

## Knowledge Of Principles Of Exercise Testing And Training Amongst Fitness Trainers In Jalgaon City

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### Abstract:

The literate population of urban India, who frequently visit privately run gyms, is becoming more cognizant of fitness and optimal health. The educational background of the instructors working in these gyms is dubious. As a result knowledge and the ability to employ prescribed methods of fitness assessment and prescription, both are questionable. Aim: To assess the knowledge principles of exercise testing and training amongst fitness trainers in Jalgaon. Materials and Method: This survey-based investigation was carried out with the aid of a self-made, pre-validated questionnaire. Results: There are gaps in the knowledge, practicality, and application of pre-exercise testing methodologies and fitness regimens used by fitness trainers with gym-going clients. Conclusion: Lack of uniformity in pre-requisite educational requirements among trainers working in neighborhood gyms has resulted in variability, insufficient adherence to fitness concepts, and subpar exercise results.

**Key words:** Fitness trainers, Principles of Exercise training, Gyms

### Introduction:

Physical exercise reduces the risk of developing CHD, stroke, type II diabetes mellitus, and some malignancies. It also improves emotions of "energetic," well-being, quality of life, and cognitive function, and is linked to a lower risk of cognitive decline and dementia.<sup>[1]</sup> There is substantial evidence that physical fitness and the behaviors that promote it can reduce the risk of sickness and premature death.<sup>[2]</sup>

Local Gymnasiums provide an opportunity to individuals who wish to work on physical activities that are beneficial to health and fitness. Fitness experts working in these gyms play an important role in providing proper knowledge and skills to clients as well as motivating them to participate in fitness activities. A fitness training expert investigates the needs of customers, develops an appropriate exercise program for them, and advises them on the benefits of living a healthy and fit lifestyle.<sup>[3]</sup> A qualified fitness professional must complete a series of professional education courses and pass rigorous qualification exams to ensure that the fitness trainer has the necessary competencies to safely and correctly guide clients in fitness activity. Fitness trainers must also be certified in the knowledge and skills to assess, motivate, and train clients in their health and fitness needs.<sup>[4]</sup> Fitness centers must uphold their standards; thus they should hire professionals who are legally qualified for the job.<sup>[4]</sup>

The Aim of this study is to assess the knowledge of principles of exercise testing and training amongst fitness trainers in Jalgaon city with the objective to evaluate the knowledge principles of exercise testing and training amongst fitness trainers in Jalgaon city.

### Method and Materials:

- Study Design- Cross sectional study (Observational study).
- Study Setting- Gyms available to local public situated in Jalgaon city.
- Study Sample - Fitness trainers
- Sample Size- 100 subjects

Criteria for selection :

- Inclusion criteria:- Individuals who are working as a fitness trainer/general trainer/personal trainer. Trainers who are willing to participate in the study and can read and write English language.

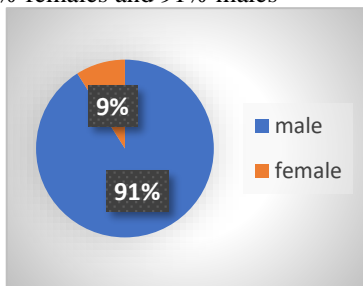
- Exclusion criteria:- Physiotherapists working as personal trainers or gym trainers, Zumba trainers and Yoga trainers.

Procedure: The Ethical clearance for the study was taken from the Institutional Ethics committee. All the participants were screened as per the inclusion and exclusion criteria and were requested to participate in the study. Participants were briefed about the study and informed written consent was obtained. Then the participants were provided with a self-made questionnaire which consists of 16 questions and the participants have to choose the most appropriate answer. The questions in the questionnaire were based on the principles of exercise testing and training. The questionnaire was validated by senior exercise professionals. All the participants were requested to fill the same questionnaire. The data collected was analyzed and results were declared. The institutional ethics committee granted the study's ethical approval. All study participants provided their written, informed consent.

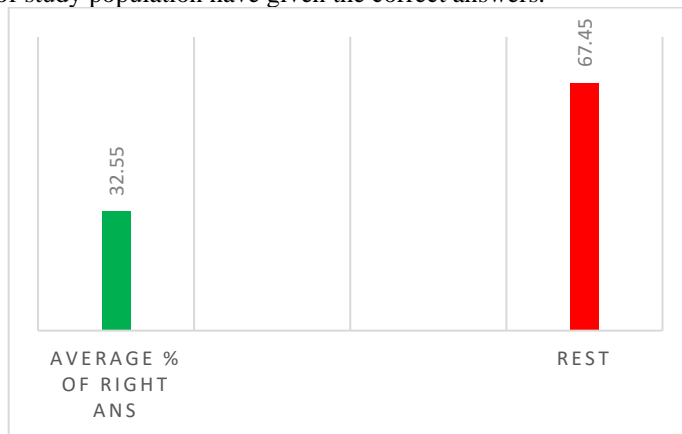
**Results:**

A total of 100 subjects were enrolled in the study. Data was collected on standardized self-made questionnaire and entered in MS Excel. Data was analyzed and results were obtained.

- Among the participants, there were 9% females and 91% males

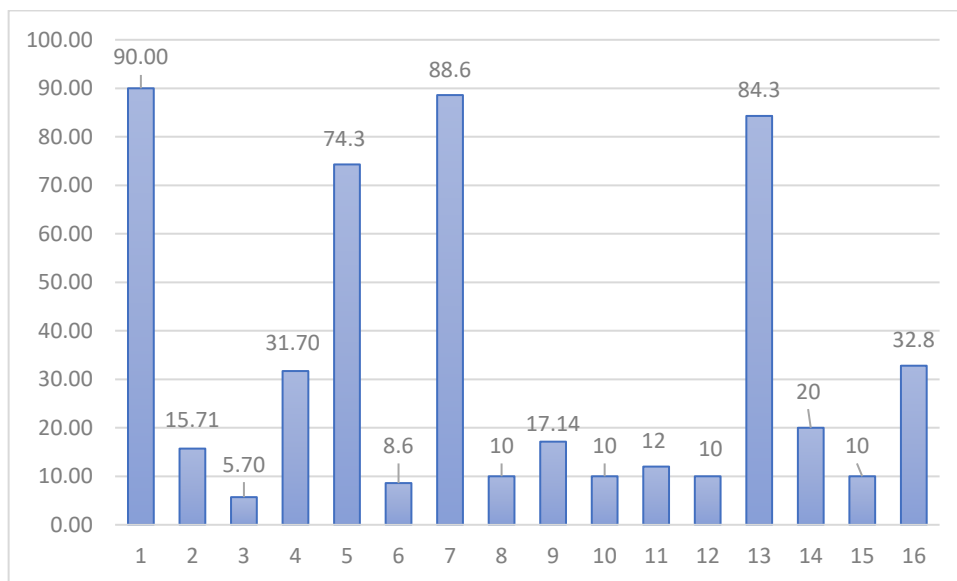


- On an average only 33% of study population have given the correct answers.



- Question-wise percentage of right answers by participants

Questions	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
% of Most appropriate options selected by the participants	90	15.71	5.70	31.7	74.3	8.6	88.6	10	17.1	10	12	10	84.3	20	10	32.8



**Discussion:**

In the study there were 100 participants among which 91% are Male participants and 9% are Female participants. The participants were given a self-made questionnaire for evaluation which is a 16 item questionnaire. Their demographic data was also collected which was also mentioned on the questionnaire. The data obtain with the help questionnaire shows that around only 33% trainers have correctly answered all the questions in the questionnaire.

Among all the trainers participated in the study, 90% of trainers were having either certificate/diploma/degree course in exercise science. Also only 15% participants have more than 5 years of training experience but having more experience may not add more knowledge unless they are well qualified. The credibility of the trainers' certification must be carefully scrutinized, as these so-called qualifications range from a few months diploma to a three-year degree program. Some minimal requirements for working as a fitness trainer should be established in order to bring about some consistency in the field.

Before recommending an exercise program to a person, a thorough evaluation and pre-exercise testing are necessary to determine the target intensity and frequency.<sup>[5]</sup> 78% participants do not obtain physician fitness from clients before prescribing exercise. This may predispose the client to exercise related injury or illness if the patient is unaware of history. So, obtaining physician fitness before beginning with exercise program may reduce the risk of exercise related injury. Exercise testing is a crucial technique that can help you create a more successful exercise program and assess how exercise affects you. Fitness instructors should therefore conduct an exercise test before prescribing an exercise program.<sup>[5]</sup>

The study participants appear to be unaware of the significance of measuring risk factors like blood pressure before undertaking activity testing. There are specific absolute and relative contraindications to exercise testing and prescription, according to American College of Sports Medicine (A.C.S.M) recommendations<sup>[6]</sup>. If these are not followed, it may put unnecessary strain on the system, resulting in undesired cardiovascular emergencies.

Muscle strength evaluation identifies muscle strengths and deficiencies, as well as areas where muscular performance and function can be improved. It creates a baseline for exercise prescription based on the training specificity and overload concepts. A full strength and endurance assessment is required before applying training concepts to suggest workouts to develop muscle strength and endurance.

According to ACSM guidelines acute adaptations following structured regular exercise occur as early as 4 weeks so, assessing clients progress after every 4 weeks will direct the trainer about any changes to be made in further training according to goal.<sup>[6]</sup> In the study, only 31% participants check the progress of their client at every 4 weeks.

There is direct co-relation between VO<sub>2</sub> max and cardiovascular health but only 17% know about the factors affecting VO<sub>2</sub> max.

Result of current study show that only about 10% of the trainers use the components of exercise program while designing a training program such as warm up, conditioning and cool down. Missing any component increases the undue risk.

Progression of exercise accelerates the recovery of client and journey towards goal but 75% of participants were unaware of principles of progression of exercise such as specificity, overload and reversibility.

Irregular or cessation of exercise program may cause detraining effects which alters the program of client, 57% participants do not take into considerations about Detraining effects.

There is popular evidence that High Intensity Interval Training (HIIT) improves overall health still 64% of participants were missing knowledge about HIIT.

So overall, on an average only 33% of study population were able to give the correct answers of the questions mentioned in the questionnaire.

The results of this analysis concur with those of the 2020 study by Chi-Ming Hsieh and Gordon Chih Ming Ku. The study's objective was to determine whether fitness education programs could satisfy the requirements or competences of fitness professionals, including personal trainers and group exercise instructors.<sup>[4]</sup>

The results found in this study are in consistent with the results of the study conducted by Anu Arora and Sana Siddiqui in 2014. Their aim was to find out the awareness of fitness training principles among 100 fitness trainers. Their study also shows that many of the fitness trainers lack the awareness about fitness training.<sup>[5]</sup>

The findings of this study agree with those of a 1985 investigation by Carl J. Caspersen, Kenneth E. Powell, and Gregory M. Christerson. Understanding physical activity, exercise, and physical fitness was the goal.<sup>[7]</sup>

### **Conclusions:**

The majority of fitness trainers appear to have a theoretical comprehension of the many training principles that can be implemented, but it does not appear that these subjects apply these training principles while prescribing workouts.

Furthermore, they tend to disregard workout testing rules the majority of the time since they do not understand the necessity of doing so.

They must be updated after a certain time period. They must keep a watchful eye on the client's general health. Because of the importance of their professions to the relevance and efficacy of the fitness business, there is a rising need for standardization and uniformity in the minimum educational standards for individuals to be employed as fitness trainers. The appropriate authorities must act, and the Gyms that employ them must make the necessary preparations.

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