

Awareness of Fitness Training Principles amongst Fitness Trainers

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Abstract: *There is an increase in awareness of fitness and optimum health amongst literate population in urban India, who regularly visit privately owned gymnasiums. However, there are no set standards for the educational qualifications of the instructors employed in these gymnasiums. Hence there exist lack of knowledge as well as use of prescribed methods of fitness testing and prescription in these professionals. Objective: To determine the level of awareness amongst fitness trainers about the fitness protocols and the principles to be followed for exercise testing and prescription. Method: This is a survey based study conducted using a self devised pre-validated questionnaire. Results: There are lacunas in information, usefulness as well as application of standard methods of pre exercise testing and fitness protocols adopted by fitness trainers for gym going subjects. Conclusion: Lack of standardization of pre-requisite educational qualifications amongst trainers employed in local gymnasiums has led to variability as well as inadequate following of fitness principles and hence less than optimum outcomes of exercises.*

Keywords: Fitness instructors, Fitness principles, Gymnasiums, Exercises.

1. Introduction

In the current era there is an increased awareness amongst general public about the importance of exercises. Local Gymnasiums provide an opportunity to individuals who wish to work on physical activities that are beneficial to health and fitness. Fitness trainers in these gymnasiums cater to the varying needs of the visiting clientele.

Physical fitness is a state of health and well-being which enables an individual to increase his strength, speed and power beyond normal, and enables him/her to carry out daily tasks with vigour and alertness without undue fatigue and with ample energy to enjoy leisure-time pursuits and to meet unforeseen emergencies.^[1] The five components of Physical Fitness are body composition, cardiorespiratory fitness, muscular strength, muscular endurance and flexibility. **Total fitness** is defined by how well your body performs in each of the above categories. These 5 components measure your body's ability to use oxygen as fuel, your muscular strength and endurance, the flexibility of your joints and your total body fat. A range of tests are used to measure these components. Once you've been tested in all five components, a physical fitness regimen can be tailored to your specific needs.^[2] The **Principles of Exercise Training** are specificity principle, overload principle, principle of progression and reversibility principle. The above mentioned principles play an important role to design the specific fitness regime for specific individuals. It also helps to acquire and maintain the training effect.^[3]

As Fitness Trainers in gymnasiums, these **subjects are expected to carry out some specific tasks which include the following:**^[4]

1. Assess the capabilities of individuals through various fitness assessment procedures.
2. Prescribe individual exercise programs for individuals based on the complete fitness assessment.

3. Advise individuals on the correct method and use of exercise machines and devices including weights.
4. Motivate clients to work to his/her maximum and safe potential for the entire workout.
5. Assure all exercises are done with proper form and technique maximizing results.
6. Help clients develop realistic, attainable goals and continually modifying training objectives.

However there do not exist any set standards for minimum educational qualification to be employed as fitness trainers in the gymnasiums. Hence there are bound to be variations in the knowledge as well as application of fitness training principles in these subjects.

Fitness is a vital component of all Physiotherapy management regimes whether preventive, promotive or rehabilitative aspects. It is of special interest to us, as physiotherapists, to determine the level of awareness about various Fitness Training Principles amongst the Fitness trainers employed in local Gymnasiums.

2. Aim & Objective

To find out the awareness of current guidelines of exercise testing and prescription amongst fitness trainers and to know whether or not they perform a complete fitness assessment on an individual before prescribing an exercise.

3. Review of Literature

Malek, moh h et al in their research on **Importance of Health Science Education for Personal Fitness Trainers conclude that** reliable measures of knowledge in the principles of Fitness training are of critical importance in developing an optimal fitness program for the client and for avoiding unnecessary injuries.

Garber et al in their research on **Quantity and Quality of Exercise for Developing and Maintaining Cardiorespiratory, Musculoskeletal, and Neuromotor Fitness in Apparently Healthy Adults: Guidance for Prescribing Exercise** provided guidance to professionals who counsel and prescribe individualized exercise to apparently healthy adults of all ages.

Haskell WL et al in their study on **Physical activity and exercise to achieve health-related physical fitness** components concluded that for health-promoting features of physical activity and exercise the stimulus has to be defined in terms of type, intensity, duration, and frequency of exercise.

4. Material and Methodology.

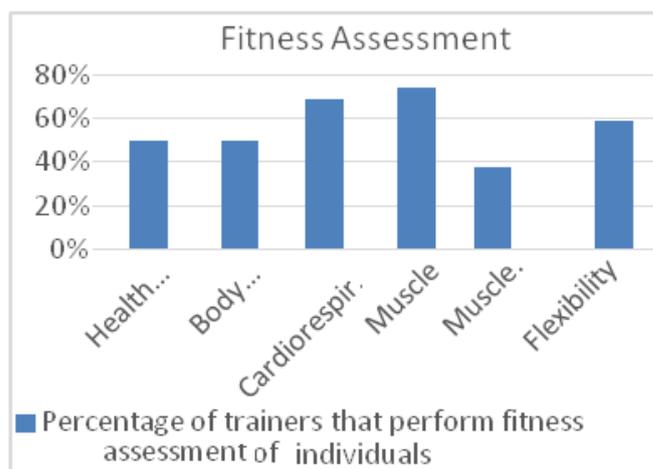
- **Research approach:** Cross-sectional Survey
- **Study Sample:** Fitness trainers.
- **Sample Size:** 100 subjects.
- **Study Setting:** Gymnasiums available to local public situated in Mumbai and Navi Mumbai.
- **Ethical clearance:** The Ethical clearance for the study was taken from the Institutional Ethics committee of Dr. D. Y. Patil University, Nerul, Navi Mumbai. Written informed consent was taken from all the study subjects.
- **Procedure:** A self-devised pre validated questionnaire was administered to the study subjects via a face to face method. A pilot study was conducted and accordingly requisite modifications were made to the questionnaire. Care was taken to keep the Questionnaire Self- Informed & Self -Administered to prevent any misinterpretation. Also as far as possible the questions were closed ended for easier grouping & to prevent any statistical errors. This was done according to the Questionnaire Preparation Guidelines, to increase its validation & reduce any risk of errors.

5. Observations & Results

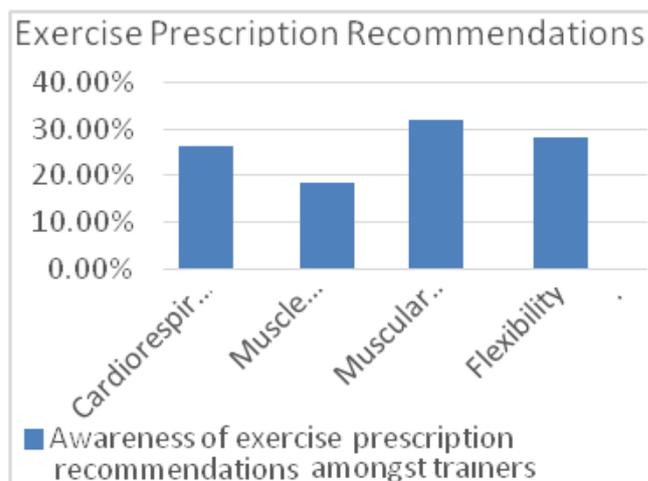
A total of 100 subjects were enrolled in the study. Data were collected on standardized forms and encoded for computerized analysis Descriptive analysis of the data was done using mean, standard deviations & percentages using GraphPad InStat Version3.10, 32 for Windows. Tables were made using Microsoft word and figures were plotted using Microsoft Office Excel 2007.

6. Demographic Details

87% of the study subjects are males and 13% are females. According to the B.M.I. findings, 50% of the subjects do not fall under the normal weight category. 62% of the trainers have a work experience of less than 5 years. 32% of the study subjects do not have any regular qualifications to be employed as Fitness Trainers.



On an average 50% of the trainers do not perform a health screening of an individual before performing any exercise tests on him/her. On an average, 49.6% of the subjects do not calculate the body composition of an individual, 68.8% do not perform exercise tests to assess cardiorespiratory capacity. On an average 74.5% of the trainers do not assess muscular strength, 38% do not perform muscular endurance assessment and 58.8% do not perform a flexibility assessment of an individual before prescribing an exercise plan to them.



26.2% of the subjects are not aware of the prescription recommendations for cardiorespiratory exercises. 18.31% of the subjects are not aware of the prescription recommendations for strength training exercises. 32% of the subjects are not aware of the prescription recommendations for muscle endurance exercises. 28% of the subjects are not aware of the prescription recommendations for flexibility exercises.

7. Discussion

According to the findings, this seems to be a male dominant profession. This could be because male clients as well as female clients are comfortable training with male trainers.

As per the BMI findings it seems that many subjects fall under overweight and obese category, however this could be a misleading finding as weight trainers could have an increased lean muscle mass owing to hypertrophy of muscle

with weight training. Further research can be done on these findings with a proper evaluation of body composition of the study subjects.

The authenticity of the certification of the trainers needs to be closely examined as these so called qualifications range from a few months diploma to a 3 year degree program. Some minimum requisite qualifications to work as a fitness trainer need to be fixed to bring about some uniformity standard in the profession.

Detailed assessment and pre- exercise tests are essential to arrive at target intensity & frequency before prescribing an exercise plan to an individual. Exercise testing is an important tool that can best determine how exercise affects you and provide you with a more effective exercise program.^[5] Hence it is important that fitness trainers perform an exercise test prior to exercise prescription.

The study subjects do not seem to be aware of the importance of checking the blood pressure, pulse rate and respiratory rate before performing exercise tests. According to American College Of Sports Medicine (A.C.S.M) guidelines, there are certain absolute and relative contraindications to exercise testing and prescription. If these are not followed it could lead to undue stress on the system causing unwanted cardiovascular emergencies.^[6]

In regard to overall fitness and health, weight is not nearly as important as the composition of that weight. More important, rather than tracking weight, we should be aware of our body composition.^[7] Skin fold thickness method is a more reliable method to measure body composition in a clinical setting but most of the trainers do not use this method.

Muscle strength assessment tests measure muscular strengths and weaknesses, areas where muscular performance and function are good or where they need improvement. It establishes a baseline for exercise prescription on the basis of the specificity and overload principles of training. In order to apply the principles of training to prescribe exercises to improve muscle strength and endurance it is imperative to carry out a complete strength and endurance assessment.^[3]

Furthermore, where a lower intensity of load for strength training does not give the required results failing to overload the system, a disproportionately high initial load might put undue stress on the musculoskeletal system making the client susceptible to injury. This makes it vital for Fitness trainers to be aware of muscle strength testing & training principles.

The study found that the fitness trainers though are aware of the fact that flexibility exercises are important part of all exercise regimes, the trainers do not insist on stretching exercises to be done prior to all exercise sessions. It is a well laid fact that it is essential to assess flexibility before prescribing an exercise plan in order to prevent any injury during training sessions. Improved flexibility may enhance performance in aerobic training and muscular conditioning.

8. Conclusion

Most of the fitness trainers seem to be theoretically aware of the various principles to be used in exercise training, however application of these training principles for prescription of exercise seems to be absent in these subjects. Also, they do not understand the importance of adherence to exercise testing principles and hence seem to neglect it most of the times.

9. Clinical Implications

Fitness trainers are responsible for the effective delivery of health and fitness programmes. Their roles are of importance to the relevance and efficacy of the fitness industry and therefore there is an emergent need for standardisation and bringing uniformity in the minimum educational requirements for subjects to be employed as Fitness Trainers. Appropriate measures need to be taken by the concerned authorities as well as the Gymnasiums employing them to plan accordingly. It is also important to make the fitness trainers aware of any lacunae in their current knowledge and hence motivate them to upgrade their skills for a more efficient practice.

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References

- [1] C J Caspersen, "Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research," Public Health Reports, www.ncbi.nlm.nih.gov, page 128, Mar-Apr 1985.
- [2] Available:<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1424733/?page=3>
- [3] Matthew Percia et al, "Getting a Professional Fitness Assessment," www.acsm.org, Jan 10, 2012. Available:<http://www.acsm.org/access-public-information/articles/2012/01/10/getting-a-professional-fitness-assessment>
- [4] Carolyn Kisner, Therapeutic Exercise, Foundations and Techniques, 5th edition, Jaypee Brothers Medical Publishers (P) Ltd, India, 2007.
- [5] <http://mtbettenhausen.wordpress.com/equipment/>
- [6] Shannon McSorley, "Why is exercise testing important?" www.pinnacle-pt.com, Jan 17, 2012.
- [7] Available: <http://www.pinnacle-pt.com/blog/post/why-is-exercise-testing-important>
- [8] Michael R. PhD, FACSM et al, "Quantity and Quality of Exercise for Developing and Maintaining Cardiorespiratory, Musculoskeletal, and Neuromotor Fitness in Apparently Healthy Adults: Guidance for Prescribing Exercise," Official Journal of The American College of Sports Medicine, Volume 43, Issue 7, pp 1334-1359, July 2011.
- [9] Tiffany Esmat, Ph.D., "Measuring and Evaluating Body Composition," www.acsm.org, Jan 11, 2012. Available:<http://www.acsm.org/access-public->

[information/articles/2012/01/12/measuring-and-evaluating-body-composition](http://www.ijournal.com/information/articles/2012/01/12/measuring-and-evaluating-body-composition)

[10] Malek, Moh h et al., "Importance of Health Science Education for Personal Fitness Trainers", Journal of Strength & Conditioning Research, February 2002.

Author Profile



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