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Are Practicing Physiotherapists Physically Fit? An Observational Study on Fitness during Direct Clinical Care

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Abstract

Background: Physiotherapists need to maintain high physical fitness due to the demands of their profession. However, they may not consistently achieve optimal fitness potentially affecting their productivity.

Aim: To assess physical fitness levels among physiotherapists using standardized field-based tests.

Sample size: 40

Study design: Observational study.

Source of Data: Physiotherapist practicing in clinics, hospitals and medical institutions.

Methods: 40 physiotherapists aged (21–35 years) were recruited as per the selection criteria and assessed via push-up test, wall squat test, plank hold test and toe-touch test.

Results: The mean push-up count was 9.58 (23.95%) of participants classified as Poor. Wall squat test showed 40% unable to hold for >30 seconds. Plank hold average was 71.5 seconds, (45%) as Below Average or Poor. Flexibility assessment showed average results, with no participants achieving excellent scores.

Conclusion: These findings highlight suboptimal physical fitness among physiotherapists, raising concerns about their overall health and functional capacity.

Keywords: Physiotherapy, Physical Fitness, Strength, Push-Up, Plank, Flexibility

Introduction

Physical fitness is defined as "the ability to carry out daily tasks with vigour and alertness, without undue fatigue and with ample energy to enjoy leisure pursuits and to meet unforeseen emergencies"(Caspersen, Powell and Christenson 1985)[1]. Physiotherapy is a physically demanding profession requiring significant levels of physical fitness to meet the challenges of patient handling, therapeutic demonstrations and manual therapy (Multani, Bhawna and singh 2013) [2]. It has been hypothesized in the literature that physiotherapists are more vulnerable to WRMDs (Work Related Musculoskeletal Disorders) due to the repetitive, labour-intensive and patient-facing nature of their work (Kamble and Matondkar 2021) [3] Evaluating the current fitness levels can highlight gaps and help promote strategies to improve personal wellness among these healthcare professionals.

Objectives

To assess lower limb strength and endurance; flexibility, upper body strength and endurance; core strength and stability among physiotherapists using wall squat test, toe-touch test, push-up test and plank test respectively.

Material and Methods

An observational study was conducted on 40 physiotherapists aged 21-35 years. Participants worked at least six hours daily in both OPD and IPD settings. Participants with any known history of musculoskeletal disorders (fractures, back pain), cardiopulmonary conditions (asthma) and neurological disorders were excluded. After obtaining informed consent, demographic and clinical data were collected. Participants were assessed using four field-based physical fitness tests:

- Wall Squat Test (lower limb strength and endurance) (Multani, Bhawna and singh 2013) [2]

- Toe Touch Test (hamstring flexibility and spinal mobility), (Multani, Bhawna and singh 2013) [2], (Kippers and Parker 1987) [4]
- Push-Up Test (upper body strength and endurance), (Parkar and Saini, 2022) [5]
- Plank Hold Test (core strength and stability), (Parkar and Saini, 2022) [5], (Bohannon *et al*. 2018) [6]

Results

Out of 40 participants, 30 were females and 10 were males.

- In Wall squat test 40% demonstrated poor performance (holding <30 seconds) and only 10% achieved excellent results (>150 sec.)
- In Toe touch test 50% displayed average flexibility (1-5 cm) and none achieved excellent flexibility (>10 cm).
- In Push-up test 55% performed poorly (1-4 push-ups), Mean push-up count: 9.58 in Push-up test.
- In Plank Hold Test: 27.5% categorized as below average (30-59 seconds). Mean plank hold time: 71.5 seconds.

Finding

Across most tests, the majority of participants scored in poor to average ranges across fitness domains.

Table 1: Describes the distribution of participants based on the lower limb strength and endurance in wall squat test

Lower Limb Strength and Endurance Measured by Wall Squat Test (Seconds)	No. of Participants	Percentage %
Excellent (>150)	4	10%
Good(90-150)	5	12.5%
Average(60-89)	7	17.5%
Below average (30-59)	8	20%
Poor(<30)	16	40%
Very poor(<10)	0	0%

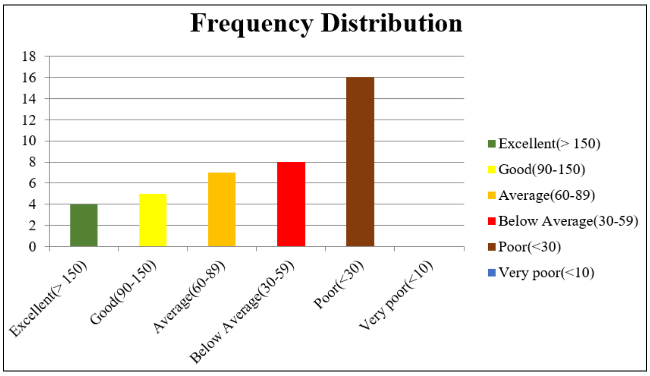

Fig 1: This Graph shows results of wall squat test which shows that the majority of participants (16 out of 40; 40%) fell into the poor category (<30 seconds) the below average (30-59 sec) and average (60-89 sec) categories had 8 (20%) and 7 (17.5%) participants respectively. Only 5 participants (12.5%) reached the good range (90-150 sec) and just 4 participants (10%) qualified as excellent (>150 sec)

Table 2: Describes the distribution of participants based on the hamstring flexibility and spinal mobility

Hamstring Flexibility and Spinal Mobility Measured by Toe Touch Test (Centimetre)	No. of Participants	Percentage %
Excellent(>10cm)	0	0%
Good(6-10cm)	7	17.5%
Average(1-5cm)	20	50%
Below average(0cm)	8	20%
Poor(-1 to -5cm)	4	10%
Very poor(-5 to-10cm)	1	2.5%

Table 3: Describes the distribution of participants based on the upper body strength and endurance

Upper Body Strength and Ebdurance Measured by Push-Up Test (Number)	No. of Participants	Percentage %
Excellent(>40)	0	0%
Good(30-40)	4	10%
Above average (20-29)	3	7.5%
Average(10-19)	5	12.5%
Below average(5-9)	6	15%
Poor(1-4)	22	55%
Very poor(0)	0	0%

Table 4: Describes the distribution of participants based on the core strength and stability

Core Strength And Stability Measured by Plank Hold Test (Seconds)	Number of Participants	Percentage (%)
Excellent (>15O)	4	10%
Good(90-149)	6	15%
Average (60-89)	12	30%
Below Average (30-59)	11	27.5%
Poor(<30)	7	17.5%

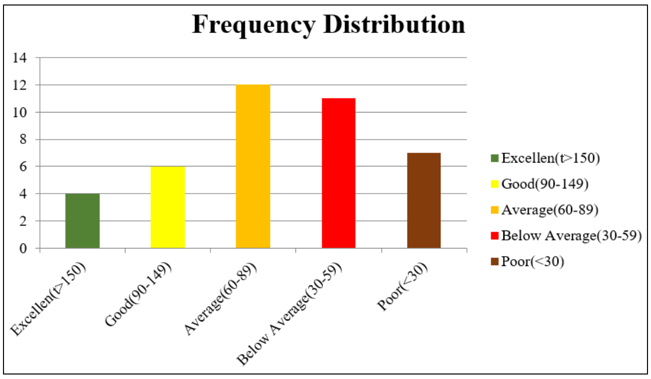

Fig 2: This graph showing the results of plank hold test which shows average hold time of 71.5 seconds. Most participants (11 out of 40; 27.5%) were classified as below average (30-59 sec) and 12 participants (30%) fell into the average (60-89 sec) range. Only 6 participants (15%) performed in the good (90-149 sec) range and 4 (10%) attained excellent scores (>150 sec). A total of 7 participants (17.5%) could not hold the plank beyond 30 seconds and were classified as poor

Discussion

The present study highlights significant deficiencies in physical fitness among physiotherapists. The wall squat test evaluated lower limb strength and muscular endurance, only few participants reached the Good and Excellent categories, a substantial number 40% scored in the Poor range <30 seconds, similiar findings were observed by Multani *et al.* (2013) [2] where a large proportion of physiotherapy students performed poorly in wall squat tests (Multani, Bhawna and singh 2013) [2]. The toe touch flexibility test revealed that half of the students (50%) fell in the average category, very few reaching good levels and none classified as excellent. Additionally, a significant number either just touched the floor (Below Average) or failed to do so (Poor and Very Poor categories). Multani *et al.* (2013) [2] reported contrasting results in this domain, where most students performed well on the toe-touch test but poor results in shoulder flexibility test. Nevertheless, both studies highlight the importance of improving flexibility to prevent musculoskeletal issues. Poor flexibility is likely to increase injury risk, particularly when handling patients or performing repetitive tasks (Multani, Bhawna and singh 2013) [2]. Poor upper body strength and endurance was evident from low push-up counts, upper body strength deficiency was also supported by Ezzatvar *et al.* (2021) [7] and Mahmood *et al.* (2018) [8], who reported poor muscular endurance among physiotherapists in push-up tests (Ezzatvar *et al* 2021, Mahmood T *et al.* 2018) [7, 8] Core stability assessment through plank hold test revealed average performance among most participants, with only 10% achieving excellent scores. Parkar and Saini (2022) [5] also emphasized poor core endurance among female physiotherapists, potentially predisposing them to work-related musculoskeletal disorders (WRMDs), (Parkar and Saini, 2022) [5] These findings emphasize the importance of incorporating structured physical fitness programs within physiotherapy education to minimize WRMDs and enhance clinical performance.

Conclusion

A significant proportion of physiotherapists demonstrated below-average fitness across multiple domains, particularly upper body strength, lower limb endurance, flexibility and core stability. As healthcare professionals, physiotherapists serve as role models for healthy living. Incorporating regular fitness assessments and wellness programs into training curricula may enhance clinical safety and personal well-being.

Ethical Statement

The study was observational in nature, and informed consent was obtained from all participants. Institutional ethics approval was not applicable.

Conflict of Interest

None declared.

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