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*Research article*

**“...like you’re pushing the snowball back up hill”—the experiences of Australian physiotherapists promoting non-treatment physical activity: A qualitative study**

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**Abstract:** Participating in physical activity is important for maintaining general health. When physiotherapists promote physical activity for the purposes of maintaining or improving a patient’s general health, they are promoting non-treatment physical activity. Physiotherapists have a responsibility to promote non-treatment physical activity to their patients while also providing the patient with treatment for their presenting complaint. This qualitative study explored the experiences of Australian physiotherapists promoting non-treatment physical activity to patients with musculoskeletal conditions. Ten Australian physiotherapists treating patients with musculoskeletal conditions in private practice and outpatient settings were recruited using a social media campaign and snowballing. All interviewees received one \$AU20 gift card for participating. Sixty-minute semi-structured interviews were conducted and were transcribed verbatim. Interpretative phenomenological analysis was used to design the interview guide and analyse data. Transcripts were used to identify emergent and superordinate themes. Most interviewees were female, aged between 25–34 years, physically active and reported promoting NTPA. The superordinate themes that emerged from the transcripts included: Internal and external influences on NTPA promotion, approach taken by the physiotherapist towards NTPA promotion, challenges experienced when promoting NTPA, and skills and training. In conclusion, physiotherapists reported they were

well-placed to promote NTPA, but they face many challenges. The perceived inability to motivate patients to become physically active and the need to prioritise patient expectations of hands-on therapy made NTPA promotion difficult. Workplace specific factors, such as having an open-plan clinic environment and having other staff who promote NTPA, were perceived to make NTPA promotion easier. Using effective marketing strategies that portray the physiotherapy clinic as a physically active environment might see patients expect NTPA promotion, making NTPA promotion easier for Australian physiotherapists in the future.

**Keywords:** physical therapists; physiotherapy; health promotion; exercise; physical activity; motor activity; behaviour change

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**Abbreviations:** BCT: Behaviour change technique; IPA: Interpretative phenomenological analysis; NTPA: Non-treatment physical activity; PA: Physical activity

## 1. Introduction

Physical inactivity is considered the greatest public health problem of the current century [1]. Adequate PA is defined as achieving 150–300 minutes of moderate intensity activity (e.g. gentle cycling or swimming) or 75–150 minutes of vigorous intensity activity (e.g. race cycling or spin class) weekly, as well as muscle strengthening for all major muscle groups twice weekly [2]. However, adults are not achieving sufficient levels of physical activity (PA) to support good health. Self-report data suggests 31.1% of adults worldwide are not meeting PA guidelines [3]. In 2014–2015, 44.5% of Australian adults did not achieve the minimum recommended PA levels [4].

Physiotherapists are healthcare practitioners who treat patients with musculoskeletal conditions and who also have a responsibility to promote PA [5]. Physiotherapists treat patients with a wide range of musculoskeletal conditions that can contribute to disability and form a large component of a physiotherapist's work. The global prevalence of musculoskeletal conditions, such as low back pain (9.2%) and other musculoskeletal disorders (8.1%), indicates these conditions are some of the most prevalent diseases in the world [6]. In 2014–2015, 30.0% of Australians reported having a musculoskeletal condition, with 23.0% also having another chronic comorbid condition, such as cardiovascular disease [7]. The presence of a musculoskeletal condition, and its associated symptoms (e.g. pain) and signs (e.g. poor physical condition), can act as a barrier to being physically active [8] and can increase the risk of developing comorbid conditions. Therefore, it is important that physiotherapists pay particular attention to supporting patients with musculoskeletal conditions to participate in PA. The type of PA that is specific to improving or maintaining general health, as opposed to being used to treat a musculoskeletal condition, is called non-treatment physical activity (NTPA) [9]. It is imperative that physiotherapists promote NTPA to improve the PA levels of Australian adults.

A recent systematic review reported that physiotherapists can successfully increase patient PA levels, but the PA improvements were small and not maintained [10]. It is important to be aware of how practicing physiotherapists experience NTPA promotion to understand how this might

influence the success of their promotion efforts. Understanding these experiences is important to be able to more effectively engage physiotherapists as active agents in improving the PA levels of Australians.

This qualitative study investigated the experiences of Australian physiotherapists promoting NTPA to patients with musculoskeletal conditions.

## **2. Materials and methods**

### *2.1. Design*

This was a cross-sectional qualitative study that used interpretative phenomenological analysis (IPA) as the methodological framework because IPA facilitates the exploration of interviewee experiences of a specific topic (e.g. NTPA promotion) [11]. Interpretative phenomenological analysis facilitates the exploration of the perceptions and experiences of people by using an in-depth qualitative analysis and a homogenous sample to examine how people perceive and understand what is happening to them [12].

### *2.2. Interviewees*

Australian physiotherapists who treated patients with musculoskeletal conditions in private practice and/or outpatient settings were eligible to participate and were recruited using social media (Facebook, Twitter) and snowballing. All potential interviewees were provided with a plain language information statement and informed consent form outlining the study and were asked to return the signed consent form prior to participation. Thirteen interviewees were asked to participate in the study. Ten participated and received one \$AU20 gift card as an incentive.

### *2.3. Ethics*

The Federation University Australia Human Research Ethics Committee approved this study (project number B16-131).

### *2.4. Data collection*

The interview guide (Supplementary file 1) was designed based on the results of two systematic reviews [10,13] and previous relevant literature [14–16] specific to NTPA promotion in physiotherapy. The guide was piloted with one physiotherapist and reviewed by all co-authors prior to use. Yardley's criteria [17] was used to guide the design and completion of this study (Supplementary file 2).

Semi-structured interviews were conducted by the lead author face-to-face ( $n = 6$ ), by telephone ( $n = 2$ ) and online using a video service ( $n = 2$ ). The reduced emphasis on structure in semi-structured interviews allows for flexible exploration of physiotherapists' experiences, making them the favoured data collection method for IPA-based qualitative studies [11,18].

Each interview was approximately 60-minutes in duration and was recorded. After rapport was established and the definition of NTPA was understood, all interviews commenced with the opening question "Can you please tell me about your experiences promoting non-treatment physical

activity?” The following topics were used to facilitate further discussion if the physiotherapist needed help choosing topics to discuss:

- The perceived barriers and facilitators to NTPA;
- Compatibility of NTPA promotion and physiotherapy;
- The support available to promote NTPA;
- The tools used to promote NTPA;
- Planning involved to promote NTPA;
- How patient presentation and expectations influence plans to promote NTPA; and
- The skills and training needed to promote NTPA and change patient behaviour.

### *2.5. Data analysis*

Interviews were transcribed verbatim, read several times and summaries of each transcript were produced to foster familiarisation with the interviewees’ responses prior to entering data into NVivo 11 qualitative software (QSR International Pty Ltd, Melbourne, Australia). Codes were used to identify emergent and superordinate themes after repetitive interpretation and summarising [11]. Pseudonyms were used to identify quotes and de-identify interviewees. The Behaviour Change Technique Taxonomy was used to code the behaviour change techniques (BCTs) used to promote NTPA [19]. The written analysis and reasoning leading to the identification of emergent themes was reviewed by all interviewees prior to finalising superordinate themes. Consensus was reached with all interviewees, confirming accuracy of transcript interpretation, before additional evaluation by the authorship team. Emergent and superordinate themes were evaluated by two authors and, in the case of any discrepancies, final superordinate themes were decided by consensus with the research team.

## **3. Results**

### *3.1. Interviewee characteristics*

Ten interviewees were individually interviewed. The majority of interviewees worked in metropolitan private practices, saw more than 15 patients each week and had been practicing physiotherapy for longer than 5 years (Table 1). More than half of the interviewees were aged between 25–34 years, female and physically active. Most interviewees reported promoting NTPA.

### *3.2. Key themes*

The themes identified from the interview transcripts were categorised into five emergent themes and four superordinate themes (Table 2).

**Table 1.** Demographic information of the 10 physiotherapists who participated in an interview on their experiences promoting non-treatment physical activity.

		n
Age	18–24	1
	25–34	7
	35–44	1
	45–54	1
Sex	Female	8
	Male	2
Work setting	Private practice	9
	Outpatients	1
Patients treated weekly	1–5	1
	6–15	1
	16–25	4
	26 +	4
Work location	Metropolitan	7
	Rural or regional	3
Years practicing physiotherapy	0–2 (graduate)	1
	3–5 (graduate)	3
	6–10 (experienced)	3
	11–15 (experienced)	1
	16 +(experienced)	2
Exercise science education*	Yes	4
	No	6
Health promotion education*	Yes	2
	No	8
Psychology education*	Yes	2
	No	8
PA level	Active <sup>^</sup>	6
	Half active <sup>#</sup>	3
	Inactive	1
Frequency of NTPA promotion	All of the time	2
	Often	5
	Sometimes	2
	Rarely	1
	Never	0

Notes: <sup>^</sup>Defined as meeting the minimum recommended physical activity level.

<sup>#</sup>Meeting recommended levels of cardiovascular OR strength activity.

\* Having education in these areas was defined as having additional qualifications (e.g. diploma) or attending at least 10 hours of educational classes (e.g. professional development workshops).

‘Unsure’ results are not reported.

**Table 2.** The superordinate and emergent themes that arose from interviews with 10 physiotherapists about their experiences promoting non-treatment physical activity.

Superordinate themes	Emergent themes
Internal and external influences on NTPA promotion	Physiotherapist belief Patient expectations Workplace factors
Approach taken by the physiotherapist towards NTPA promotion	Use of behaviour change techniques Referral to other professionals
Challenges experienced when promoting NTPA	-
Skills and training	-

### 3.3. Internal and external influences on NTPA promotion

#### 3.3.1. Physiotherapist belief

Most interviewees believed that they were well-placed to promote NTPA. Many interviewees thought each consultation should involve a discussion about healthy behaviours to ensure holistic care, with PA being considered a healthy behaviour that can also prevent subsequent injury.

*“If they got a little bit fitter then probably their back pain would probably disappear or their knee pain would disappear or, actually, just their whole general mood would improve and, thus, most of their things would disappear” IB.*

All interviewees perceived their role to include both treating musculoskeletal conditions and also promoting NTPA, despite them reporting that some patients and doctors think their primary role was to provide hands-on treatment.

*“...physio is very much seen as hands-on here. And it’s expected by the doctors, it’s expected by the patients” FB.*

#### 3.3.2. Patient expectations

Patients were perceived by most interviewees as expecting hands-on treatment, not NTPA promotion. The patient was considered a customer who has paid for a service they have pre-determined. This saw interviewees prioritise providing hands-on treatment or rehabilitation exercises to treat the condition before NTPA promotion.

*“...they’re paying for an appointment and they want you to not talk to them, they want you to put your hands on them” VR.*

Many interviewees reported that patients were surprised when they introduced the topic of NTPA, particularly when the patient could not see how increasing PA levels was related to their presenting complaint. Some interviewees felt this surprise could damage their rapport with the patient. Several interviewees delayed promoting NTPA until they established good rapport (e.g. in later consultations where PA can be discussed in the context of injury prevention) or did not promote it at all to avoid damaging rapport. This problem was particularly evident in recent graduate physiotherapists (within 5 years of graduating physiotherapy) who felt patients trusted them less as they were less experienced.

*“...if it comes from me, and they’ve come to me with a shoulder problem, and they kind of go ‘well how is this even relevant?’ and often they get quite defensive and that’s, quite, (they’re) sort of almost confrontational about the whole thing, which is challenging” IB.*

### 3.3.3. Workplace factors

Several interviewees reported that having a multidisciplinary clinic with an open-plan layout facilitated NTPA promotion by allowing access to other professionals who can help to facilitate PA participation (e.g. exercise physiologists running exercise classes) and for patients to see others exercising. Some interviewees found the open-plan design prompted patients to ask the physiotherapist why others were exercising and if they should do it too, providing an opportunity to discuss NTPA.

Some interviewees reported that including PA messages in newsletters and on social media, as well as having staff actively commuting to work, was one way the clinic itself promoted NTPA to current and potential patients. Having management staff who promoted NTPA to their patients, valued health promotion and encouraged staff to learn how to promote NTPA made some interviewees feel NTPA promotion was their job.

*“The partner who is driving this wellness and health promotion (program) is fantastic, he works tirelessly, we have new styles of classes being added, a high-intensity post-natal exercise class, that’s in the last 12 months” FB.*

Most interviewees thought short consultation times (especially when patients present with multiple concerns), tight appointment schedules, uncertainty regarding insurance funding for NTPA promotion, and the expectation to only deliver services that patients expect contributed to less NTPA promotion.

Some workplaces had policies encouraging physiotherapists to refer patients to exercise physiologists for NTPA promotion. This made some interviewees feel their role was being restricted to treatment only, however others liked being able to refer the patient to another skilled professional.

*“Our exercise physiolog(ists) get all our general physical activity ones, specifically physical activity. I’ll often get people who will be sent to me because they might have a large falls risk and they can’t do activity because they’re such a big falls risk or because they’ve got knee pain and they can’t do their other things” IB.*

### 3.4. Approach taken by the physiotherapist towards NTPA promotion

Interviewees reported that patients responded better to NTPA advice if it considered their preferences (e.g. NTPA advice included active commuting if the patient enjoyed bike riding) and their symptoms. Tailoring PA advice often involved adding additional support (e.g. providing a referral to an exercise physiologist) or not prescribing the levels of PA outlined in the guidelines (e.g. 150–300 minutes of walking). Some interviewees felt prescribing enough walking to meet the guidelines was too much for someone who was currently inactive, potentially deterring the patient from doing any activity.

*“For someone who’s done nothing, for you to tell them that they need to do 30 to 60 minutes of physical activity most days, at least 5 days a week, that’s going to be a bit overwhelming” BK.*



### 3.4.1. Use of BCTs

Interviewees reported using *goal setting (behaviour)*, *action planning*, *graded tasks*, *problem solving*, *self-monitoring of behaviour* and *social support (unspecified)* to promote NTPA.

Self-monitoring devices (e.g. pedometers) were used by some interviewees to help patients monitor their activity levels. Interviewees reported that electronic devices and apps were more trustworthy and easier to use compared to conventional methods (e.g. paper-based exercise diary).

*“She could actually see what she was achieving and she could see fluctuations and then she could correlate the number of steps with how well she was sleeping and how she was feeling”* DB.

Some interviewees avoided using incentive and reward BCTs. Techniques to incentivise or reward a patient for being active were considered short-lasting and not conducive to long-term change.

*“...have you actually kind of addressed why it was a problem or have you just kinda given them some sort of carrot, which in the short term is OK, but in the long term is that going to be very sustainable?”* IB.

*Social comparison* was used by some interviewees who felt comparing inactive patients to active patients could motivate them to improve. In contrast, those who did not use it felt this BCT had the potential to demotivate patients if they felt they could not achieve the same amount of PA.

*“I guess that can go either way, so like sometimes the patient is like ‘oh everyone is so much better than me, I’m never going to be that good’ and sometimes they’re like ‘oh yeah, that looks really interesting, that kind of looks fine’”* KM.

### 3.4.2. Referral to other professionals

Most interviewees reported referring patients to trusted professionals for guidance to increase PA levels once the patient’s symptoms had improved. Interviewees considered experience, education and open communication as determinants of trust.

Most interviewees were unlikely to refer patients to professionals who lacked experience with injured patients. Having high-level skills and education in exercise prescription and injury prevention was considered necessary to avoid symptom aggravation and subsequent injury. High-level skills were considered those learnt during a university degree, meaning interviewees often referred patients to exercise physiologists before personal trainers.

*“You have to have done your time (study), um because yeah, because I do get a lot of clients out of it (personal training) and because they go into it too hard too quick with patients and they get injured”* BK.

Exercise physiologists were considered specialists in NTPA promotion for certain conditions (e.g. chronic disease) by many interviewees. Several interviewees would begin the discussion about increasing PA levels with patients and then refer them to an exercise physiologist for ongoing guidance.

*“I think I have a base level of skill and I think they (exercise physiologists) do it better as an ongoing thing. I think they have more skill in it, yeah I think we get a very baseline level at uni, I think you pick up skills as you go depending on who you work with”* IB.

### 3.5. Challenges experienced when promoting NTPA

Patients who were hesitant to increase their PA levels or had little motivation to become physically active made NTPA promotion difficult for most interviewees. Several interviewees felt the patient needed to be “*ready to change*” (KM) before they could help them.

*“I’ll say, you know, ‘if you, if you change your mind, if you’re interested, I’m here, you can book an appointment any time and just come in and we’ll just start talking through your goals, but I can see that you’re not ready yet’. So, I mean, you know, you need to be ready and you need to want to do it. I can’t, I can’t force you there basically”* FB.

Some interviewees felt frustrated when patients resisted their advice to become physically active, making them feel powerless, which impacted their job satisfaction.

*“I kind of feel worthless. Like, what are we doing here? Is it worth you continuing or...if you’re not gonna listen to anything or do anything?”* KM.

Consistent with this, FB commented:

*“...makes me wanna quit physio some days. Some days you just feel like you’re pushing the snowball back up hill, you know, but, you gotta, you gotta enjoy your wins, as few and far between as they are”* (The wins were interpreted as when a patient improves their PA levels in some way).

Some interviewees reported that they were not confident promoting NTPA, making them less likely to do it themselves and instead they would refer the patient to an exercise physiologist. One interviewee recited feeling uncomfortable when presented with a patient who only wanted NTPA promotion. This interviewee was not used to only promoting health within consultations.

*“Yeah it made me quite on edge...trying to ask them and lead them to me maybe having a look at their neck to see if there’s any stiffness there, you know, treat them for something!”* VR.

### 3.6. Skills and training

Many interviewees felt that any confidence they had to promote NTPA came from having health promotion skills and clinical experience. Several interviewees reported the NTPA promotion and behaviour change skills they possess came from clinical and personal experience (e.g. using techniques that have worked for themselves, or were suggested by patients or peers).

*“I haven’t learnt anything about behaviour change techniques or motivational interviewing. If you asked me to give you the definition of motivational interviewing I wouldn’t have a clue”* SB.

Most interviewees wanted more training in NTPA promotion and behaviour change. Specifically, they wanted to learn techniques to help unmotivated patients to increase their PA levels.

*“Motivation’s really hard. Um, that’s probably the thing I struggle with most because if they don’t want to do it then they won’t do it”* KM.

Graduate and experienced (graduated from physiotherapy more than 5 years ago) interviewees felt learning about NTPA promotion needed to occur in the professional development setting, as opposed to university, as an appreciation for health promotion was considered to increase with experience. Face-to-face (e.g. lectures, conferences) and online (e.g. online courses, journals and social media) methods were used by interviewees for professional development on various topics, with online methods considered better if no task practice was required. Several interviewees suggested a professional development workshop run by their workplace or professional association and facilitated by a behaviour change expert would help them to learn how to promote NTPA.

However, the cost and travel necessary to attend a workshop for rural and regional physiotherapists made their attendance unlikely.

*“...by the time you get flights...there’s half my PD budget gone...getting to Sydney or Melbourne is probably 400 bucks at a minimum” FB, split quote.*

#### 4. Discussion

Physiotherapists believed that NTPA promotion is part of their role. However, it can be difficult to do. Physiotherapists reported tailoring their promotion approaches to the patient and using BCTs that they have learnt clinically, rather than at university. Workplaces that had staff who promoted NTPA and had an open-plan and multidisciplinary environment made NTPA promotion easier for physiotherapists. Physiotherapists often faced resistance from patients who attended physiotherapy sessions not expecting NTPA promotion but instead only expecting treatments for their presenting condition (e.g. hands-on therapy and exercises). Barriers like these, as well as low patient motivation and physiotherapist confidence in changing behaviours, resulted in many physiotherapists feeling frustrated and promoting NTPA less, or referring the patient to exercise physiologists. Most physiotherapists wanted additional training in changing behaviours of unmotivated patients and saw behaviour change experts as integral to this.

Physiotherapists in this study felt it was part of their role to promote NTPA, despite some patients and doctors seeing their role mainly in treatment. This finding is supported by a recent Australian survey that reported 98.8% of physiotherapists agreed it was their role to promote PA [20]. Results from a small Australian study of physiotherapy patients suggest that patients feel it is the role of the physiotherapist to promote NTPA. The Health Promoting Pilot Program run in Victoria, Australia over 2014–2015 surveyed 59 physiotherapy patients and found that 94.5% believed it is the role of the physiotherapist to promote NTPA [21]. Patients accepted that they would receive NTPA promotion from their physiotherapist because it was their role to do this [21]. Therefore, physiotherapists’ perceptions that patients expect hands-on therapy more than NTPA promotion might not be accurate in all cases.

Physiotherapists found their workplace could influence how easy NTPA promotion was by valuing health and PA promotion, providing an exercise-promoting environment and using advertising that includes PA messages. These findings are similar to those in a recent qualitative study that reported organisations facilitate PA promotion when they have values in-line with PA promotion, leaders committed to delivering promotion programs and appropriate facilities to support exercise [22]. Therefore, there are likely to be several factors external to the physiotherapist that influence NTPA promotion.

The clinic environment and the advertising used by the clinic can frame patients’ expectations of the service they will receive at that clinic [23]. Patient expectations are not met when advertising is not consistent with the services delivered; this can lead to patient dissatisfaction [23]. For example, having an image of someone getting a massage on the clinic window advertises a hands-on service, thus patient expectations might not be met when the physiotherapist promotes NTPA instead of providing massage. Not meeting the expectations of patients acted as a barrier to many interviewees promoting NTPA in this study. This finding is supported by a recent study that reported patients expecting passive therapy was a barrier for chiropractors prescribing exercise for low back pain management [24]. Additionally, not being able to promote NTPA, albeit clinically

indicated, due to the need to meet patient expectations (e.g. for massage) was expressed with frustration by several physiotherapists in this study, suggesting difficulty promoting NTPA might induce job-specific frustration. This type of conflict-induced frustration can contribute towards employee dissatisfaction [23]. Changes to the services advertised by a clinic (e.g. using people who are exercising in advertising) might make NTPA promotion easier for physiotherapists.

Musculoskeletal physiotherapists might not feel confident using psychology-based behaviour change interventions [25]. Physiotherapists in this study who were not confident promoting NTPA thought it was because they lacked the behaviour change skills necessary to do it. Australian podiatrists (another profession that has a role in PA promotion) have also reported that they lack behaviour change skills, limiting PA promotion [26]. Lack of PA counselling skills has been reported to reduce the odds (OR = 0.165, 95%CI 0.038 to 0.710) a physiotherapist will promote PA [20]. This might suggest additional training is needed, as training might improve confidence in delivering behaviour change interventions [27]. However, receiving training in how to deliver behaviour change interventions does not always mean that such interventions are delivered more often [28,29]. Thus, training in NTPA promotion alone is unlikely to lead to NTPA being promoted more often.

Physiotherapists stated that the behaviour change skills necessary for NTPA promotion came from clinical and life experience, as opposed to more formal (university or professional development) learning environments. A recent phenomenological study also found that life, learning and clinical experiences all influenced physiotherapists' practice [30]. Therefore, training and support for NTPA promotion might be best delivered within the clinical environment as opposed to a formal learning environment. Having PA champions has been suggested by health care professionals as useful to support them to promote exercise to patients with breast cancer [31] and are considered facilitators to health and PA promotion by primary care professionals [32] and stakeholders [16]. Having current staff who are PA champions who can provide formal (e.g. internal workshop) and informal (e.g. lunchroom discussion) support for NTPA promotion can provide the information physiotherapists seek while also avoiding any travel related barriers associated with formal education.

There are some potential limitations to this study. Social desirability bias might have been present between the interviewees and interviewer who were all physiotherapists. This might have seen interviewees change their responses to questions to please the interviewer or avoid ridicule. The use of telephone interviews in place of face-to-face interviews could be considered an inferior method of data collection due to the lack of non-verbal communication and increased reliance on verbal acknowledgements [33]. However, telephone interviews have been used successfully before for qualitative data collection and are considered a valuable alternative for when interviewees cannot attend in person [34]. Using telephone interviews allowed for more physiotherapists to participate in this study, particularly those who lived in rural and regional areas or did not have access to internet. Finally, following Yardley's criteria when designing and conducting this study provided the framework necessary for a high-quality study and ensured transparency when reporting findings.

## 5. Conclusion

Physiotherapists felt they were well placed to promote NTPA but faced several challenges. The apparent need to meet patient expectations and the modest perceived ability to change the behaviour

of unmotivated patients made NTPA promotion difficult for physiotherapists. Nevertheless, physiotherapists often tailored their PA advice to the patient, used BCTs to support PA adoption and referred patients to exercise physiologists for additional guidance. Physiotherapists felt NTPA promotion was facilitated by several workplace specific factors, notably having an open-plan environment and senior staff who valued NTPA promotion. Creating exercise-promoting clinical environments, which allow the physical features of the clinic to promote NTPA, could make NTPA promotion easier and less frustrating for physiotherapists.

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## Conflicts of interest

All authors declare no conflicts of interest in this paper.

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