
Missing	0	0.0	753	2.6
Total	340	100.0	29,508	100.0
Main employment sector based on clinical FTE hours				
Private sector (for profit)	194	57.6	16,997	72.0%
Public sector	84	24.8	6,622	28.0%
Charity or not for profit	27	6.9	N/A	N/A
Works across multiple sectors	35	10.8	N/A	N/A
Total	340	100.0	23,618	100.0%
State				
New South Wales	117	34.4	8,856	30.0
Victoria	80	23.5	7,585	25.7
Queensland	64	18.8	5,834	19.8
South Australia	26	7.6	2,470	8.4
Western Australia	34	10.0	3,468	11.8
Tasmania	10	2.9	491	1.7
Australia Capital Territory	5	1.5	609	2.1
Northern Territory	2	0.6	184	0.6
Missing	2	0.6	11	0.0
Total	340	100.0	29,508	100.0

N/A = not available.



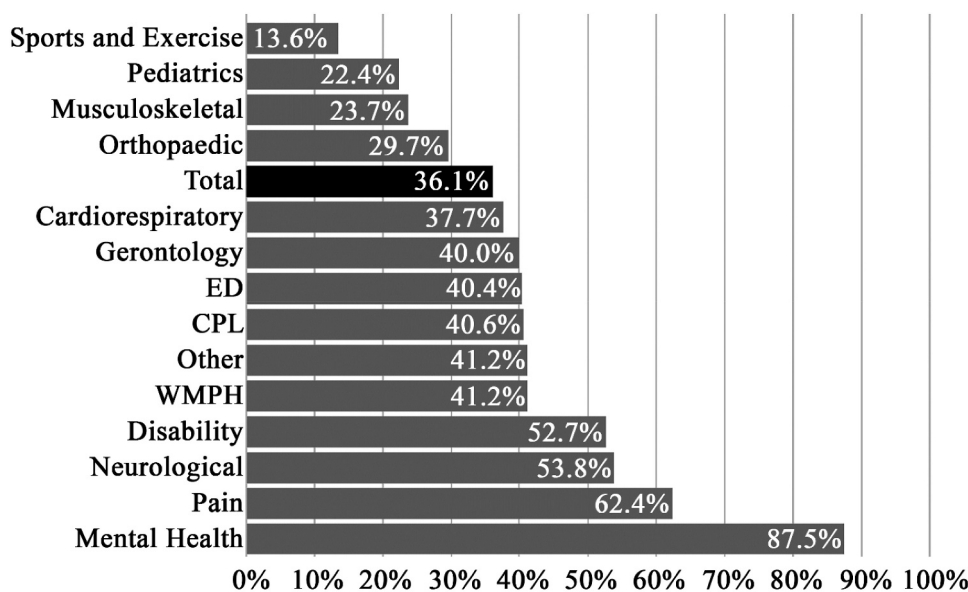
**Figure 1.** Proportions of physiotherapists who reported daily, weekly or less than weekly contact with clients experiencing psychological distress, severe psychological distress, and mental illness.

Respondents working in the charity or not-for-profit sector reported the highest proportion of clients perceived to be experiencing psychological distress (45.1%, *SD* = 5.8%, *n* = 27). The proportions of clients perceived to be experiencing psychological distress were as follows: 42.6% (*SD* = 3.0%, *n* = 84) for the public sector; 31.0% (*SD* = 1.8%, *n* = 194) for the private (for profit) sector; and 41.3% (*SD* = 4.7%, *n* = 35) for respondents working across multiple sectors. For details regarding proportions of clients perceived to be experiencing severe psychological distress or known to have a diagnosis of mental illness, organized by the sector, see Supplementary Online Document 2, Table 34.

The two respondents who predominantly practiced in mental health reported the highest mean proportion of clients perceived to be experiencing psychological distress (87.5%, *SD* = 12.5%). The area of practice with

the second highest mean proportion of clients perceived to be experiencing psychological distress was pain management (62.4%, *SD* = 6.1%, *n* = 16). The areas of practice with the lowest and second lowest proportions of clients perceived to be experiencing psychological distress were sports and exercise (13.6%, *SD* = 3.0%, *n* = 12) and pediatrics (22.4%, *SD* = 3.6% *n* = 31). The proportions of clients perceived to be experiencing psychological distress are reported in Figure 2 for all areas of practice, with further details, such as proportions of clients perceived to be experiencing severe psychological distress, or known to have a diagnosed mental illness, reported in Supplementary Online Document 2, Table 35.

Table 3 reports perceived frequencies of contact of physiotherapists with clients experiencing thoughts related to self-harm and suicide, or engaging in non-



**Figure 2.** Proportions of clients seen each week perceived to be experiencing psychological distress, according to predominant area of physiotherapy practice. ED = Emergency Department; CPL = Cancer, Palliative Care and Lymphedema; WMPH = Women’s, Men’s and Pelvic Health.



**Table 3.** Physiotherapists' frequencies of contact with clients they perceived to be experiencing thoughts related to self-harm and suicide, or engaging in non-suicidal self-injury/suicidal behaviors.

	N	Daily		Weekly		Monthly		A few times a year		About once a year		Less often than yearly		Never	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%
Suspected engagement in self-harm	337	3	0.9%	15	4.5%	39	11.6%	<b>118</b>	<b>35.0%</b>	60	17.8%	71	21.1%	31	9.2%
Disclosed active self-harming	336	1	0.3%	8	2.4%	19	5.7%	57	17.0%	62	18.5%	<b>112</b>	<b>33.3%</b>	77	22.9%
Disclosed feelings of hopelessness, helplessness and/or social isolation/disconnectedness	338	41	12.1%	<b>110</b>	<b>32.5%</b>	100	29.6%	60	17.8%	16	4.7%	7	2.1%	4	1.2%
Suspected of having suicidal thoughts	336	4	1.2%	34	10.1%	46	13.7%	<b>105</b>	<b>31.3%</b>	47	14.0%	71	21.1%	29	8.6%
Disclosed suicidal thoughts	336	3	0.9%	10	3.0%	29	8.6%	60	17.9%	73	21.7%	<b>86</b>	<b>25.6%</b>	75	22.3%
Disclosed a plan for suicide	336	1	0.3%	0	0.0%	8	2.4%	18	5.4%	48	14.3%	91	27.1%	<b>170</b>	<b>50.6%</b>

The modal response for each thought/behavior is bolded.

suicidal self-injury or suicidal behaviors, expressed as daily, weekly, monthly, a few times a year, about once a year, less often than yearly, or never. There were 235 respondents (69.7%) who reported encountering a client they suspected of engaging in self-harm at least once a year, and 147 respondents (43.8%) reported having at least one client each year who disclosed active self-harm. In terms of perceived frequencies of contact of physiotherapists with clients with suicidal thoughts and behaviors, 175 respondents (52.1%) reported encountering at least one client each year who disclosed suicidal thoughts, and 75 respondents (22.3%) reported encountering at least yearly a client disclosing a plan for suicide. There were 166 respondents (49.4%) who reported having had at least one client disclose a plan for suicide, during their career.

Table 4 reports perceived frequency of contact with clients experiencing psychological distress perceived to be, at least in part, related to specific life stressors. The three most common client life stressors leading to client

psychological distress reported to have been encountered across the respondents' careers were as follows: "major injury/illness to self" (332/337); "experiencing financial problems/difficulties" (321/336); and "death of close family member" (320/337). The three least commonly encountered client life stressors were as follows: "detention in jail or other institution" (158/338); "surviving a disaster" (233/338); and "being a victim of crime" (264/338).

### Predictors of frequency of Contact

Table 5 reports the full results of the regression models explored in this study, with standardized beta values reported in the table. The control variable, "number of clients seen each week" accounted for 25.7% of the variance in the criterion "number of clients encountered each week perceived to be experiencing psychological distress"  $F(1, 338) = 117.1, p < .001$ . With all predictors entered into the analysis, the final model (model 10) accounted for 41.3% of the variance in the criterion,

**Table 4.** Physiotherapists' frequencies of contact with clients they perceived to be experiencing psychological distress related to specific life stressors.

Life Stressor*	n	Daily		Weekly		Monthly		A few times a year		About once a year		Less often than yearly		Never	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%
Death of spouse/partner	337	6	1.8%	24	7.1%	48	14.2%	<b>128</b>	<b>38.0%</b>	40	11.9%	62	18.4%	29	8.6%
Death of close family member	338	3	0.9%	16	4.7%	49	14.5%	<b>154</b>	<b>45.6%</b>	44	13.0%	54	16.0%	18	5.3%
Major injury/illness to self	337	39	11.6%	<b>93</b>	<b>27.6%</b>	75	22.3%	75	22.3%	19	5.6%	21	6.2%	15	4.5%
Detention in jail or other institution	338	1	0.3%	3	0.9%	12	3.6%	18	5.3%	23	6.8%	101	29.9%	<b>180</b>	<b>53.3%</b>
Major injury/illness to close family member	335	8	2.4%	38	11.3%	74	22.1%	<b>116</b>	<b>34.6%</b>	37	11.0%	41	12.2%	21	6.3%
Experiencing financial problems/difficulties	336	25	7.4%	63	18.8%	89	26.5%	<b>94</b>	<b>28.0%</b>	22	6.5%	28	8.3%	15	4.5%
Separation/divorce from a spouse/partner	338	4	1.2%	32	9.5%	67	19.8%	<b>109</b>	<b>32.2%</b>	40	11.8%	59	17.5%	27	8.0%
Being a victim of crime	338	1	0.3%	13	3.8%	29	8.6%	66	19.5%	59	17.5%	<b>96</b>	<b>28.4%</b>	74	21.9%
Experiencing domestic violence/sexual abuse	337	3	0.9%	17	5.0%	28	8.3%	88	26.1%	53	15.7%	<b>91</b>	<b>27.0%</b>	57	16.9%
Being fired/laid-off/unemployed	337	4	1.2%	21	6.2%	39	11.6%	<b>117</b>	<b>34.7%</b>	43	12.8%	57	16.9%	56	16.6%
Surviving a disaster	338	2	0.6%	10	3.0%	11	3.3%	59	17.5%	37	10.9%	<b>114</b>	<b>33.7%</b>	105	31.1%
Becoming a single parent	337	5	1.5%	10	3.0%	37	11.0%	<b>86</b>	<b>25.5%</b>	50	14.8%	77	22.8%	72	21.4%
Assuming carer responsibility for sick or elderly loved one	337	13	3.9%	41	12.2%	90	26.7%	<b>99</b>	<b>29.4%</b>	29	8.6%	30	8.9%	35	10.4%

The modal response for frequency of contact of physiotherapists with clients experiencing psychological distress due to each life stressor is bolded.

**Table 5.** Regression analyses assessing relationships between specific predictor variables, the control and the criterion.

Predictors	Model 1 ( $\beta$ )	Model 2 ( $\beta$ )	Model 3 ( $\beta$ )	Model 4 ( $\beta$ )	Model 5 ( $\beta$ )	Model 6 ( $\beta$ )	Model 7 ( $\beta$ )	Model 8 ( $\beta$ )	Model 9 ( $\beta$ )	Model 10 ( $\beta$ )
Model 1 (Control)										
Number of clients seen each week	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.6	0.5	0.6
Model 2										
Public sector		0.1						0.1		0.1
Not-for-profit and charity		0.1						0.0		0.0
Multiple sectors		0.1						0.1		0.1
Model 3										
Musculoskeletal			0.2					0.2		0.1
Gerontology			0.3					0.2		0.2
Neurological			0.3					0.3		0.2
Cardiorespiratory			0.2					0.1		0.1
Pediatrics			0.2					0.1		0.1
Women's, Men's and Pelvic Health			0.3					0.3		0.3
Pain			0.3					0.3		0.3
Disability			0.2					0.2		0.2
Orthopaedic			0.1					0.1		0.1
Other			0.3					0.2		0.2
Model 4										
Typical length of initial client assessment				0.2				0.1		0.1
Model 5										
Compassion for Other Scale score					0.1				0.1	0.1
Model 6										
Modified Physician Belief Scale						-0.1			0.0	0.0
Model 7										
Mental Health First Aid® and/or crisis intervention training							0.1		0.1	0.1
<i>F</i>	117.1	33.7	18.0	72.6	62.3	59.1	59.9	14.7	31.3	11.3
<i>df</i>	1, 338	4, 335	11, 328	2, 331	2, 315	2, 324	2, 335	15, 320	4, 307	18, 290
$\Delta R^2$	N/A	0.03	0.12	0.03	0.02	0.00	0.01	0.14	0.03	0.14
Cohen's $f^2$ after controlling for number of clients	N/A	0.03	0.13	0.04	0.02	0.00	0.01	0.16	0.03	0.17
$R^2$	0.26	0.29	0.38	0.30	0.28	0.27	0.26	0.41	0.29	0.41
<i>p</i>	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
Cohen's $f^2$	0.35	0.40	0.60	0.44	0.40	0.36	0.36	0.69	0.41	0.70

The criterion was number of clients encountered each week who were perceived by the physiotherapist respondent to be experiencing psychological distress.  $\beta$  refers to standardized beta values.  $\Delta R^2$  represents the contribution to  $R^2$  of predictors entered after the control in that particular model.  $\Delta R^2$  may not equal the difference between  $R^2$  in model 1 and  $R^2$  in other models as  $\Delta R^2$  is calculated based on cases included in that specific model. N/A = not applicable.

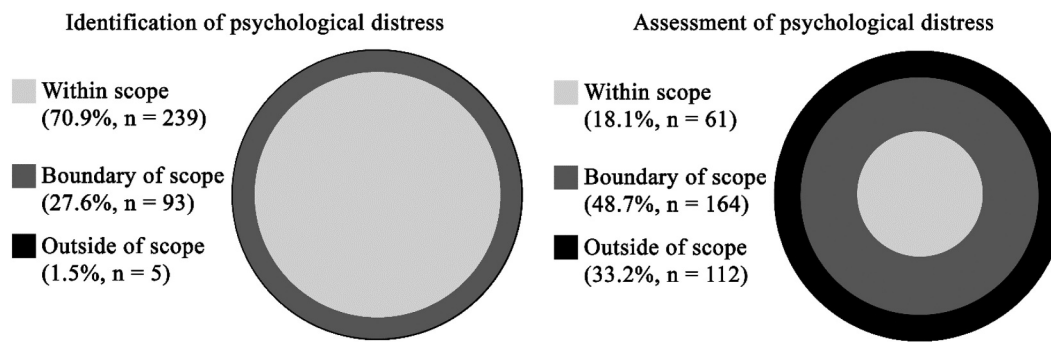
$F(18, 290) = 11.3, p < .001$ . In the final model, the predictors entered simultaneously after the control accounted for an increase of  $R^2$  of .14,  $F(17, 290) = 4.2, p < .001$ . According to Cohen (1988) the effect size of setting and context-related predictors after controlling for number of clients seen each week (model 8) was medium (Cohen's  $f^2 = 0.16$ ), while the effect size of the clinician-related predictors after controlling for number of clients seen each week (model 9) was small (Cohen's  $f^2 = 0.03$ ). After controlling for the number of clients seen each week, the single predictor with the largest effect size was the predominant area of practice (Cohen's  $f^2 = 0.13$ ).

#### **Attitudes and beliefs regarding identification and assessment of client psychological distress**

On average, the respondents scored 79.2 out of 100 ( $SD = 9.5$ , range = 51 to 99) on the Compassion for Others Scale. Mean respondent composite scores for the engagement and actions subscales of the Compassion for Others Scale were 47.0 ( $SD = 6.4$ ) and 32.2 ( $SD = 4.3$ ), respectively. The mean score

for the modified PBS was 28.2 out of 70 ( $SD = 8.6$ , range = 14 to 55). Mean composite scores of 14.5 ( $SD = 4.5$ ) and 13.7 ( $SD = 5.1$ ) were calculated for the "belief and feeling," and "burden" subscales of the modified PBS, respectively.

Figure 3 reports respondents' beliefs regarding whether identification and assessment of psychological distress is within, on the boundary, or outside the scope of physiotherapy practice. With regard to confidence in identifying psychological distress: 1.2% (4/337) were not at all confident; 9.8% (33/337) were not so confident; 45.1% (152/337) were somewhat confident; 37.7% (127/337) were quite confident; and 6.2% (21/337) were extremely confident. Participant self-assessments of their competence as hypothetically rated by a mental health professional in identifying psychological distress were that they: need to be taught this (5.9%, 20/337); can do with help (27.0%, 91/337); can do (48.7%, 164/337); can do this with ease (16.0%, 54/337); or can do and can teach this to others (2.4%, 8/337). In total, 20.2% (68/337) were not at all confident; 42.7% (144/337) were not so confident; 28.5% (96/337) were somewhat confident; 7.7% (26/337) were quite confident; and 0.9% (3/337)



**Figure 3.** Physiotherapists' beliefs regarding where identification and assessment of psychological distress sit in relation to their scope of practice.

were extremely confident in assessing clients experiencing psychological distress. Participant self-assessments of their competence as hypothetically rated by a mental health professional in assessing psychological distress were that they: need to be taught this (38.9%, 131/337); can do with help (40.1%, 135/337); can do (16.6%, 65/337); can do this with ease (3.9%, 13/337); or can do and can teach this to others (0.6%, 2/337).

## Discussion

This study is the first to explore Australian physiotherapists' frequency of contact with clients they perceived to be experiencing psychological distress, the factors that may predict this frequency, and physiotherapists' beliefs regarding their role and self-reported capability in identifying and assessing psychological distress. The study found that physiotherapists in the study frequently encountered clients they perceived to be experiencing psychological distress, with approximately every third patient encountered perceived to be experiencing psychological distress. While the frequency of contact with clients experiencing psychological distress was expressed in terms of daily, weekly, or less than weekly contact, the majority of physiotherapists (236/340) reported daily contact. Clinical area of practice was the largest predictor of perceived frequency of contact with clients experiencing psychological distress. The physiotherapists in the study generally reported that it was within their scope of practice to identify psychological distress, but that assessment of distress was on the boundary or outside of their scope of practice. They also reported greater confidence and competence in identification than in assessment of psychological distress.

## Frequency of contact with clients experiencing psychological distress

The Australian physiotherapists in this study reported a higher frequency of contact with clients experiencing psychological distress than the Irish physiotherapists in a previous study by Lennon et al. (2020). Specifically, 69.4% of the respondents in this study reported daily contact, compared to 39.6% in the previous study. Additionally, a larger proportion of physiotherapists in this study reported weekly or more frequent contact with such clients (96.8%) compared to the physiotherapists in the study reported by Lennon et al. (2020) (80.5%). There may be several reasons for the higher perceived frequency of contact with clients experiencing psychological distress reported by physiotherapists in this study. First, the perceived frequency of contact in this study was standardized based on full-time equivalent clinical employment, while the study by Lennon et al. (2020) did not account for part-time employment. Second, the current study was conducted during the COVID-19 pandemic in Australia in 2022, while the study by Lennon et al. (2020) was conducted in 2018. The increased prevalence of psychological distress among the Australian public during the pandemic may have contributed to the higher perceived frequency of contact reported in this study (Australian Institute of Health and Welfare, 2022).

While the frequency of contact of physiotherapists with clients experiencing psychological distress expressed as daily, weekly, or less often than weekly contact in this study was higher than in the previous study by Lennon et al. (2020), the proportions of clients seen each week that were perceived by physiotherapists to be experiencing psychological distress or severe psychological distress (36.1% and 15.6%, respectively) were similar to the prevalence rates of psychological distress observed in the general Australian population.

According to the Australian Bureau of Statistics (2022) around 36.6% of Australians aged 16–85 reported experiencing moderate or higher levels of psychological distress in the past 30 days, and 15.4% reported experiencing high or very high levels of distress. This suggests that physiotherapists' reports of the proportions of clients they perceived to be experiencing psychological distress may be fairly accurate. However, given the relationship between poor physical health and psychological distress (Gadalla, 2009) it could be argued physiotherapists are likely to encounter higher proportions of clients experiencing psychological distress than the proportions reflected in the prevalence rate of psychological distress in the general population as a whole. Henstock and Carruthers (2017) posited that “patients attending physiotherapy will be in some degree of distress about their symptoms and prognosis, but this may extend into significant anxiety, depression and/or grief.” People experiencing musculoskeletal pain and physical disability often report at least some level of distress, which is expected given distress is a normal emotional response to these health issues (Amin et al., 2018; Barke, Koechlin, Korwisi, and Locher, 2020; Coutu et al., 2007; Cree, Okoro, Zack, and Carbone, 2020; Stilwell et al., 2022). Furthermore, even mild forms of psychological distress can have a significant impact on quality of life and disability and are worthy of attention (Naber and Bullinger, 2018; Rai et al., 2012).

The perceived proportions of clients perceived by physiotherapists to be experiencing psychological distress and severe psychological distress were consistent with the findings of McGrath, Parnell, Verdon, and Pope (2022a, 2022b) who found in their qualitative study that physiotherapists reported contact with clients they perceived to be experiencing psychological distress was “common” and that the level of psychological distress in clients appeared to physiotherapists to range from minor to severe. As previously mentioned, distress is a normal emotional response to physical health issues. Considering the definition of psychological distress provided and the qualitative findings of McGrath, Parnell, Verdon, and Pope (2022a, 2022b) it is likely that the instances of contact with clients perceived to be experiencing psychological distress reported by physiotherapists in this study include encounters in which the intensity of distress was quite mild, such as frustration related to prolonged recovery (Carroll et al., 2011; Turner, Malliaras, Goulis, and McAuliffe, 2020). However, the notable proportion of clients perceived to be experiencing severe psychological distress and respondents' frequency of encounters with clients they suspected to be experiencing suicidal ideation strongly suggests that the instances of perceived psychological

distress reported in this study also reflect the entire spectrum of psychological distress. McGrath, Parnell, Verdon, and Pope (2022a, 2022b) also reported that physiotherapists perceived client psychological distress to be varied with regard to the circumstances in which the distress emerged. The current study found that most respondents had encountered a client experiencing psychological distress related, at least in part, to 10 of the 13 types of stressors drawn from the revised Social Readjustment Rating Scale (Hobson et al., 1998). For example, over half of respondents (56.1%) reported encountering a client experiencing psychological distress related to domestic violence/sexual abuse at least once a year. This finding is consistent with the idea that physiotherapists are likely to encounter clients with a history of sexual trauma, given the high prevalence of sexual harassment and assault among women and that survivors of sexual assault are more likely to experience pelvic floor complaints, which are health conditions that many physiotherapists treat, than those who are not (Stirling, Chalmers, and Chipchase, 2021).

### **Contact with clients contemplating or engaging in non-suicidal self-harm and suicidal behaviors**

Approximately three-quarters of the survey respondents reported that, at some point in their careers, a client had disclosed engaging in non-suicidal self-injury, and about the same proportion reported that a client had disclosed suicidal thoughts to them. In a separate survey, 69.9% of Dutch health and community professionals reported encountering clients with suicidal thoughts and behaviors at least a few times a year (Scheerder, Reynders, Andriessen, and Van Audenhove, 2010). 56.3% of the physiotherapist respondents in this survey reported encountering clients they suspected of having suicidal thoughts at least a few times a year, and 30.4% reported encountering clients who had disclosed suicidal thoughts at least a few times a year. The study by Scheerder, Reynders, Andriessen, and Van Audenhove (2010) included mental health professionals such as community mental health staff and psychology students among their participants. The high frequency of contact among physiotherapists with clients experiencing suicidal thoughts and behaviors may be surprising to some readers given the profession is typically associated with physical health care. However, considering the impact of certain medical conditions, such as persistent pain (Stilwell et al., 2022; Stubbs, 2016) on a person's emotional well-being it could be expected that physiotherapists would encounter clients experiencing suicidal ideation and engaging in non-suicidal self-harm. The current findings further support calls noting that physiotherapists may be well positioned

to engage in suicide prevention but would benefit from training to effectively perform this role (Doesburg, 2016; Glassey, 2007; Lascelles, 2014; Lundin and Bergenheim, 2020; McGrath et al., 2020, 2021).

### **Predictors of contact with clients experiencing psychological distress**

The current study found that physiotherapist-related characteristics (i.e. sensitivity to distress, psychosocial orientation, and mental health/crisis training) had minimal impact on the perceived frequency of contact physiotherapists reported they had with clients experiencing psychological distress in contrast to non-physiotherapist-related variables (i.e. clinical sector, area of practice, and length of the initial consultation). While this was unexpected, a study of general practitioners also failed to find a relationship between clinician characteristics and recognition of depression (Piek et al., 2012), while another study failed to find evidence of a relationship between dermatologist empathy and identification of distress (Richards et al., 2004). Richards et al. (2004) suggested that the lack of an observed relationship between empathy and identification of distress may be due to the influence of social desirability. Potentially, social desirability may have influenced respondents' scores on the mPBS and the Compassion for Others Scale, given that these are reliant on self-report.

Excluding the control variable, the area of practice was the strongest predictor of physiotherapists' perceived frequency of contact with clients experiencing psychological distress, based on estimates of effect size for the different predictor variables. Although Mental Health First Aid and Crisis Training did not appear to be associated with physiotherapists' perceived frequency of contact with clients experiencing psychological distress in this study, Edgar and Connaughton (2021) found that Mental Health First Aid training improves physiotherapy students' confidence in treating people with mental health problems. Therefore, mental health training at the undergraduate level is important, as new graduate physiotherapists should be prepared to work across the spectrum of practice; advanced mental health training in specific areas of practice is also important. Physiotherapists working in areas with higher proportions of clients perceived to be experiencing psychological distress may be at greater risk of compassion fatigue (Ashton-James et al., 2021; McGrath, Parnell, Verdon, and Pope, 2022b). For example, the results of this study suggest that physiotherapists working in pain management are likely to encounter more clients experiencing psychological distress than those working in sports and exercise (i.e. approximately 5 times as many, based on physiotherapists' estimates of proportions of clients experiencing

psychological distress). A mixed methods study of clinicians working in pain management by Ashton-James et al. (2021) which included 23 physiotherapists found that one in five pain clinicians were experiencing burnout and that clinicians' confidence to manage client emotions was inversely associated with risk of burnout. While this paper was not designed to examine the relationships between exposure to client distress, confidence in managing distress, and compassion fatigue or burnout among physiotherapists, the frequent contact between physiotherapists and clients they perceived were experiencing psychological distress further suggests that mental health training for physiotherapists is important. Additionally, further research aimed at exploring strategies to monitor and address compassion fatigue and burnout among physiotherapists is needed and may benefit from targeting those working in areas of practice with high levels of exposure to people experiencing distress.

### **Attitudes and beliefs regarding psychological distress identification and assessment**

The physiotherapists in the current study generally reported a belief that *identification* of psychological distress was within the scope of physiotherapy practice, while *assessment* of psychological distress was on the boundary or outside of scope. While not directly comparable due to the differing responses on the Likert scale, respondents' beliefs regarding identification of psychological distress were largely similar, with 70.3% of respondents in the current study reporting that identification was within the scope of physiotherapy practice, with this percentage similar to the 81.8% of physiotherapists reported in the study by Lennon et al. (2020). Respondents' confidence and self-reported competence followed a similar pattern, with much higher levels of confidence and self-reported competence reported for identification of psychological distress than for assessment of psychological distress. The survey results suggest that a significant number of respondents believed they needed to be trained in order to be able to capably perform an assessment of psychological distress, and a similar number of respondents believed they could complete such an assessment of psychological distress only with help. Only a small minority of respondents reported being able to perform an assessment of psychological distress on their own. New South Wales Department of Health (2004) breaks down suicide risk assessment into multiple steps, including

detection (identification), preliminary assessment, and full assessment. Using these categories according to the survey results the majority of respondents could be divided into two groups: 1) those who are able to identify psychological distress; and 2) those who can conduct a preliminary assessment of psychological distress, indicating that further training would be needed to enable most physiotherapists to competently complete a full assessment of psychological distress.

### **Recommendations and implications for physiotherapy practice**

While mental health physiotherapy is a specialty area of practice (Probst, 2017) based on the findings of this study and the broader literature, it is clear that client distress, and more broadly client mental health, is relevant to all physiotherapists. Therefore, inclusion within training physiotherapists in mental health training, including training in incidental counseling, psychosocial needs assessments, identifying and responding to family violence, sexual abuse/assault, non-suicidal self-injury, and suicidal distress, is urgently needed. Given that physiotherapists working across many areas of practice may encounter clients experiencing distress, it is recommended this training be included in entry-level physiotherapy programs. At the time their survey was conducted, Connaughton and Gibson (2016b) reported that of the Australian universities offering entry-level physiotherapy programs sampled ( $n = 10$ ), none included a unit focused on mental health in physiotherapy practice. However, since the study by Connaughton and Gibson (2016b), the University of Notre Dame (2023) has included a subject focused on mental health in physiotherapy, within their undergraduate bachelor of physiotherapy degree. At the time of writing we were unable to identify similar subjects recently introduced in other Australian entry-level physiotherapy programs.

While ensuring that all physiotherapy students have completed Mental Health First Aid or similar psychological first aid courses may be helpful (Edgar and Connaughton, 2021) undergraduate training must go well beyond content provided in courses on this topic designed for the general public (Jorm, Kitchener, Fischer, and Cvetkovski, 2010). Given the biopsychosocial nature of health, the findings of this study, and the professional responsibilities of generally registered Australian physiotherapists (Physiotherapy Board of Australia and Physiotherapy Board of New Zealand, 2015) physiotherapy students should have their

competencies assessed to ensure that they are prepared for encounters with clients experiencing psychological distress. Competency assessment is critical as El-Den, Chen, Moles, and O'Reilly (2018) found that while 96% of pharmacy students reported being confident in encouraging help-seeking, only 50% demonstrated competence in a simulated suicide vignette assessment after completing Mental Health First Aid training.

In addition to embedding mental health training within entry-level physiotherapy programs, training in mental health should also be included in professional development courses and postgraduate physiotherapy qualifications. This training should be tailored specifically to the respective area of physiotherapy practice. For example, while all physiotherapists should be trained to recognize and respond to disclosures of sexual assault or abuse, physiotherapists training to become a Women's, Men's, and Pelvic Health titled physiotherapist should receive more advanced training in trauma-informed approaches, given the prevalence of past sexual trauma among people with pelvic floor issues (Stirling, Chalmers, and Chipchase, 2021). Furthermore, psychologically informed physiotherapy approaches must include specific guidance on how to assess pain- and health-related psychological distress as well as general psychological distress. Physiotherapists in the current study generally lacked confidence in assessing psychological distress, and research investigating physiotherapists' perceptions of learning and implementing psychologically informed care has found that dealing with psychosocial factors is perceived by physiotherapists as requiring advanced skills that are "quite a long way from physiotherapy" (Barker, Heelas, and Toye, 2016; Holopainen et al., 2020). Being able to assess psychological distress is critical in determining whether psychologically informed physiotherapy alone is adequate, or if a referral to a mental health professional is needed.

### **Limitations and future directions**

The study has several notable limitations. First, while attempts have been made to highlight that the findings reflect physiotherapists' frequency of contact with clients they perceived to be experiencing psychological distress, it should again be emphasized that the findings may not reflect physiotherapists' actual frequency of contact with clients experiencing psychological distress. Second, there is no widely accepted definition of psychological distress because distress can be experienced and expressed in a variety of different ways (Drapeau, Marchand, and Beaulieu-Prévost, 2012; Johnstone, 2022; Laporte and Aita, 2021). For example, the definition of psychological distress presented to participants in this study differed from the definition provided to the

participants in the study conducted by Lennon et al. (2020). In response to the variety of different ways psychological distress can be, and has been defined, the definition used in this survey (Supplemental Online Material 1) aimed to be inclusive. This more inclusive definition may explain the higher perceived frequency of contact with clients experiencing psychological distress observed in this study. Third, the sample was nonrandom, differed from the underlying population in some characteristics, and response rates were low (approximately 6%) increasing the threat of selection bias. It is difficult to compare response rates with other online surveys of physiotherapists as many are unable to calculate response rates due to the recruitment methods used (Brett, Pocovi, and Traynor, 2023; Ebert et al., 2019; Greenberg et al., 2018). However, the final sample size is comparable to online surveys of physiotherapists that have used similar recruitment methods (Driver, Oprescu, and Lovell, 2020; Man, Kumar, Jones, and Edwards, 2019; Setchell et al., 2014). Due to the low response rates and the sampling method, the results should be interpreted with caution and in the context of the existing mental health physiotherapy literature (Connaughton and Gibson, 2016a; Lennon et al., 2020) as well as in the context of general Australian population data (Australian Bureau of Statistics, 2022). Specifically, the authors caution readers to consider that some respondents may have been particularly interested in participating if they perceived that they frequently encountered clients experiencing psychological distress in their practice. Similarly, self-reported confidence and competence reported in this study may be higher than those existing in the underlying population of Australian physiotherapists if respondents with more training were more likely to participate in the survey.

Further research is needed to assess the ability of physiotherapists to identify and assess psychological distress; however, any such research must contend with the difficulties of defining psychological distress. Furthermore, due to the design of our study, we used self-report measures of competence in identifying and assessing psychological distress; future research using non-self-report measures of competence such as those used in the study by El-Den, Chen, Moles, and O'Reilly (2018) is needed. In addition, it would be beneficial to study the factors that predict physiotherapists' perceived frequency of contact with clients experiencing psychological distress in particular areas of practice, as certain characteristics of physiotherapists may be associated with the perceived frequency of contact in specific clinical settings and not others. While a previous study examining the mental health content in entry-level

physiotherapy programs in Australia using an online questionnaire was conducted some years ago by Connaughton and Gibson (2016b), a comprehensive audit using similar methods to those employed by Mistry, Yonezawa, and Milne (2019) would provide important, updated data that could be used to inform a systematic national implementation of mental health training in entry-level physiotherapy curriculum. More broadly, the findings of this study highlight that mental health is relevant to all areas of physiotherapy practice and that further research regarding mental health physiotherapy is urgently needed.

## Conclusion

This cross-sectional survey of Australian physiotherapists found that just over a third of physiotherapists' clients were perceived to be experiencing psychological distress (36.1%). The physiotherapists reported encounters with clients experiencing distress related to sexual trauma and family violence, clients engaging in non-suicidal self-injury, and clients experiencing suicidal thoughts and behaviors. Physiotherapist-related factors had minimal effect on the perceived frequency of contact with clients experiencing psychological distress compared to the type of clinical setting and area of practice in which they worked, suggesting the perceived frequency of contact was more likely associated with differences between clinical contexts in proportions of clients experiencing psychological distress. The physiotherapists in the study generally reported that it was within their scope of practice to identify psychological distress, but that the assessment of distress was on the boundary or outside of their scope of practice. Overall, the findings of this study confirm that consideration of client mental health is relevant to all physiotherapists.

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## References

- Amin NA, Quek KF, Oxley JA, Noah R, Nordin R 2018 Emotional distress as a predictor of work-related musculoskeletal disorders in Malaysian nursing professionals. *The International Journal of Occupational and Environmental Medicine* 92: 69–78 [10.15171/ijoem.2018.1158](https://doi.org/10.15171/ijoem.2018.1158)
- Andrew E, Briffa K, Waters F, Lee S, Fary R 2019 Physiotherapists' views about providing physiotherapy services to people with severe and persistent mental illness: A mixed methods study. *Journal of Physiotherapy* 654: 222–229 [10.1016/j.jphys.2019.08.001](https://doi.org/10.1016/j.jphys.2019.08.001)
- Ashton-James CE, McNeilage AG, Avery N, Robson LH, Costa D 2021 Prevalence and predictors of burnout symptoms in multidisciplinary pain clinics: A mixed-methods study. *Pain* 1622: 503–513 [10.1097/j.pain.0000000000002042](https://doi.org/10.1097/j.pain.0000000000002042)
- Ashworth CD, Williamson P, Montano D 1984 A scale to measure physician beliefs about psychosocial aspects of patient care. *Social Science and Medicine* 1911: 1235–1238 [10.1016/0277-9536\(84\)90376-9](https://doi.org/10.1016/0277-9536(84)90376-9)
- Australian Bureau of Statistics 2022 National Study of Mental Health and Wellbeing. <https://www.abs.gov.au/statistics/health/mental-health/national-study-mental-health-and-wellbeing/2020-21>.
- Australian Government Department of Health 2019 National Health Workforce Data Set: Physiotherapy. <https://hwd.health.gov.au/resources/publications/factsheet-all-physiotherapists-2019.pdf>.
- Australian Institute of Health and Welfare 2022 Mental Health [v28.0]. <https://www.aihw.gov.au/mental-health/overview/mental-illness>.
- Australian Physiotherapy Association 2022 Statement from the Australian Physiotherapy Association on Formalising the Role of Physiotherapy in Mental Health Care. [https://australian.physio/sites/default/files/submission/APA\\_Advocacy\\_Position-Statement\\_Mental\\_Health.pdf](https://australian.physio/sites/default/files/submission/APA_Advocacy_Position-Statement_Mental_Health.pdf).
- Ballengue LA, Zullig LL, George SZ 2021 Implementation of psychologically informed physical therapy for low back pain: Where do we stand, where do we go? *Journal of Pain Research* 14: 3747–3757 [10.2147/JPR.S311973](https://doi.org/10.2147/JPR.S311973)
- Barke A, Koechlin H, Korwisi B, Locher C 2020 Emotional distress: Specifying a neglected part of chronic pain. *European Journal of Pain* 243: 477–480 [10.1002/ejp.1525](https://doi.org/10.1002/ejp.1525)
- Barker KL, Heelas L, Toye F 2016 Introducing acceptance and commitment therapy to a physiotherapy led pain rehabilitation programme: An action research study. *British Journal of Pain* 101: 22–28 [10.1177/2049463715587117](https://doi.org/10.1177/2049463715587117)
- Brett L, Pocovi NC, Traynor V 2023 Perceived barriers and facilitators to the provision of physiotherapy in residential aged care facilities: A national survey of Australian physiotherapists. *Australasian Journal on Ageing* 421: 165–175 [10.1111/ajag.13123](https://doi.org/10.1111/ajag.13123)
- Carroll LJ, Liu Y, Holm LW, Cassidy JD, Côté P 2011 Pain-related emotions in early stages of recovery in whiplash-associated disorders: Their presence, intensity, and association with pain recovery. *Psychosomatic Medicine* 738: 708–715 [10.1097/PSY.0b013e31822f991a](https://doi.org/10.1097/PSY.0b013e31822f991a)
- Cohen J 1988 Multiple Regression and Correlation Analysis In: Cohen J Ed *Statistical Power Analysis for the Behavioral Sciences*, pp. 407–465 Hillsdale, NJ: Lawrence Erlbaum Associates
- Connaughton J, Gibson W 2016a Do physiotherapists have the skill to engage in the “psychological” in the biopsychosocial approach? *Physiotherapy Canada* 684: 377–382 [10.3138/ptc.2015-66](https://doi.org/10.3138/ptc.2015-66)
- Connaughton J, Gibson W 2016b Physiotherapy students' attitudes toward psychiatry and mental health: A cross-sectional study. *Physiotherapy Canada* 682: 172–178 [10.3138/ptc.2015-18E](https://doi.org/10.3138/ptc.2015-18E)
- Cook RD 1986 Assessment of local influence. *Journal of the Royal Statistical Society* 482: 133–155 [10.1111/j.2517-6161.1986.tb01398.x](https://doi.org/10.1111/j.2517-6161.1986.tb01398.x)
- Coutu MF, Durand MJ, Loisel P, Goulet C, Gauthier N 2007 Level of distress among workers undergoing work rehabilitation for musculoskeletal disorders. *Journal of Occupational Rehabilitation* 172: 289–303 [10.1007/s10926-007-9079-y](https://doi.org/10.1007/s10926-007-9079-y)
- Cree RA, Okoro CA, Zack MM, Carbone E 2020 Frequent Mental Distress Among Adults, by Disability Status, Disability Type, and Selected Characteristics — United States, 2018. *Morbidity and Mortality Weekly Report* 6936: 1238–1243 [10.15585/mmwr.mm6936a2](https://doi.org/10.15585/mmwr.mm6936a2)
- Diamond GS, O'Malley A, Wintersteen MB, Peters S, Yunghans S, Biddle V, O'Brien C, Schrand S 2011 Attitudes, practices, and barriers to adolescent suicide and mental health screening: A survey of Pennsylvania primary care providers. *Journal of Primary Care & Community Health* 31: 29–35 [10.1177/2150131911417878](https://doi.org/10.1177/2150131911417878)
- Doesburg S 2016 Suicide Intentions and Self-Harm – What Advice Should You Provide? *Physio Matters*: 8–9 [https://pnz.org.nz/Attachment?Action=Download&Attachment\\_id=1077](https://pnz.org.nz/Attachment?Action=Download&Attachment_id=1077)
- Drapeau A, Marchand A, Beaulieu-Prévost D 2012 Epidemiology of psychological distress. In: LABate LED *Mental Illnesses: Understanding, Prediction and Control* pp. 105–134 London: IntechOpen
- Driver C, Lovell GP, Oprescu F 2021 Physiotherapists' views, perceived knowledge, and reported use of psychosocial strategies in practice. *Physiotherapy Theory and Practice* 371: 135–148 [10.1080/09593985.2019.1587798](https://doi.org/10.1080/09593985.2019.1587798)
- Driver C, Oprescu F, Lovell GP 2020 An exploration of physiotherapists' perceived benefits and barriers towards using psychosocial strategies in their practice. *Musculoskeletal Care* 182: 111–121 [10.1002/msc.1437](https://doi.org/10.1002/msc.1437)
- Ebert JR, Webster KE, Edwards PK, Joss BK, D'Alessandro P, Janes G, Annear P 2019 Current perspectives of Australian



- therapists on rehabilitation and return to sport after anterior cruciate ligament reconstruction: A survey. *Physical Therapy in Sport* 35: 139–145 [10.1016/j.ptsp.2018.12.004](https://doi.org/10.1016/j.ptsp.2018.12.004)
- Edgar S, Connaughton J 2021 Using mental health first aid training to improve the mental health literacy of physiotherapy students. *Physiotherapy Canada* 732: 188–193 [10.3138/ptc-2019-0036](https://doi.org/10.3138/ptc-2019-0036)
- El-Den S, Chen TF, Moles RJ, O'Reilly C 2018 Assessing Mental Health First Aid skills using simulated patients. *American Journal of Pharmaceutical Education* 82 2: 185–193 [10.5688/ajpe6222](https://doi.org/10.5688/ajpe6222)
- Faul F, Erdfelder E, Lang A-L, Buchner A 2009 Statistical power analyses using G\*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods* 414: 1149–1160 [10.3758/BRM.41.4.1149](https://doi.org/10.3758/BRM.41.4.1149)
- Field AP, Miles J, Field Z 2012 *Discovering Statistics Using R*. Los Angeles: SAGE Publications
- Gadalla TM 2009 Determinants, correlates and mediators of psychological distress: A longitudinal study. *Social Science and Medicine* 6812: 2199–2205 [10.1016/j.socscimed.2009.03.040](https://doi.org/10.1016/j.socscimed.2009.03.040)
- Gelman A, Hill J 2007 *Data Analysis Using Regression and Multilevel/Hierarchical Models*, p. 46 Cambridge: Cambridge University Press
- George D, Mallery P 2003 *Spss for Windows Step by Step: A Simple Guide and Reference*. 11.0 Update (4<sup>th</sup> Allyn and Bacon: Boston
- Gilbert P, Catarino F, Duarte C, Matos M, Kolts R, Stubbs J, Ceresatto L, Duarte J, Pinto-Gouveia J, Basran J 2017 The development of compassionate engagement and action scales for self and others. *Journal of Compassionate Health Care* 41: 4 [10.1186/s40639-017-0033-3](https://doi.org/10.1186/s40639-017-0033-3)
- Glassey N 2007 An audit of the training needs for therapists providing rehabilitation for patients with self-inflicted hand and forearm injuries. *British Journal of Hand Therapy* 123: 89–94 [10.1177/175899830701200303](https://doi.org/10.1177/175899830701200303)
- Gouveia L, Lelorain S, Brédart A, Dolbeault S, Bonnaud-Antignac A, Cousson-Gélie F, Sultan S 2015 Oncologists' perception of depressive symptoms in patients with advanced cancer: Accuracy and relational correlates. *BMC Psychology* 31: 6 [10.1186/s40359-015-0063-6](https://doi.org/10.1186/s40359-015-0063-6)
- Greenberg EM, Greenberg ET, Albaugh J, Storey E, Ganley TJ 2018 Rehabilitation practice patterns following anterior cruciate ligament reconstruction: A survey of physical therapists. *The Journal of Orthopaedic and Sports Physical Therapy* 4810: 801–811 [10.2519/jospt.2018.8264](https://doi.org/10.2519/jospt.2018.8264)
- Hair JF, Hult GT, Ringle CM, Sarstedt M 2017 *A Primer on Partial Least Squares Structural Equation Modeling*. 2<sup>nd</sup> Los Angeles: SAGE Publications
- Heikkinen J, Honkanen R, Williams L, Leung J, Rauma P, Quirk S, Koivumaa-Honkanen H 2019 Depressive disorders, anxiety disorders and subjective mental health in common musculoskeletal diseases: A review. *Maturitas* 127: 18–25 [10.1016/j.maturitas.2019.05.011](https://doi.org/10.1016/j.maturitas.2019.05.011)
- Heneghan AM, Chaudron LH, Storfer-Isser A, Park ER, Kelleher KJ, Stein RE, Hoagwood KE, O'Connor KG, Horwitz SM 2007 Factors associated with identification and management of maternal depression by pediatricians. *Pediatrics* 1193: 444–454 [10.1542/peds.2006-0765](https://doi.org/10.1542/peds.2006-0765)
- Henstock L, Carruthers H 2017 Using counselling and psychological strategies within physiotherapy. In: Porter SED *Psychologically-Informed Physiotherapy: Embedding Psychosocial Perspectives within Clinical Management* pp. 188–205 Edinburgh: Elsevier
- Heywood SE, Connaughton J, Kinsella R, Black S, Bicchi N, Setchell J 2022 Physical therapy and mental health: Scoping review. *Physical Therapy* 10211: zac102 [10.1093/ptj/pzac102](https://doi.org/10.1093/ptj/pzac102)
- Heywood SE, Connaughton J, Kinsella R, Black S, Bicchi N, Setchell J 2023 Author response to McGrath et al. *Physical Therapy* 1032: zac164 [10.1093/ptj/pzac164](https://doi.org/10.1093/ptj/pzac164)
- Hobson CJ, Kamen J, Szostek J, Nethercut CM, Tiedmann JW, Wojnarowicz S 1998 Stressful life events: A revision and update of the social readjustment rating scale. *International Journal of Stress Management* 51: 1–23 [10.1023/A:1022978019315](https://doi.org/10.1023/A:1022978019315)
- Hollestein LM, Lo SN, Leonardi-Bee J, Rosset S, Shomron N, Couturier DL, Gran S 2021 Multiple ways to correct for multiple comparisons in multiple types of studies. *The British Journal of Dermatology* 1856: 1081–1083 [10.1111/bjd.20600](https://doi.org/10.1111/bjd.20600)
- Holopainen R, Simpson P, Piirainen A, Karppinen J, Schütze R, Smith A, O'Sullivan P, Kent P 2020 Physiotherapists' perceptions of learning and implementing a biopsychosocial intervention to treat musculoskeletal pain conditions: A systematic review and metasynthesis of qualitative studies. *Pain* 1616: 1150–1168 [10.1097/j.pain.0000000000001809](https://doi.org/10.1097/j.pain.0000000000001809)
- Isaacs AN, Enticott J, Meadows G, Inder B 2018 Lower income levels in Australia are strongly associated with elevated psychological distress: Implications for healthcare and other policy areas. *Frontiers in Psychiatry* 9: 536 [10.3389/fpsy.2018.00536](https://doi.org/10.3389/fpsy.2018.00536)
- Johnstone L 2022 General Patterns in the Power Threat Meaning Framework – Principles and Practice. *Journal of Constructivist Psychology* 351: 16–26 [10.1080/10720537.2020.1773358](https://doi.org/10.1080/10720537.2020.1773358)
- Jorm AF, Kitchener BA, Fischer JA, Cvetkovski S 2010 Mental health first aid training by e-learning: A randomized controlled trial. *The Australian and New Zealand Journal of Psychiatry* 4412: 1072–1081 [10.3109/00048674.2010.516426](https://doi.org/10.3109/00048674.2010.516426)
- Knief U, Forstmeier W 2021 Violating the normality assumption may be the lesser of two evils. *Behavior Research Methods* 536: 2576–2590 [10.3758/s13428-021-01587-5](https://doi.org/10.3758/s13428-021-01587-5)
- Lake E 2022 Is it Time to Integrate Self-Care into Physiotherapy Practice? *InMotion*: 43–45 <https://australian.physio/inmotion/good-look-mental-health-and-self-care>
- Laporte G, Aita M 2021 Psychological distress as a unique concept: A response to Molgora et al. (2020). *Journal of Affective Disorders* 278: 13–14 [10.1016/j.jad.2020.09.050](https://doi.org/10.1016/j.jad.2020.09.050)
- Lascelles K 2014 Suicide watch. *Frontline* 1020: 24–25 [https://www.csp.org.uk/system/files/frontline\\_magazine\\_4\\_june.pdf](https://www.csp.org.uk/system/files/frontline_magazine_4_june.pdf)
- Lennon O, Ryan C, Helm M, Moore K, Sheridan A, Probst M, Cunningham C 2020 Psychological distress among patients attending physiotherapy: A survey-based investigation of Irish physiotherapists' current practice and opinions. *Physiotherapy Canada* 723: 239–248 [10.3138/ptc-2019-0010](https://doi.org/10.3138/ptc-2019-0010)
- Lundin Å, Bergenheim A 2020 Encountering suicide in primary healthcare rehabilitation: The experiences of physiotherapists. *BMC Psychiatry* 201: 597 [10.1186/s12888-020-03004-1](https://doi.org/10.1186/s12888-020-03004-1)
- Man I, Kumar S, Jones M, Edwards I 2019 An exploration of psychosocial practice within private practice musculoskeletal physiotherapy: A cross-sectional survey. *Musculoskeletal Science and Practice* 43: 58–63 [10.1016/j.msksp.2019.06.004](https://doi.org/10.1016/j.msksp.2019.06.004)
- McGrath RL, MacDonald JB, Verdon S, Parnell T, Smith M 2021 Encounters between physio-therapists and clients

- with suicidal thoughts and behaviours: A narrative literature review. *New Zealand Journal of Physiotherapy* 49: 70–81 [10.15619/NZJP/49.2.03](https://doi.org/10.15619/NZJP/49.2.03)
- McGrath RL, Parnell T, Verdon S, MacDonald JB, Smith M, English C 2020 Trust, conversations and the ‘middle space’: A qualitative exploration of the experiences of physiotherapists with clients with suicidal thoughts and behaviours. *PloS One* 159: e0238884 [10.1371/journal.pone.0238884](https://doi.org/10.1371/journal.pone.0238884)
- McGrath RL, Parnell T, Verdon S, Pope R 2022a “People suffer and we see this”: A qualitative study of the forms of patient psychological distress encountered by physiotherapists. *Physiotherapy Theory and Practice Online* ahead of print: 1–17 [10.1080/09593985.2022.2141085](https://doi.org/10.1080/09593985.2022.2141085)
- McGrath RL, Parnell T, Verdon S, Pope R 2022b “We take on people’s emotions”: A qualitative study of physiotherapists’ experiences with patients experiencing psychological distress. *Physiotherapy Theory and Practice Online* ahead of print: 1–23 [10.1080/09593985.2022.2116964](https://doi.org/10.1080/09593985.2022.2116964)
- McGrath RL, Pope R, Parnell T, Verdon S 2022 Assessing and Managing Physiotherapy Clients Experiencing Psychological Distress: A Scoping Review Protocol. <https://osf.io/project/mjb6n/files/osfstorage/62ce6205779f17137a070ff8>
- McGrath RL, Shephard S, Berrick A, Parnell T, Verdon S, Pope R 2023 On “Physical Therapy and Mental Health: A Scoping Review.” Heywood SE, Connaughton J, Kinsella R, Black S, Bicchi N, Setchell J. *Phys Ther.* 2022;102: Pzac102. *Physical Therapy* 1032: pzac163 [10.1093/ptj/pzac163](https://doi.org/10.1093/ptj/pzac163)
- McLennan JD, Jansen-McWilliams L, Comer DM, Gardner WP, Kelleher KJ 1999 The physician belief scale and psychosocial problems in children: A report from the pediatric research in office settings and the ambulatory sentinel practice network. *Journal of Developmental and Behavioral Pediatrics* 201: 24–30 [10.1097/00004703-199902000-00004](https://doi.org/10.1097/00004703-199902000-00004)
- McMeeken J, Webb G, Krause KL, Grant R, Garnett R 2005 Learning Outcomes and Curriculum Development in Australian Physiotherapy Education Canberra: Australian Universities Teaching Committee
- Meuleman B, Loosveldt G, Emonds V 2014 Regression analysis: Assumptions and diagnostics. In: Best H, and Wolf C Eds *The SAGE Handbook of Regression Analysis and Causal Inference*, pp. 83–110 London: SAGE Publication [10.4135/9781446288146](https://doi.org/10.4135/9781446288146)
- Mistry K, Yonezawa E, Milne N 2019 Paediatric physiotherapy curriculum: An audit and survey of Australian entry-level physiotherapy programs. *BMC Medical Education* 191: 109 [10.1186/s12909-019-1540-z](https://doi.org/10.1186/s12909-019-1540-z)
- Naber D, Bullinger M 2018 Should antidepressants be used in minor depression? *Dialogues in Clinical Neuroscience* 203: 223–228 [10.31887/DCNS.2018.20.3/dnaber](https://doi.org/10.31887/DCNS.2018.20.3/dnaber)
- Naser AY, Hameed AN, Mustafa N, Alwafi H, Dahmash EZ, Alyami HS, Khalil H 2021 Depression and anxiety in patients with cancer: A cross-sectional study. *Frontiers in Psychology* 12: 585534 [10.3389/fpsyg.2021.585534](https://doi.org/10.3389/fpsyg.2021.585534)
- Nayda R, Pridham L 2004 Australian physiotherapists and mandatory notification of child abuse: Legislation and practice. *The Australian Journal of Physiotherapy* 50: 103–107 [10.1016/S0004-9514\(14\)60102-1](https://doi.org/10.1016/S0004-9514(14)60102-1)
- Neter J, Kutner MH, Nachtsheim CJ, Wasserman W 1996 *Applied Linear Statistical Models*. 4<sup>th</sup> Boston: WCB McGraw Hill
- New South Wales Department of Health 2004 Framework for Suicide Risk Assessment and Management for NSW Health Staff. <https://www.health.nsw.gov.au/mentalhealth/resources/Publications/suicide-risk.pdf>
- Physiotherapy Board of Australia 2022 Registrant Data Table - June 2022. <https://www.ahpra.gov.au/documents/default.aspx?record=WD22%2f32045dbid=AP&checksum=mUxqvr4fsbRqyJdThaEEg%3d%3d>
- Physiotherapy Board of Australia and Physiotherapy Board of New Zealand 2015 Physiotherapy Practice Thresholds in Australia and Aotearoa New Zealand. <https://physiocouncil.com.au/wp-content/uploads/2017/10/Physiotherapy-Board-Physiotherapy-practice-thresholds-in-Australia-and-Aotearoa-New-Zealand.pdf>
- Piek E, Nolen WA, van der Meer K, Joling KJ, Kollen BJ, Penninx BW, van Marwijk HW, van Hout HP, van Marwijk HWJ, van Hout HPJ 2012 Determinants of (non-)recognition of depression by general practitioners: Results of the Netherlands Study of Depression and Anxiety. *Journal of Affective Disorders* 1383: 397–404 [10.1016/j.jad.2012.01.006](https://doi.org/10.1016/j.jad.2012.01.006)
- Potter M, Gordon S, Hamer P 2003 The difficult patient in private practice physiotherapy: A qualitative study. *The Australian Journal of Physiotherapy* 491: 53–61 [10.1016/S0004-9514\(14\)60188-4](https://doi.org/10.1016/S0004-9514(14)60188-4)
- Probst M 2017 Physiotherapy and mental health. In: Suzuki T Ed *Clinical Physical Therapy*, pp. 179–204 London: Intech Open
- Rai D, Kosidou K, Lundberg M, Araya R, Lewis G, Magnusson C 2012 Psychological distress and risk of long-term disability: Population-based longitudinal study. *Journal of Epidemiology and Community Health* 667: 586–592 [10.1136/jech.2010.119644](https://doi.org/10.1136/jech.2010.119644)
- Ribeiro C, Tsang L, Lin B, Kemp-Smith K, Phillips J, Furness J 2022 Physiotherapists’ perceptions of their role in treating and managing people with depression and anxiety disorders: A systematic review. *Physiotherapy Theory and Practice Online* ahead of print: 1–25 [10.1080/09593985.2022.2122915](https://doi.org/10.1080/09593985.2022.2122915)
- Richards HL, Fortune DG, Weidmann A, Sweeney SK, Griffiths CE 2004 Detection of psychological distress in patients with psoriasis: Low consensus between dermatologist and patient. *The British Journal of Dermatology* 1516: 1227–1233 [10.1111/j.1365-2133.2004.06221.x](https://doi.org/10.1111/j.1365-2133.2004.06221.x)
- Scheerder G, Reynders A, Andriessen K, Van Audenhove C 2010 Suicide intervention skills and related factors in community and health professionals. *Suicide & Life-Threatening Behavior* 40: 115–124 [10.1521/suli.2010.40.2.115](https://doi.org/10.1521/suli.2010.40.2.115)
- Schober P, Boer C, Schwarte LA 2018 Correlation coefficients: Appropriate use and interpretation. *Anesthesia and Analgesia* 126: 1763–1768 [10.1213/ANE.0000000000002864](https://doi.org/10.1213/ANE.0000000000002864)
- Setchell J, Watson B, Jones L, Gard M, Briffa K 2014 Physiotherapists demonstrate weight stigma: A cross-sectional survey of Australian physiotherapists. *Journal of Physiotherapy* 603: 157–162 [10.1016/j.jphys.2014.06.020](https://doi.org/10.1016/j.jphys.2014.06.020)
- Stevens J 2009 *Applied Multivariate Statistics for the Social Sciences*. 5<sup>th</sup> New York: Routledge
- Stilwell P, Hudon A, Meldrum K, Pagé MG, Wideman TH 2022 What is pain-related suffering? Conceptual critiques, key attributes, and outstanding questions. *The Journal of Pain* 235: 729–738 [10.1016/j.jpain.2021.11.005](https://doi.org/10.1016/j.jpain.2021.11.005)
- Stirling J, Chalmers KJ, Chipchase L 2021 The role of the physiotherapist in treating survivors of sexual assault. *Journal of Physiotherapy* 67: 1–2

- Stirling AM, Wilson P, McConnachie A 2001 Deprivation, psychological distress, and consultation length in general practice. *British Journal of General Practice* 51: 456–460
- Stubbs B 2016 The prevalence and odds of suicidal thoughts, behaviours and deaths among people with painful comorbidities: An updated meta-analysis accounting for publication bias. *Journal of Psychiatric Research* 72: 72–73
- Turner J, Malliaras P, Goulis J, McAuliffe S 2020 “It’s disappointing and it’s pretty frustrating, because it feels like it’s something that will never go away.” a qualitative study exploring individuals’ beliefs and experiences of achilles tendinopathy. *PloS One* 15: e0233459
- University of Notre Dame 2023 Program requirements: Bachelor of physiotherapy. [https://www.notredame.edu.au/\\_\\_data/assets/pdf\\_file/0016/4075/Bachelor-of-Physiotherapy.pdf](https://www.notredame.edu.au/__data/assets/pdf_file/0016/4075/Bachelor-of-Physiotherapy.pdf).
- Whitney DG, Peterson MD, Warschausky SA 2019 Mental health disorders, participation, and bullying in children with cerebral palsy. *Developmental Medicine and Child Neurology* 61: 937–942