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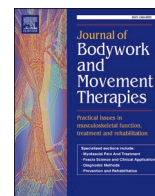
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A comparison of recreational runners' and running coaches' expectations of physiotherapy: A cross sectional study

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ABSTRACT

Objective: This study aimed to characterise and compare expectations about physiotherapy of recreational runners and coaches, aged 18 years plus.

Design: A cross-sectional design was used.

Setting: Participants were recruited through sports clubs and social networks within the Glasgow area of Scotland.

Participants: Recreational runners (109; 60 M, 48F, 1 Other) and athletic coaches (13; 9 M, 4F) were recruited.

Main outcome measure: The Expectations About Athletic Trainer (EAAT) questionnaire was used to characterise expectations about physiotherapy. The EAAT has 66 questions summarised as 18 factors within three categories and reported on a 1 (strongly disagree) to 7 (strongly agree) Likert scale. The association between expectations and sociodemographic, sport participation, injury history and physiotherapy history variables was assessed using ANCOVA models.

Results: Data suggested that there was not a distinct difference in expectations between athletes and coaches and that genuineness (A = 6.10: 5.89–6.32, C = 6.10: 5.63–6.57) (mean:95%CI A = Athletes, C=Coaches), trustworthiness (A = 5.78: 5.59–6.00, C = 6.05: 5.70–6.40) and responsibility (A = 6.00: 5.83–6.17, C = 6.03: 5.69–6.39) were the highest and empathy (A = 3.54: 3.29–3.78, C = 3.18: 2.60–3.75) the lowest expectations. Previous physiotherapy with mental skills training had a significant positive influence on expectations. Generally, those at college/university level of sport had lower expectations.

Conclusions: Key expectations of recreational runners and coaches about physiotherapy are highlighted with results suggesting no differences. Previous mental skills training (as part of physiotherapy) appeared to enhance expectations, suggesting this should be a key component of delivery. Adaptation of delivery of physiotherapy practice in college/university level of sport may be necessary to ensure relatively low expectations do not affect outcomes.

1. Introduction

It has been reported that over 10 million recreational athletes in the European Union get injured per annum, leading to reduced quality-of-life and/or long-term disability if suitable rehabilitation is not undertaken (Petridou et al., 2003; Filbay et al., 2018). High injury prevalence occurs as recreational athletes lack injury prevention knowledge, consequently seeking medical attention more frequently (Kemler et al., 2018).

Recreational athletic coaches can support, encourage, and guide athletes to external medical staff (Moreland et al., 2018). A physiotherapist's role in supporting recreational runners is to minimise time out of sport, supporting athletes through use of the biopsychosocial

model (BPSM), incorporating physical, emotional, and psychological wellbeing as components of optimal recovery (Engel, 1997, Arvinsen-Barrow et al. 2010). Acknowledging client expectations is important, especially as unmet expectations affect rehabilitation outcomes, with rehabilitation compliance already low in recreational athletes (Engel, 1997; Kunstler et al., 2019).

Athletes' expectations have been previously explored using questionnaires (e.g. Expectation about Athletic Trainer (EAAT) (Clement et al., 2012), Medical Interview Satisfaction Scale (MISS) (Matsuno Athletes' Perception Scale (MAPS) (Meakin and Weinman, 2002; Matsuno, 2013, Lyons-Thomson 2014). These have helped to link previous experience (e.g. of mental skills training (MST) (Lee, 2011)) with expectations and also emphasised the importance of three-way

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communication and understanding between athletes, coaches and professionals such as physiotherapists (Washington-Lofgren et al., 2004).

Considering the close athlete-coach relationship and high number of recreational athlete injuries, it is important to identify athletes' and coaches' expectations about physiotherapy to help inform physiotherapists' practice (Dejong-Lempke and Hertel, 2022; Lisinskiene and Lochbaum, 2022). Any disparity in expectations could influence the success of coach prescribed physiotherapy interventions. There is limited literature exploring expectations and further understanding is needed to help physiotherapists shape physiotherapist-client interactions. While it was hypothesised that expectations about physiotherapy would be similar for recreational runners and running coaches, this study aimed to characterise expectations and to identify any differences.

2. Method

2.1. Recruitment and participants

A cross-sectional convenience sample was recruited of athletes and coaches from 30 Glasgow based athletic clubs and via word of mouth and snowballing. Participants had to be over 18 years of age, involved in amateur running and not coaching or participating at above national level. All such athletes and coaches were considered to be 'recreational runners (coaches)' from the point of view of this study.

Participants were forwarded an email from their athletic club secretary, who received the questionnaire with an introduction email from the lead author. The questionnaire was further shared between participants online through social media.

Glasgow Caledonian University, School of Health and Life Sciences, Research Ethics Committee granted study approval (HLS/PSWAHS/22/229) April 2023 and the declaration of Helsinki and data protection regulations were followed. All participants gave informed consent.

2.2. Instrument

A questionnaire (see [Supplementary Material S1](#)) was distributed (June 2023) via an online platform, SurveyMonkey, with an attached introductory letter. As an integral part of the questionnaire, participants gave informed consent before being allowed to proceed.

First sociodemographic, sport participation, injury history and physiotherapy history data were collected. Then, the EAAT questionnaire was used (with permission from the author (Clement et al., 2012)). The term 'physiotherapist' was used instead of 'athletic trainer' (AT) within the EAAT questionnaire, to align with the current study aims. The expected meaning of the factors within the EAAT has been previously presented (Clement et al., 2012) ([Supplementary Material S2](#)). The EAAT questionnaire includes 66 closed questions, with responses measured on a 7-point Likert scale; 1 'strongly disagree', 2 'disagree', 3 'moderately disagree', 4 'neutral', 5 'moderately agree', 6 'agree' and 7 'strongly agree' ([Supplementary Material S1](#)). It has been reported that the EAAT questionnaire obtains excellent test-re-test reliability (0.94), having good convergent validity and general correlation (0.60–0.80), indicating acceptable item intercorrelation (Clement et al., 2012; Lyons-Thomas, 2014; McCrae et al., 2011).

To define how participants should contextualise the questions the following statement was provided (adapted from Lee, 2011):

"For all athletes and coaches. Imagine that you are injured and about to see a sport physiotherapist for your first visit. We would like to know what you think about visiting a physiotherapist for sports injury rehabilitation. The following questions will include a number of statements about physiotherapy and MST. In each instance you are to indicate your level of agreement regarding what you expect the physiotherapy visit to be like."

The EAAT covered four categories, containing subdivisions: 'personal commitment' ('responsibility', 'openness', 'motivation',

'attractiveness', 'immediacy', 'concreteness', and 'outcome'), 'facilitative conditions' ('acceptance', 'confrontation', 'genuineness', 'nurturance', 'trustworthiness', 'tolerance', and 'self-disclosure'), 'physiotherapy expertise' ('authority/directiveness', 'empathy', 'expertise') and 'realism'.

2.3. Data analysis

Questionnaire data collected through SurveyMonkey was exported to Statistical Package for the Social Science (SPSS) 23.0 for analysis. The EAAT questionnaire was the primary outcome measure generating 18 factors, created from 66 questions ([Supplementary Material S1](#)). The outcome factors were calculated as the mean value of all questions that constituted that factor. Although Likert scale data can be considered to be ordinal rather than scale data, description of the data using mean and SD was used for illustrative purposes and the data have been treated as continuous scales for data analysis purposes (Norman, 2010).

Athletes' and coaches' scores were compared using either the Mann-Whitney *U* test or paired sample *t*-test depending on the normality of the data distribution. The significance level was set at $p < 0.05$ (Phillips et al., 2021).

Exploration to identify which of the sociodemographic, sport participation, injury history and physiotherapy history variables explained the largest proportion of variance in EAAT responses was performed using univariate analysis of variance with covariates (ANCOVA). To identify statistically significant predictors of the EAAT factors, the full linear regression model was reduced using a backward stepwise elimination method. Independent variables were eliminated one by one starting with the least significant contributor (highest *p*-value) until all remaining were significant (Chowdhury and Turin, 2020).

The category 'realism' was excluded due to the need for contextual interpretation and the lack of clarity from previous studies on how it was interpreted (Clement et al., 2012).

3. Results

Overall 212 people started the questionnaire, but 90 (42%) stopped partway through. Partial responses were excluded from further analysis. The questionnaire was completed by 109 athletes (60 M, 48F, 1 other) and 13 coaches (9 M, 4F). Most athletes (~61%) were 20–29 years old, while most coaches (76%) were aged between 20 and 39 years. Most athletes had been undertaking recreational running for 6–10 years (32.11%), with road running prevailing (35.78%) ([Table 1](#)). Whereas coaches had generally been involved for 0–5 years with most coaches in the 'other' athletic type category (30.77%) or general total track events combined (38.45%).

Overall 105 (96.3%) athletic participants had had an injury, with many suffering from acute and over-time injuries (60.6%). In comparison, 12 (92.3%) coaches had had an injury, with most (76.9%) affected by acute and over-time injuries ([Table 1](#)).

Most athletes and coaches had previous physiotherapy experience (86% and 92% respectively). Previous experience of physiotherapy had involved MST for 43% of athletes and 38% of coaches. Of those exposed to MST, 89% of athletes and 80% of coaches reporting that MST accelerated rehabilitation.

Expectations about 'genuineness', which includes physiotherapists being honest and respectful, scored highest for both athletes (6.10, 95% CI 5.89–6.32) (mean, 95% confidence interval) and coaches (6.10, 95% CI 5.63–6.57) ([Table 2](#)). In contrast 'empathy', classified as physiotherapists listening empathetically and being able to express athletes feelings, scored lowest for athletes (3.54, 95%CI 3.29–3.78) and coaches (3.18, 95%CI 2.60–3.75). Within 'personal commitment'; 'responsibility' and 'immediacy' expectations both scored highly for athletes (6.00, 95%CI 5.83–6.17; 5.91, 95%CI 5.73–6.10) and coaches (6.03, 95%CI 5.69–6.39; 5.69, 95%CI 5.32–6.06). 'Trustworthiness' for

Table 1

Sociodemographic, sport participation, injury history and physiotherapy history of athletes and coaches (See [Supplementary Material S3](#) for visual representation of key variables).

Variable	Athletes		Coaches	
	Number	Percentage	Number	Percentage
Gender				
Male	60	55.1%	9	69.2%
Female	48	44.0%	4	30.8%
Other	1	0.9%	0	0.0%
Age (years)				
18–19	9	8.3%	0	0.00%
20–29	66	60.6%	5	38.5%
30–39	17	15.6%	5	38.5%
40–49	11	10.1%	1	7.7%
50–59	5	4.6%	0	0.0%
60–69	1	0.9%	1	7.7%
70+	0	0.0%	1	7.7%
Level of sport				
Recreational	58	53.2%	2	15.4%
College/university	5	4.6%	2	15.4%
Regional	20	18.4%	3	23.1%
National	21	19.3%	6	46.2%
Other	5	4.6%	0	0.0%
Athletic type				
Track-sprint distance	11	10.1%	1	7.7%
Track-middle distance	11	10.1%	2	15.4%
Track-long distance	2	1.8%	1	7.7%
Track-hurdles	2	1.8%	0	0.0%
Multiple track distance (track total)	2	1.8%	1	7.7%
	(28)	(25.7%)	(5)	(38.5%)
Road running	39	35.8%	1	7.7%
Trial running	9	8.3%	0	0.0%
Cross country	1	0.9%	1	7.7%
Multiple athletic types	20	18.4%	2	15.4%
Other (athletic type unknown)	12	11.0%	4	30.8%
Years involved				
0–5	30	27.5%	5	38.5%
6–10	35	32.1%	4	30.8%
11–15	24	22.0%	2	15.4%
16–20	13	11.9%	1	7.7%
21–25	3	2.8%	0	0.0%
26–30	1	0.9%	0	0.0%
31–35	1	0.9%	0	0.0%
36–40	2	1.8%	0	0.0%
41–45	0	0.0%	1	7.7%
46–50	0	0.0%	0	0.0%
51+	0	0.0%	0	0.0%
Hour's training/coached per week				
1	1	0.9%	0	0.0%
2	5	4.6%	1	7.7%
3	14	12.8%	1	7.7%
4	15	13.8%	2	15.4%
5	9	8.3%	1	7.7%
6	12	11.0%	0	0.0%
7	8	7.3%	2	15.4%
8	8	7.3%	1	7.7%
9	1	0.9%	0	0.0%
10	15	13.8%	1	7.7%
11	4	3.7%	0	0.0%
12	8	7.3%	2	15.4%
13–15	7	6.4%	2	15.4%
16–18	1	0.9%	0	0.0%
19–21	1	0.9%	0	0.0%
22+	0	0.0%	0	0.0%
Overall, personal number of sport related injuries				
0	4	3.7%	1	7.7%
1–2	24	22.0%	1	7.7%
3–4	36	33.0%	2	15.4%
5–6	16	14.7%	3	23.1%
7–8	9	8.3%	1	7.7%
9–10	10	9.2%	3	23.1%

Table 1 (continued)

Variable	Athletes		Coaches	
	Number	Percentage	Number	Percentage
11–12	2	1.8%	1	7.7%
13–14	1	0.9%	0	0.0%
15–16	1	0.9%	0	0.0%
17+	6	5.5%	1	7.7%
Type of injuries experienced				
Acute	20	18.4%	2	15.4%
Occurred over time	19	17.4%	0	0.0%
Both	66	60.6%	10	76.9%
None	4	3.7%	1	7.7%
Injury severity				
Minor Injury	31	28.4%	2	15.4%
Moderate Injury	40	36.7%	3	23.1%
Severe Injury	14	12.8%	4	30.8%
Catastrophic Injury	1	0.2%	0	0.0%
Multiple Injury types	19	17.4%	3	23.1%
Not Applicable	4	3.7%	1	7.7%
Past Physiotherapy experience				
Yes	94	86.2%	12	92.3%
No	15	13.8%	1	7.7%
How many injuries have required physiotherapy input.				
1–2	37	33.9%	2	15.4%
3–4	32	29.4%	3	23.1%
5–6	16	14.7%	4	30.8%
7–8	2	1.8%	0	0.0%
9–10	4	3.7%	1	7.7%
11+	3	2.8%	2	15.4%
Not applicable	15	13.8%	1	7.7%
Have mental skills been included in your rehabilitation with physiotherapy?				
Yes	47	43.1%	5	38.5%
No	56	51.4%	7	53.9%
Not applicable	6	5.5%	1	7.7%
Did mental skills help you rehabilitate faster or more completely from sport injury?				
Yes	42	38.5%	4	30.8%
No	5	4.6%	0	0.0%
Not applicable	62	56.9%	9	69.2%

athletes (5.78, 95%CI 5.59–6.00) and coaches (6.05, 95%CI 5.70–6.40) was another important expectation alongside ‘genuineness’, creating a ‘facilitative condition’. Lastly, in ‘physiotherapy expertise’, ‘authority/directiveness’ demonstrated high expectations for athletes (5.76, 95%CI 5.56–5.96) and coaches (5.56, 95%CI 5.25–5.88). Athlete and coaches’ expectations did not appear to be different ($p > 0.05$) except for ‘attractiveness’, with athletes having a higher expectation to enjoy being with the physiotherapist than coaches ($p = 0.027$). However, this analysis did not take into consideration the association of sociodemographic, sport participation, injury history and physiotherapy history variables with the EAAT factors.

Using ANCOVA, across all factors there was no significant contribution of the athlete/coach variable, suggesting no differences in responses could be attributed to this factor (Table 3 and Supplementary Material S4). Similarly, ‘Years involved’, ‘Injury severity’, ‘How many injuries have required physiotherapy input?’ and ‘Did mental skills help you rehabilitate faster or more completely from sport injury?’ did not significantly contribute to models for any of the factors. Surprisingly, previous physiotherapy experience was not a significant contributor in expectation factors, except for ‘openness’ where a higher expectation was demonstrated (+0.875, 95%CI 0.052, 1.662) for those with previous physiotherapy experience.

‘Have mental skills been included in your rehabilitation with physiotherapy?’ was the most common significant contributor to factor models, with a ‘Yes’ response making a positive contribution ranging from 0.359 (95%CI 0.040, 0.678) for ‘responsibility’ to 0.635 (95%CI 0.191, 1.080) for ‘openness’ (Table 3). ‘Level of sport’ was a significant contributor to 7 of the EAAT factors and primarily related to differences between those at ‘college/university’ and those who were in the ‘other’

Table 2

Expectations about physiotherapy (EAAT) questionnaire results by subcategory for athletes and coaches. Factor mean values derived from EAAT responses which are recorded on a 1:7 Likert scale: 1 ‘strongly disagree’, 2 ‘disagree’, 3 ‘moderately disagree’, 4 ‘neutral’, 5 ‘moderately agree’, 6 ‘agree’ and 7 ‘strongly agree’.

Category	Factors	Athletes			Coaches			p-value
		Factor mean	95% CI	SD	Factor mean	95% CI	SD	
Personal commitment	Responsibility	6.00	5.83–6.17	0.89	6.03	5.69–6.39	0.58	0.987
	Openness	5.57	5.33–5.80	1.25	5.23	4.49–5.97	1.22	0.295
	Motivation	5.17	4.95–5.39	1.15	5.21	5.64–5.19	0.71	0.774
	Attractiveness	5.51	5.31–5.72	1.08	4.82	4.09–5.55	1.21	0.027 ^a
	Immediacy	5.91	5.73–6.10	0.98	5.69	5.32–6.06	0.61	0.107
	Concreteness	4.88	4.67–5.10	1.15	4.95	4.35–5.55	1.00	0.894
	Outcome	5.52	5.33–5.71	1.01	5.44	5.07–5.80	0.60	0.277
Facilitative conditions	Acceptance	4.73	4.51–4.95	1.15	4.08	3.39–4.76	1.13	0.060
	Confrontation	4.32	4.08–4.55	1.23	3.87	3.02–4.72	1.40	0.187
	Genuineness	6.10	5.89–6.32	1.15	6.10	5.63–6.57	0.77	0.563
	Nurturance	5.53	5.32–5.73	1.09	5.46	4.88–6.04	0.96	0.635
	Trustworthiness	5.78	5.59–6.00	1.06	6.05	5.70–6.40	0.57	0.487
	Tolerance	4.91	4.71–5.11	1.06	4.51	3.79–5.24	1.20	0.219
	Self-Disclosure	4.12	3.89–4.36	1.23	4.18	3.61–4.75	0.94	0.997
Physiotherapy expertise	Authority/Directiveness	5.76	5.56–5.96	1.05	5.56	5.25–5.88	0.52	0.064
	Empathy	3.54	3.29–3.78	1.28	3.18	2.60–3.75	0.95	0.417
	Expertise	5.02	4.80–5.24	1.17	5.13	4.84–5.42	0.48	0.808
Realism	Realism	4.40	4.24–4.56	0.84	4.22	3.91–4.54	0.53	0.140

CI = confidence interval; SD = standard deviation.

^a = statistically significant.

category. In all cases those at ‘college/university’ had a lower expectation score than those in the ‘other’ category ranging from –2.209 (95% CI -3.693, –0.723) for ‘openness’ to –1.275 (95%CI -2.341, –0.208) for ‘responsibility’.

Significant contributions to factors were present for a number of other variables including sex for ‘acceptance’, age for ‘trustworthiness’, athletic type (various types) for ‘confrontation’ and ‘nurturance’, hours of training/coaching for ‘motivation’ and ‘attractiveness’ and past physiotherapy experience for ‘openness’.

When the full model with all variables was considered (Supplementary Material S4) the importance of ‘Have mental skills been included in your rehabilitation with physiotherapy?’ and ‘Level of sport’ (particular the ‘college/university’ vs. ‘other’ comparison) were emphasised. However, in the final models these variables were not always significant contributors.

4. Discussion

The aim of this study was to explore and compare expectations of recreational runners and coaches about physiotherapy. To the author’s knowledge, this is the first study using the EAAT questionnaire, comparing athletes’ and coaches’ expectations and provides initial exploratory data of this relationship.

Athletes and coaches displayed lowest expectations for ‘empathy’ and ‘confrontation’, highest expectation for ‘genuineness’. When EAAT factors were predicted using a model including all sociodemographic, sport participation, injury history and physiotherapy history variables, the athlete/coach variable was not significant in describing variance for any EAAT factors. ‘Have mental skills been included in your rehabilitation with physiotherapy?’ and a ‘level of sport’ associated with ‘college/university’ were the most important significant contributors in the description of variance in the EAAT factors.

4.1. The magnitude of EAAT factors

A simple statistical test indicated that ‘attractiveness’ was the only factor to exhibit a difference between athletes and coaches (athletes higher, $p = 0.027$). However, when other variables were introduced using ANCOVA analysis it appeared that the ‘athlete/coach’ differences were not as helpful in explaining variance in expectations as other

variables (Table 3). This supports the hypothesis that athletes and coaches have similar expectations of physiotherapy.

The mean value of expectations for ‘empathy’ in athletes and coaches, and ‘confrontation’ in coaches were the only factors with means less than 4 on the 7-point Likert scale, suggesting these factors were less expected of physiotherapists. Likewise, Lee (2011) found athletes had lowest physiotherapy expectations about ‘empathy’ and ‘confrontation’ although, the mean values were neutral, neither agreeing nor disagreeing about these factors being expectations. Previous research exploring physiotherapists’ perspective about empathy found physiotherapists feel empathy is fundamental to aid patient interactions (Pinto et al., 2012; Kidd et al., 2011) and patients expect physiotherapists to empathise (Kidd et al., 2011). Studies exploring coaches’ physiotherapy views also found that they anticipate good communication between the athletes and physiotherapist (Steinmann et al., 2019; Adams et al., 2014; Cutrufello, 2019), therefore physiotherapists must use communication skills correctly, like empathy, to meet expectations (Pinto et al., 2012; Kidd et al., 2011). The EAAT questionnaire’s findings may differ because questions for ‘empathy’ had specific wording (Lee, 2011), causing different question interpretation.

Coaches may not view ‘confrontation’ as being part of a physiotherapist’s role, but instead to be a part of their own. The results suggest that athletes were neither in agreement nor disagreement about expecting ‘confrontation’. Quartey et al. (2019) found no disagreement in ‘confrontation’ or any factors explored, indicating higher expectation levels. However, their study was conducted in Africa where views of a physiotherapist’s role may be different from the UK.

‘Genuineness’ had the highest mean value reported for both athletes (6.10, 95%CI 5.89–6.32) and coaches (6.10, 95%CI 5.63–6.57) suggesting athletes and coaches have a high expectation for physiotherapists to be honest and respectful, building meaningful relationships, encouraging authentic communications, potentially leading to greater patient satisfaction (Beach and Inui, 2006). High expectations of ‘genuineness’ have been previously reported (Lee, 2011; Quartey et al., 2019), reinforced by qualitative research which found genuineness characteristics to be crucial to meet client expectations (Miciak et al., 2018).

Within this study, strong agreement for high expectancies were also placed on ‘responsibility’ (athletes 6.00, 95%CI 5.83–6.17, coaches 6.03, 95%CI 5.69–6.39) and ‘trustworthiness’ (athletes 5.78, 95%CI

Table 3

Significant contributors to the description of variance in EAAT outcomes. Significant contributors after backwards stepwise elimination are highlighted with Beta coefficients and p values. Additionally, variables that were significant in overall ANCOVA models before backward elimination are highlighted (*) with effect direction. Results given as value (95% confidence interval) p value.

EAAT Category	EAAT Factors	Sex (Compared to female)	Age (years) (scale)	Level of Sport (compared to 'Other')	Athletic type (Compared to 'Other')	Hour's training/coached per week (scale)	Overall, personal number of sport related injuries (scale)	Type of injuries experienced	Past Physiotherapy experience. (Compared to no previous experience)	Have mental skills been included in your rehabilitation with physiotherapy? (Compared to 'not used')
Personal commitment	Responsibility			CU -1.275 (-2.341, -0.208) p = 0.020				^a A -ve		0.359 (0.040, 0.678) p = 0.028
	Openness			CU -2.209 (-3.695, -0.723) p = 0.004					0.857 (0.052, 1.662) p = 0.037	0.635 (0.191, 1.080) p = 0.006
	Motivation					-0.128 (-0.248, -0.007) p = 0.038				
	Attractiveness			CU -1.402 (-2.722, -0.082) p = 0.038		-0.149 (-0.284, -0.014) p = 0.031				0.486 (0.100, 0.872) p = 0.014
	Immediacy			^a CU -ve						0.403 (0.052, 0.755) p = 0.025
	Concreteness Outcome			^a CU -ve						^a +ve 0.383 (0.021, 0.744) p = 0.038
Facilitative conditions	Acceptance	M -0.437 (-0.847, -0.027) p = 0.037		N -1.626 (-3.019, -0.233) p = 0.023						0.460 (0.042, 0.878) p = 0.031
	Confrontation			N -1.642 (-2.886, -0.398) p = 0.010	RR -0.973 (-1.733, -0.212) p = 0.013		-0.129 (-0.233, -0.026) p = 0.015			0.603 (0.160, 1.046) p = 0.008
	Genuineness			^a CU -ve						^a +ve
	Nurturance			CU -1.457 (-2.895, -0.019) p = 0.047	CC 2.094 (0.323, 3.866) p = 0.021					0.580 (0.185, 0.979) p = 0.004
	Trustworthiness		0.181 (0.013, 0.349) p = 0.035							0.440 (0.067, 0.813) p = 0.021
Physiotherapy expertise	Tolerance Self-Disclosure			CU -1.668 (-3.134, -0.202) p = 0.026						^a +ve 0.536 (0.097, 0.979) p = 0.017
	Authority/Directiveness			^a CU -ve						^a +ve
	Empathy			^a CU -ve						0.563 (0.118, 1.009) p = 0.014
	Expertise			^a CU -ve				^a A +ve		

For Level of sport: CU=College/University, N = National; For Sex: M = male; For Athletic type: RR = road running, TR = trail running, CC = cross country; For Type of injury: A = Acute.

^a significant results for ANCOVA with all covariates and factors before backwards elimination (effect direction is given); +ve = positive, -ve = negative). The following factors were not significant in either final ANCOVA models or a model with all variables included and are therefore not included in the table: 'Athlete or Coach', 'Years involved', 'Injury severity', 'How many injuries have required physiotherapy input?', 'Did mental skills help you rehabilitate faster or more completely from sport injury?'.

5.59–6.00, coaches 6.05, 95%CI 5.70–6.40), with several more expectation scores above moderate agreement for both athletes and coaches ('openness', 'motivation', 'immediacy', 'outcome', 'nurturance', 'authority/directiveness', 'expertise'). More neutral expectancies were expressed for the remaining factors (scores 4–5, meaning neutral – agreement). Generally, the category of 'personal commitment' produced the highest expectations. However, all categories demonstrated varying factor level expectation values, suggesting that the participants in this study did not perceive a particular coherence to the factors within each category.

4.2. Influential variables associated with EAAT expectations

Previous exposure to physiotherapy, where MST had been used, appeared to have a positive effect on many expectation factors (Table 3), agreeing with previous findings (Lee, 2011). It was noted that less than 50% of participants (athletes, ~43%, coaches, ~38%) had used MST in previous rehabilitation with physiotherapists (Table 1), reflecting the lack of MST used in physiotherapy (Quartey et al., 2019, Arvinen-Barrow et al., 2016). It has been reported that many physiotherapists understand the importance of MST, but feel inadequately trained to use it, leading to underutilisation of MST (Alexanders et al., 2015).

Further exploration to understand why previous MST changed expectations in athletes and coaches would be beneficial. Furthermore, the reasons why only few participants received MST from physiotherapists should be explored, as high-quality physiotherapy should follow the BPSM, which suggests incorporating MST (Engel, 1997; Arvinen-Barrow et al. 2010; Annear et al., 2019).

Previous MST was associated with elevated expectations, corresponding with earlier findings that when athletes are taught about psychological change to succeed, they develop holistic injury understanding, are enabled to take responsibility and be open, empowering growth, emphasising the high expectations of personal commitment (Pierce et al., 2016).

Elevated expectations of 'facilitative conditions' with previous exposure to MST were probably because MST enables emotional investment from both parties, which can increase nurturance, support and encouragement (Lewis and Weigert, 1985), therefore, aiding affective trust development, as the physiotherapist has shown good communication while reciprocating a caring manner, validating the relationship (Lewis and Weigert, 1985; McAllister, 1995). Furthermore, coaches expect psychological and athlete wellbeing support from physiotherapists, as it complements the physical input, progressing recovery (Steinmann et al., 2019; Adams et al., 2014). Coaches expect good communication from physiotherapists as it is vital for relationship development (Cutrufello, 2019). These reasons support why athletes and coaches, who have used MST, have increased physiotherapy expectations.

The second most influencing factor affecting athletes' and coaches' physiotherapy expectations was 'level of sport' at 'college/university' level, associated with significant decreases in physiotherapy expectations (Table 3). This possibly occurred as students starting university/college are in a transitional phase, with high academic pressures, potentially reducing physical activity time, resulting in sport and university coordination challenges (Saez et al., 2021). Granquist et al. (2014) stated 98.3% of 479 AT found poor rehabilitation adherence in collegiate athletes, linking to findings that college/university athletes have lower expectations of taking rehabilitation ownership, suggesting why lower personal commitment expectations presented.

4.3. Clinical implications

This study contributes to physiotherapists' knowledge, suggesting that recreational runners and coaches have similar moderate-high expectations for physiotherapy. Both athletes and coaches considered their highest expectation to be 'genuineness' building on existing evidence

that genuineness is a vital expectation of physiotherapists from both, suggesting these values must be achieved within practice to satisfy all (Washington-Lofgren et al., 2004; Quartey et al., 2019; Miciak et al., 2018).

Athletes and coaches in the current study agreed 'empathy' was their lowest expectation from physiotherapists, contradicting previous research that empathy is highly valued from physiotherapists (Pinto et al., 2012; Kidd et al., 2011; David and Larson, 2016, O'Keefe et al. 2016). However, this anomalous result could be caused by questionnaire wording, leading to interpretation that doesn't align with the concept of empathy used in alternative publications (Lee, 2011), so further investigation of this theme is required to gain a true expectation understanding (Tsang et al., 2017).

Sociodemographic and other characteristics appeared to affect both athletes' and coaches' physiotherapy expectations equally, especially use of MST and college/university athletics level. Physiotherapists need to be aware of these factors, and their impacts, to understand the level of expectation present. Additionally, only a minority of athletes/coaches had previously used MST, suggesting that physiotherapists were not following BSPM (Engel, 1997; Arvinen-Barrow et al. 2010; Annear et al., 2019; Daluiso-King, 2019; Tramonti et al., 2021).

4.4. Limitations

The study used specific closed response questions which were amalgamated to generate the EAAT outcome factors. The outcome factors must therefore be interpreted in relation to the specific questions asked.

Participants were recruited by convenience using contacts within the Glasgow area in athletics clubs and via snowballing. This possibly limits the generalisability of results to a wider population of athletes and coaches. It is possible that the population from which participants were recruited was a biased sample in their experiences of physiotherapy. There may be norms of behaviour in physiotherapists practicing in the area from which participants were sampled that might have influenced the results. For example, it is possible that local physiotherapists demonstrate low levels of empathy, which is reflected in low levels of expectation of empathy from athletes and coaches. Further exploration of wider samples would be necessary to eliminate this possible cause of outcomes in this study. The low number of coaches in comparison to athletes limits the value of the comparison between their reported expectation values. Additionally, recreational runners were not matched with their associated coach. However, this is the first such report and so provides valuable preliminary data, but which should be extended in future studies.

This study provides an exploration of the predictive variables for the EAAT factors using ANCOVA models. Preliminary MANCOVA analysis could have been implemented, but was not as interpretation of the interactions between all 18 factors would have been very difficult. The results of this study must be viewed as exploratory in nature and it is suggested that further data, particularly for coaches, is required to reinforce the observations made.

5. Conclusion

Expectations of physiotherapy as determined using the EAAT are reported for both recreational runners and coaches. This study suggests that expectations of 'genuineness', 'trustworthiness' and 'responsibility' rank highest and 'empathy' and 'confrontation' the lowest. In this study, being an athlete or coach was not a significant predictor of variability in expectations. There was a significant association of previous exposure to MST in physiotherapy with higher expectations across several factors and all three categories of the EAAT. Additionally, in this study it was found that being a college/university level athlete was associated with generally lower expectations of physiotherapy.

This study supports the importance of mental skills training in the

athlete/coach/physiotherapist relationship.

CRedit authorship contribution statement

Pitts K: Writing – review & editing, Writing – original draft, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Stansfield B:** Writing – review & editing, Methodology, Formal analysis, Data curation. **Jeldi A:** Supervision, Methodology, Formal analysis, Conceptualization.

Data sharing

Data are available upon reasonable request. Please direct all requests to the corresponding author.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: None.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jbmt.2025.01.006>.

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