

**EXERCISE SCIENCE AWARENESS AMONG TRAINERS OF FITNESS
CLUBS IN NORTH DELHI, INDIA**

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Abstract

The twenty first century is witnessing a shocking upsurge in the prevalence of diabetes, obesity, metabolic syndromes and other lifestyle related diseases. As a result there is a sharp escalation in the number of local fitness centers and health clubs, leading to a rampant employment of fitness trainers, who lack adequate knowledge and training. We used a questionnaire to evaluate fitness trainers from local health clubs of North and Northwest Delhi in the following 3 domains:

(1) Human kinesiology, anatomy and physiology (2) Nutrition, and (3) Exercise prescription.

The answers were tabulated and statistically evaluated qualitatively as well as using the Microsoft Excel 2007 software. 20 fitness trainers were enrolled in the study. An average score obtained was 57.2% on the questionnaire administered, with a minimum average of 51% in the domain of Nutrition. Our findings suggest that fitness trainers are not well equipped with adequate knowledge of their field. They cannot successfully fulfill the multiple roles of fitness advisors, diet and wellness counselors and hence there is an urgent need to improve the quality of instruction provided by them by making necessary recruitment guidelines not available in India yet.

Introduction

India is witnessing an epidemic of obesity and resultant cardiovascular diseases. Now, it is understood that this prevalence can be attributed to risk factors, such as sedentary lifestyles and poor diet, which have contributed to the upward trend in lifestyle disorders and cardiovascular disease. Exercise training has been shown to improve overall physical fitness and quality of life in older women with coronary artery disease [Hung et al. 2004]. Regular exercise has a positive effect on HbA1c, fasting blood glucose, total cholesterol, HDL cholesterol, LDL cholesterol in Type 2 diabetic patients [Yoo JS, Lee SJ. 2005]. Conventional exercise as well as Hatha Yoga, has been shown to have therapeutic preventative and protective effects on diabetes mellitus by decreasing oxidative stress and improving antioxidant status [Gordon LA et al. 2008].

Primary prevention is inhibiting the development of the disease in people at risk. With the rising incidence of lifestyle related diseases like metabolic syndrome, diabetes and atherosclerosis, the upper and middle class Indians have widely adopted primary prevention as the method of reversing modifiable risk factors and hence preventing disease. Foremost in this approach is tackling the obesity and central

adiposity epidemic. There is increased awareness about properly balanced diets, maintaining low LDL and blood glucose levels, as well as an increased interest in including exercise in the everyday routine and so on.

As these diseases are becoming more common even among young people, the desire to seek lifestyle modification, especially weight reduction, is on the rise. Weight loss programs are not merely used for disease prevention, but also for improving aesthetic appearance, explaining their popularity among young adults and the middle aged individuals. This has resulted in a rapid increase in the number of health clubs and exercise centers all across India.

One major problem with the new fitness training industry lies in that there are few trainers who are certified to provide reliable information on fitness goals and nutrition needs. A number of institutions and universities impart sports education for coaches at the undergraduate and postgraduate level. i.e. Bachelors in Physical Education (BPEd) and Masters in Physical Education (MPEd) approved by the Sports Authority of India [nsnis.org].

There are no regulations or recruitment rules for appointment of fitness trainers in most health clubs, which implies that almost anyone who

manages to build a few muscles, irrespective of graduation or an exercise science training degree can be employed. Many clients may be hesitant to question their trainers either due their own lack of knowledge or because they are so overwhelmed by the system of new fitness clubs, regimes and equipment.

This pilot study aims to evaluate the level of knowledge of personal fitness and nutritional needs among fitness trainers of local health clubs in India. These trainers are not only responsible for helping clients design exercise schedules at the health clubs, but also help plan diet plans based on the clients' weight loss goals. In a study done at the University of North Carolina, approved clinical instructors were found to experience 'role strain' when they had to perform the multiple roles of health care providers, clinical educators and administrators (Henning JM, Weidner TG. 2008).

This study was prompted by the fact that we heard about some very unscientific facts from regular 'gym-goers' told to them by their fitness trainers. In fact we came across a study in which rhabdomyolysis was precipitated by overexertion during exercise, encouraged by fitness instructors in a local health club [Springer and Clarkson. 2003]. Given that evidence suggests a large percentage of trainers are not qualified for these positions, we are interested in assessing the general level of competence of these trainers as a group.

The results of this pilot study show that it is imperative to carry out a larger study in this domain and to set up government regulations for a compulsory qualification program for fitness trainers.

Materials and Methods

Fitness trainers (n=20) from local health clubs in North and North-West Delhi, India, participated in the study. An informed consent was obtained from each subject.

These local health clubs have facilities for aerobic exercise, resistance training and flexibility exercises. In addition, diet consultation with individual fitness counselors is offered to every enrolled individual. These clubs or 'gyms' cater to a range of lower and upper middle class individuals.

A questionnaire was administered to assess the basic knowledge of fitness trainers in

registered local health clubs in Delhi in 3 major areas:

1. Human kinesiology, anatomy, and physiology.
2. Nutrition
3. Exercise prescription: consisting of type, technique and duration of exercise.

For the kinesiology, anatomy and physiology assessment, trainers were tested on basic muscle anatomy, types of muscle fibers, muscle and ligament injuries, heart and respiratory rates, and blood pressure.

The nutrition component assessed whether trainers understood the difference between types of fats, general energy requirements for men and women, fluid intake, and basic understanding of ingredients in artificial sweeteners and body-building products.

Pathophysiology of muscle cramps and their management, weight lifting skills, and its complications, ideal durations of warm up, endurance and cool down phases along with overtraining related issues were assessed in the last area.

Notes of the qualifications, certification, and experience of the concerned trainers were also made during the survey.

Results

Out of the 20 trainers questioned, 9 were graduates in varying fields (not limited to sports sciences or kinesiology), 5 had Masters' degrees (again in varying fields and subjects) and the remaining 6 were not even graduates. Only 5 of the instructors enrolled had any certification in Sports Science.

Their ages ranged from 19 to 28 years; 18 out of the 20 subjects were males.

As a group, they had an average work experience of 3 ± 1.24 years working as fitness instructors and exercise trainers. The average score obtained on the questionnaire was 57.2%. Only 45% (Table 1) of instructors have correct understanding of the changes in vital body parameters during exercise. In the domain on nutrition (Table 2) is interesting to note here that only 30% trainers know the composition of body building products which they so commonly prescribe. Table 3 shows the outcome of the questions based on their skill at individualizing workouts and exercise prescription.

In addition, a number of survey findings were particularly alarming, and we noted these specifically below:

Only 2 out of the 20 trainers identified “trans-fats” as a cause of lifestyle related diseases. Although these personal trainers have responsibilities to help clients achieve weight loss and build muscle, 6 out of 20 did not know how caloric requirements vary by weight and age. Furthermore, 13 out of 20 did not know that aspartame, sucralose were the constituents of artificial sweeteners and gave shocking answers like fructose, glucose and even honey! On the other hand, 17 out of 20 trainers had a reasonable knowledge about muscle injuries and recommended duration of exercise.

Finally, perhaps the most alarming responses included that some trainers responded that hypothyroidism is caused by the lack of exercise and that the recommended energy intakes are 560kcal and 400kcal for adult men and women, respectively, a value much below the average requirement of 2400 and 2000 kcal/ day for moderate worker- male and female as recommended by the Indian Council of Medical Research [Nutritive Value of Indian Foods, National Institute of Nutrition, ICMR, 2004]

Discussion and Conclusion

With increasing awareness about healthy living there is a massive upsurge in the number of exercise centers and health clubs in and around Delhi.

The result of this study necessitates the need for regulatory control on the standards of local health clubs with particular emphasis on the quality of fitness trainers employed. Malek et al at the exercise physiology lab at UCLA devised the FIKA (Fitness Instructors Knowledge Assessment) scale to measure whether actual fitness training was influenced by professional certification credentials, education and number of years spent. Their results covered the areas of Nutrition, Health Screening, Testing Protocols, Exercise Prescription, General Training Knowledge regarding special populations and concluded that trainers who had 5 years of experience but no college degree did poorly on a test of their fitness knowledge with an average score of 44% [Malek et al. 2002].

Studies show that only 39% of fitness professionals were found to have a qualifying degree in exercise science [Mike. 2006], and those with a degree scored only 74% on a test assessing their knowledge in core areas of exercise physiology [Fuller and Hardinge. 1994].

These results display the dismal scenario and project the immediate need for remediation. The results of these studies are comparable to our own work in which the average score of correct answers was 57.2%. Minimum scores were seen in the domain of Nutrition averaging at 51%.

Such results question the integrity of the fitness industry which is closely linked to the health sector leading to a detrimental effect on the consumers. The deep crevices in the system need an urgent address. People have blind trust in their trainers. What they do not know is that these trainers themselves have big voids in essential knowledge and skill.

A potential source of error in our findings may be the limited sample size. We, therefore, suggest that a larger study be planned to expand the picture, which will enable the authorities to make the necessary regulations and ensure adequate quality of service in the field of fitness.

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