

DEVELOPMENTS IN THE SOUTH AFRICAN FITNESS INDUSTRY: IMPLICATIONS FOR EDUCATION AND TRAINING

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Dedicated to Sally,
for believing in me.

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CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

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CHAPTER ONE

1.1 INTRODUCTION

There is substantial evidence indicating that the need for exercise has biological, anatomical, physiological, psycho-social and anthropological bases (Cratty, 1983). A strong body of research supports the premise that human kind is experiencing the negative effects of the lack of regular physical activity (Shephard, 1987). These effects are evident across the spectrum of human behavioural activity and are becoming increasingly so in our modern technological age (Barrow and Brown, 1988).

Psycho-motor, cognitive, emotional and social benefits have been defined by a range of educational researchers (Coutts, 1981), but no empirical evidence is available on the extent to which these benefits are being enjoyed by those who pursue health and fitness in gymnasiums across the country.

The evidence of the deleterious effects of sedentarianism is now overwhelming (Paffenbarger, 1986). Along with negative behaviours such as cigarette smoking and poor eating habits, inactivity has been linked to a range of preventable conditions which contribute substantially to national health cost (Wyndham, 1981).

The fitness industry is one of the avenues through which these negative influences may be countered. This industry is a relatively recent innovation

in South Africa and it has been based largely on economic and market factors. Relating current practices within the fitness industry to the actual needs of the people who support the industry, would provide important information upon which to base future developments.

The extent to which the industry is meeting even the most obvious physical needs of those it serves is not known. No formal research has been reported on the developments and trends within the industry, and as the patronage of fitness gymnasiums appears to be more than a passing phase, the need has arisen to conduct a thorough investigation of the practices within the industry.

There are three major reasons which may be identified which emphasise the importance of exercise and fitness in the future:

1. The return of South Africa to the world sporting arena will inevitably increase the demand for improved expertise in the whole field of exercise and fitness;
2. The growing demands from labour for improved working conditions are likely to result in exercise and recreational programmes becoming much more common in commerce and industry;
3. The clearly demonstrated desire of gymnasium clientele to contribute towards their own physical health and wellbeing is likely to become more widespread as people become more aware of their

meet these defined goals and objectives.

The third problem was to gain insight into the perceptions of the gymnasium clientele regarding the services provided by the fitness industry.

The evaluation of the quality of instruction and the extent to which the professional bodies in the industry contribute to the required standards of instruction constituted the fourth problem.

1.3 DELIMITATIONS AND LIMITATIONS

This study was delimited to the Durban metropolitan area and to those gymnasiums and health centres which were prepared to participate in this study. The extent to which the findings may be representative of the country as a whole is therefore limited by the sample.

The study was limited by the fact that not all gymnasiums participated. Nor was it feasible to include gymnasiums in residential areas where violence was prevalent.

1.4 HYPOTHESES

It was hypothesised that:

1. Standards of instruction and professionalism within the fitness

industry do not permit the achievement of the defined goals and objectives;

2. The service provided within the fitness industry does not meet the needs of the clientele;
3. The contributions of the professional bodies serving the fitness industry are not sufficient to meet the required standards of instruction.

1.5 **ASSUMPTIONS**

For the purpose of this study it was assumed that the questionnaires were completed to the best of the ability of those requested to do so.

It was also assumed that the Durban metropolitan area represented a typical urban South African environment.

1.6 **DEFINITIONS**

For the purpose of obtaining clarity in this study the following definitions are offered:

Facilities

Facilities are major resources of a permanent nature. Included are buildings, aerobic studios, weight training areas, super circuit sections, courts, swimming pools, plunge pools, saunas and permanent structures incorporated therewith.

Fitness Industry

A commercial undertaking that provides a service within the field of fitness.

Fitness Instructor

A person who instructs; a trainer in the field of fitness.

Gymnasium Manager/Manageress

Gymnasium manager/ess is a person who conducts a business in fitness instruction, occupies a facility and employs qualified or unqualified instructors for the purpose of promoting the fitness and well-being of the client.

Life-World of the Fitness Instructor

This relates to a whole host of meanings within which the fitness instructor conducts his/her mode of life. The professional life-world is the constellation of meaningful phenomena, including persons, objects, relationships and understanding which relate to and effect the discharge of the instructors' duties as educator (Coutts, 1981:6). The professional life-world of the instructor is embedded in, and interwoven with the greater reality of his/her total life-world.

Recreation

Recreation varies considerably from individual to individual and at a significant level in human affairs. It also varies in form, content, nature and relationships as a social phenomenon through time, space and culture. Many definitions of recreation specifically contrast it to work and indicate

that it is a means whereby people seek refreshment after toil. This view owes some of its origin to the Greek concept of work (which was defined as non-recreation) and the so-called "Protestant Work Ethic" upon which much capitalist development has taken place (Butler-Adam, 1986:9).

Teaching Styles

Command Style

This style of teaching allows the instructor to make all the decisions about posture, rhythm, and duration while participants follow his/her instructions.

Practice Style

This style of teaching provides opportunities for individualization and includes practice time and private instructor feedback for each participant. While all exercisers are working on the same task, individual participants can choose their own pace and rhythm. This practice style is particularly suited to cope with six exercisers in classes where the fitness level of the participants varies greatly.

Reciprocal Style

This style of teaching involves the use of an observer or a partner to provide feedback to each participant. The reciprocal style can best be used for screening or testing and retesting in certain areas. For example, tests evaluating posture, girth measurements and flexibility can be quickly administered by partners.

Self-Check Style

This style of teaching relies on individual participants to provide their own feedback. Participants perform a given task and then record the results, comparing their performance against given criteria or past performances. This style lends itself well to the recording of the target heart rate and the number of floor exercise repetitions.

Inclusion Style

This teaching style enables multiple levels of performance to be taught within the same activity. Skill and fitness level can vary in each segment of the exercise class, including stretching, strengthening and aerobic work.

Total Fitness

Total fitness could be defined as the capacity to achieve the optimal quality of life. This is a multi-dimensional state which would include intellectual, social, spiritual and physical components (Burnett-Van Tonder et al., 1990: 182).

Total Health

A high level of health or wellness means that optimum health and development has to be attained physically, mentally, socially and spiritually (Burnett-Van Tonder et al., 1990:144).

1.7 RESEARCH DESIGN

A survey of relevant literature and research was undertaken in order to ascertain the extent of knowledge relating to important aspects of the selected topic, to provide a theoretical framework for the study, to aid in defining the terms used and to clarify the most appropriate research procedures.

This study took the form of a survey which used questionnaires for the collection of data. A pilot study was conducted to ensure that the questionnaires enabled the required information to be collected. A random sampling process was used for the distribution of the questionnaires which were delivered by hand. Questionnaires were collected or returned by post.

1.8 STATISTICAL ANALYSIS

Once the questionnaires were examined for correctness and accuracy, they were numbered and coded. The coded data were keyed into a computer and the Lotus 1,2,3 programme was used for statistical analysis. The data were processed and displayed quantitatively by means of tables, pie charts, line graphs and bar graphs. Findings relating to each specific problem were communicated by at least one such display.

1.9 SUMMARY

The first chapter has served to clarify the need for the study and has defined the research problems. The scope of the research has been clearly delimited and the relevant terms have been defined. Methods used in the gathering and processing of information have been discussed.

2.8 THE FITNESS INDUSTRY IN SOUTH AFRICA

2.8.1 PROFESSIONALISM

2.8.2 PROFIT

2.8.3 TRAINING

2.8.4 PROFESSIONAL LIFE-WORD OF THE AEROBIC INSTRUCTOR

2.9 SUMMARY

CHAPTER TWO

REVIEW OF RELATED LITERATURE AND BACKGROUND TO THE STUDY

2.1 INTRODUCTION

The purpose of this chapter is to review what is known about health, fitness and physical activity. Perspectives of physical activity, its place in modern life and the contributions it can make to a contemporary South African society will also be reviewed, and an analysis of the structure of the fitness industry in South Africa will be presented.

2.2 HEALTH

In our complex South African society health may mean different things to different people. To those experiencing socio-economic deprivation, health may not seem as important as food, clothing and shelter; to the more affluent members of society, factors contributing to an unhealthy lifestyle such as stress, overeating and the lack of exercise may cause concern and may motivate behavioural changes. Girdano (1986:9) wrote that in order to be healthy one must recognise and change unhealthy behaviour. The idea of the prevention of disease and the promotion of positive health is not a new one. Many ancient civilizations, such as the Chinese and the Greeks, viewed health as something that had to be nurtured and protected (Girando, 1986:11). In the broader context, health may be viewed as community health, which in turn could be viewed as good health for all.

This would necessitate the inclusion of many factors which may be biological, cultural, educational, political or economic. Adequate health services for all and adequate welfare and housing may also be included (Hammond and Gear, 1990:2). For the purpose of this study, health will be viewed from an individualised, personal perspective.

The true meaning of health has for many decades been obscured by uncertainty and misinformation. It has been seen from a negative perspective and has been defined as the absence of sickness and infirmity, or simply the freedom from disease. Noakes (1986:114-124) noted that Harrison's Textbook of Medicine contained no reference to the word health. This suggests that in the past, health appeared to be an unimportant topic when considered outside the realm of the treatment of disease.

Cooper (1975:1) on the other hand wrote that most of the medical world, notably in the last decade, has come to recognise the value of exercise not only in maintaining a good healthy body, but as therapy for unhealthy bodies. Cooper was of the opinion that vigorous activity has more and more proved worthwhile both as preventive medicine and as a cure. Andrews (1991:4) supported this when he wrote that the last decade had seen an increasing health awareness among the general public, and our magazines, newspapers, television and radio programmes devoted considerable time and space to this topic. He also noted that the medical field until quite recently had viewed health as the absence of disease. Today a number of medical practitioners view health in the broader context of overall wellness. This holistic approach acknowledges that psychological

and mental stress may be associated with physical disease (Strydom, et al., 1987:12). This implies that there is the realisation that the human being cannot be divided into a conglomeration of separate, independent parts. Instead the physical, spiritual and psychological aspects are parts of the whole and as such are interrelated and interdependent (Burnett-Van Tonder et al., 1990:145).

This brings the concept of health closer to the World Health Organisation's (WHO) definition (1992) which has defined health as a condition of all round physical, psychological and social welfare and not just the absence of disease (Hardinge, 1975:25). Coovadia (1991:2) defined health as the optimum performance of the body, mind and society and he was of the opinion that the World Health Organisation (WHO), in defining health as they did, accepted that it was an ideal state and attainable only in the abstraction.

The World Health Organisation does however, exhort nations to set social goals which aspire to the achievement in the highest possible level of health, rather than attempt to reach a target of perfection. It is also of importance to note that the World Health Organisation's definition of health does not mean that a healthy person necessarily passes through life harmoniously and without discord. Rather it suggested that one does not act in an integrated fashion. Thompson (1927: 3-4) expressed it in these words:

The healthy man has a wholeness or oneness of

physical life while the unhealthy man is always distracted. And although the healthy man may be torn by temptations and puzzled by the unsolved problems of life, he has not often to fight a battle on two fronts, for health implies some degree of unity. The unhealthy man on the other hand, has always to face bodily discord as well as ethical and intellectual difficulties. He is not at peace with his own body.

Health denotes bodily functions competent to deal with the internal milieu of the person and the external environment. The organic systems of the body are healthy and functioning efficiently so that the fit individual can attain full potential for work, play and love (Coovadia, 1992:2). Williams (1950:13) succinctly defined health as that quality of life which enables one to live most and serve best. Barrow and Brown (1988:207) were of the opinion that when trying to achieve optimal health, the physical, mental, social and spiritual components would have to be considered, thus enabling the individual to live life to the fullest. This implies one's ability to meet the requirements of one's vocation with energy and with enough vitality left over to meet any avocational interests with zest or any special demands placed on one by emergencies. Coovadia supported this concept of health when he wrote:

Health is founded on an anatomically and physiologically intact nervous system which allows the individual full scope in thinking, feeling, imagining and

creating. These attributes allow persons to be at ease with themselves, with other people, with institutions and with nature; they sustain us in the face of fluctuating and adverse life events (1992:2).

Coovadia elaborated on the concept of health. He was of the opinion that health is rooted in society. It is expressed in homes that ensure shelter, warmth and love; education which liberates from ignorance and prejudice, which nurtures creativity, enlightenment and imagination, and which trains for useful employment and which satisfies while guaranteeing a living income. He saw health as an empty word without the confidence born of self-reliance and the power to influence man-made events which determine human destiny (Coovadia, 1992:2).

According to Shephard (1986), health in modern life should be viewed as a personal responsibility, rather than the sole responsibility of teachers, doctors, hospitals, clinics and the government. He went on to emphasise that health cannot be readily purchased therefore it has to be viewed as an individual responsibility. Modern medical science has eliminated many health risks and has brought a knowledge and understanding of disease and illness, together with their cause and prevention. This knowledge has no meaning if it is not applied by the individual. Health is something the individual can only obtain for him/herself. According to Burnett-van Tonder et al. (1990:145) health is critical to a healthy lifestyle, but is no more important for total well-being than the other health components, namely, mental, social, emotional and spiritual components.

Fitness is not synonymous with health but it plays an essential role in all aspects of health as both concepts are inextricably related. Good health provides a solid foundation on which fitness rests and at the same time fitness is one of the most important factors in health and living one's life to the fullest. It would therefore be appropriate to define the concepts of total, physical and health-related fitness.

2.3 TOTAL FITNESS

Despite the widespread interest in fitness, it is difficult to define it in a way that is acceptable to all concerned as it has different meanings to different people and it may be viewed either very broadly or very specifically. Fitness viewed in a broad sense may be represented as total fitness, as opposed to physical fitness. Total fitness has been described by the American Association for Health, Physical Education and Recreation as follows:

It is the state which characterises the degree to which a person is able to function efficiently. Fitness is an individual matter, implying the ability of each person to live most effectively within his/her potentialities. This ability to function depends upon the physical, mental, emotional, social and spiritual components of fitness, all of which are related to each other and are mutually interdependent.

(American Academy for Health, Physical Education

and Recreation, 1989.)

Cureton (1970:18) wrote that there were many aspects of total fitness, and distinguished physical, emotional, mental and social fitness. He believed that physical fitness was one phase of total fitness. Du Toit (1952:70) viewed physical fitness as only an aspect of total fitness. He emphasised the physical and spiritual aspects of total fitness, and included intellectual, emotional and social fitness, pointing to the interrelation of the mental and physical factors.

Nixon and Cozens (1959:212-213) concluded that total fitness comprised five components, namely, emotional, physical, spiritual, moral and social. Berends (1960:1-2) reaffirmed the need to consider the person as an indivisible unity. He was of the opinion that the individual must possess a total or general fitness where physical fitness is just one facet of the total fitness. The other components according to Berends were emotional, intellectual and social.

De Wet Theron (1965:191) on quoting *mens sana in corpore sano* upheld the idea that humankind was a psycho-physical unity. Bailey and Field (1976:289) viewed physical fitness as just one aspect of total fitness. The other aspects were emotional, mental and social fitness. They felt that all the components were related and influenced each other. Greenberg and Pargman (1986:3) supported this when they discussed the interrelation between health, wellness and personal fitness. They were of the opinion that health consisted of social, mental, emotional, spiritual and physical

components. When these components were in balance, a high level of wellness was achieved. Physical fitness programmes according to Greenberg and Pargman should be designed to achieve this balance and to improve each component of health. In this way, they concluded, fitness programmes would result in a high level of wellness.

Shephard (1987:110) wrote that fitness could be considered as a total matching of the individual to his/her environment. This might include not only physiological, but also psychological, sociological and even theological matching of personal attributes to environmental demand. Barrow and Brown (1988:212) were of the opinion that fitness and physical fitness were often used interchangeably. They expressed the view that both terms involved quality of life, but did not mean the same thing. Fitness included emotional, mental, spiritual and social fitness as well as physical fitness. Burnett-van Tonder et al. (1990:182) regarded total fitness as the capacity to achieve optimal quality of life. This, they wrote, was a dynamic, multi-dimensional state that had a positive health base, as it would be difficult to imagine the highest quality of life without including, intellectual, social, spiritual and physical components. Thus, there is some consensus that physical fitness is an aspect of total fitness. Those who work in the field of health and fitness focus on the physical component of total fitness, although the other components will be viewed as essential, and the strong interrelationships between them may be recognised and appreciated.

2.4 PHYSICAL FITNESS

There has been much debate over many years as to what the components of physical fitness are. Today it is accepted that physical fitness may be viewed from several perspectives. Allen et al. (1984:5) saw physical fitness as being based on a foundation of five major factors. They were cardiovascular endurance, strength, flexibility, proper body weight and relaxation. The writers were of the opinion that if all of these objectives could be accomplished, a person was well on the way to achieving optimal physical fitness. Corbin and Lindsey (1985:8-10) viewed physical fitness in the same manner.

Barrow and Brown (1988:12) and Burnett-van Tonder et al. (1990:182) suggested two kinds of physical fitness, namely, health-related physical fitness and skill-related (motor performance) fitness. According to Barrow and Brown (1988:212), both types of fitness require exercise, and both are linked to proper nutrition, adequate rest and relaxation and good health habits. Without these components either type of physical fitness would be difficult to develop and maintain. This was echoed by Andrews (1991) in the following diagrammatic representation:

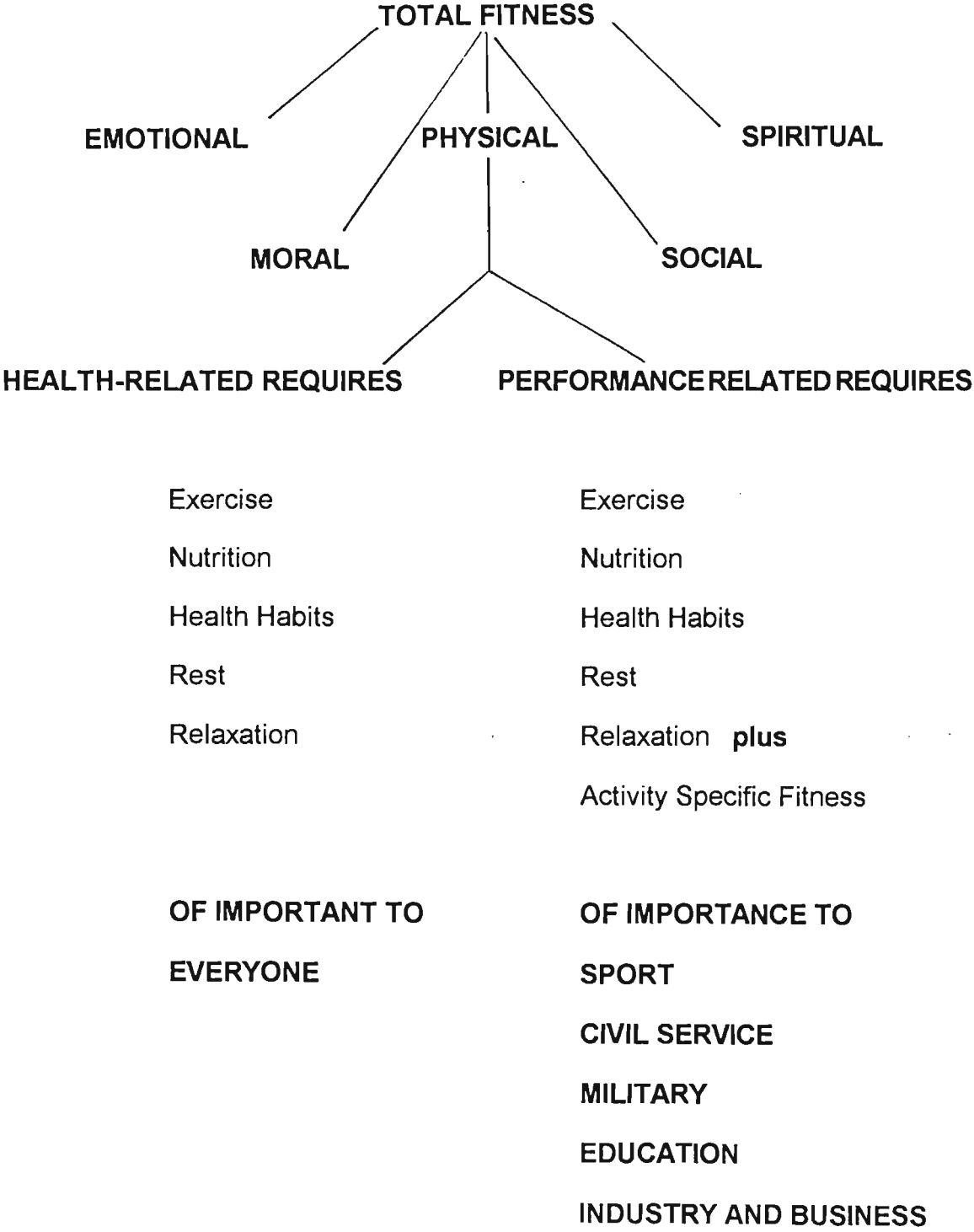


Figure 2.1 Fitness Components
(Andrews and Coopoo, 1991:3)

There appears to be differences between the two types of fitness. The literature indicates that the concept of health-related fitness developed during the mid 1970's, because many physical educators felt that a distinction should be made between functional health and physical performance which related primarily to ability (Barrow and Brown, 1988:212).

Health related physical fitness included components related to the development of health, work and leisure capacity, or those that increased the functional capacity of the body (Burnett-van Tonder et al., 1990:182). These components consisted of cardiorespiratory endurance, muscular strength and endurance, flexibility and body composition (Barrow and Brown, 1988: 213). Skill-related or motor performance-related physical fitness could include the same components as health-related physical fitness, but could also include several essential components needed for successful execution of various sports skills and skills for specific types of jobs (Andrews: 1991:4).

Motor performance physical fitness included agility, balance, speed, power, reaction time and co-ordination (Nel et al., 1990:71-75). This skill-related or motor performance-related fitness was highly specific and demanded particular training methods. It was sport specific and was not interchangeable. In order to assess whether an individual was fit or not, it was necessary to specify the kind of fitness required. As performance-related physical fitness depended on the specified activity, the training used to develop a particular kind of fitness would have to be designed specifically

with that activity in mind (Andrews, 1991:4). Health-related fitness on the other hand was not specific for a particular activity such as swimming, sprinting or canoeing, but had value for all people. A high degree of athletic ability was not necessarily essential for the maintenance or development of health-related physical fitness. A wide variety of activities that required minimal levels of skill might contribute to health-related physical fitness as this fitness related to a person's capacity to achieve the optimal quality of life (Burnett-van Tonder, 1990:182).

Coutts (1977:52) did not view physical fitness as an unchanging quality. He was of the opinion that as the environment changed so did our roles and tasks. This would cause the total fitness needed to meet and surmount our duties to change. Therefore the subordinate, interwoven facets such as physical, emotional, intellectual and social fitness would also change. Physical fitness, then, may be regarded as an integral, but specific component of total fitness.

2.5 HEALTH-RELATED PHYSICAL FITNESS

As the health-related component of physical fitness is particularly pertinent to this study, special emphasis will be placed on it in this review of related literature. Health-related fitness concerns the personal well-being of the individual. It is a component of wellness, and society would benefit by recognising its medical importance, rather than viewing fitness as a means of achieving sporting excellence (Andrews, 1991:19).

The relationship between physical activity and health had already been established centuries ago. As early as the ninth century B C exercise was recommended for people with rheumatism (Strydom et al., 1987:11). Exercise in those times came under the jurisdiction of the medical profession. In the twelfth century, the Jewish philosopher and physician, Maimonides, clearly described the connection between physical health and physical exercise when he wrote:

Anyone who lives a sedentary life and does not exercise - even if he eats good food and takes care of himself according to proper medical principles - all his days will be painful ones and his strength shall wane.
(American Academy of Physical Education, 1984:4)

McCloy (1936:46) emphasised the fact that physical fitness rested on a solid foundation of good health. He was of the opinion that a physically fit person could withstand fatigue better, was muscularly more efficient and could withstand susceptibility to disease better, as there was less fatigue and better-functioning internal organs. McCloy saw physical fitness consisting of both medical and functional components. This health basis or foundation was also referred to as medical fitness by Berends who believed that medical fitness formed the foundation upon which motor fitness could be built. He wrote:

Dit is seker dat daar verband verstaan tussen lig-
gaamlike geskiktheid en gesondheid. Die gesondheid

is 'n voorwaarde van liggaamlike geskiktheid; dit is die basis waarop liggaamlike geskiktheid opgebou word. (Berends, 1960:140)

Morgan (1974:62-63) maintained that medical fitness meant that a person was not suffering from, or sickening for, a disease. Physical fitness, on the other hand, was more positive than that, as it meant that the person had achieved a large part of his/her total potential for doing physical work. Morgans's concept of health was more comprehensive than his concept of physical fitness, as health related to physical well-being and competence in relation to the demands placed on the individual, while physical fitness related to the demands made on an individual as a mechanism for doing physical work. Thus, the term physical fitness appeared to be viewed as synonymous with motor fitness (Coutts, 1977:53).

Arnold (1972:17) viewed the concept of health very positively when he wrote that the maxim of *mens sana in corpore sano* implied that health was more than the absence of disease and should be regarded more as a positive concept rather than a negative one. It should involve not only different functions of the body machine, but playing one's part in the full richness of living. Arnold also maintained that organic fitness was an integral part of total health. He saw physical fitness as having two components; one was medical fitness, which he called organic fitness, and this related to good health; and the other was mechanical fitness which implied the body's work capacity.

McCloy (1954:19) supported this dual concept of physical fitness when he wrote that the organic condition implied the relative state of health and efficiency of the organs of the body which he said was identical to medical fitness. He then went on to describe motor fitness as emphasising fundamental or gross muscle movements (McCloy, 1954:21).

Other definitions of physical fitness that incorporated the concept of health contribute further to the understanding of fitness. Randall et al. (1969:152) wrote that physical fitness could be interpreted positively as a means for a full and varied life and not negatively assessed as the freedom from disease. Sloan (1970:215) believed physical fitness to be a state of health in which vigorous exercise could be undertaken without undue fatigue and with a consequent feeling of well-being. This condition appeared to emphasise cardio-vascular endurance. De Wet Theron (1965:197) stressed the totality of humankind. He pointed out that the physically fit individual can meet normal and exceptional stress with efficiency, without undue physical or mental debilitation and as a totality.

More recently, Barrow and Brown were of the opinion that although fitness was not synonymous with health, it played an essential role in all aspects of health because they were inextricably related. They wrote:

Good health provides a solid foundation on which fitness rests, and at the same time fitness provides

one of the most important keys to health and living one’s life to the fullest.

(Barrow and Brown, 1988:213)

This interrelationship was supported by John F. Kennedy in 1960 when he said that physical fitness was not only one of the most important keys to a healthy body, it was also the basis for dynamic and creative activity (Corbin and Lindsey, 1985:8).

Health consisted of five components according to Burnett-van Tonder (1990:183). These were social, mental, emotional, spiritual and physical health. When these components were in balance, a high level of wellness could be achieved. The process of total wellness could be presented schematically as follows:

Disease/Symptoms		Total Health
Death	Freedom from disease	Total Health
+100	0	-100

Figure 2.2 Wellness Continuum
(Strydom et al., 1987:13)

This continuum of total health did not show illness and health overlapping, as at some point one stopped and the other began. Another model depicting this conceptualisation was devised by Dinitiman and Greenberg (1980:8). Illness occupied the right side of the continuum. This ended at

the midpoint where health began. Health occupied the left half of the continuum.

The Health-Illness Continuum			
Perfect Health	Health	Illness	Death

Figure 2.3 Health-Illness Continuum
(Dinitiman and Greenberg 1980:8)

The South African Association for Sport science, Physical Education and Recreation, in an exercise science brief, presented another continuum depicting a definition of wellness.

Treatment Model	Wellness Model
Disability: Symptoms and Signs	Awareness: Education; Growth
(Premature Death)	(High Level of Wellness)
Neutral Point (No discernable Illness or Wellness)	

Figure 2.4 Health-Illness Continuum
(South African Association of Sport Science, Physical Education and Recreation, 1989:1)

It was stated that wellness was a choice, a way of life, the integration of body, mind and spirit; a conscious and deliberate approach to an advanced state of physical, psychological, spiritual health and a dynamic state that was constantly changing.

Traditionally, medicine has always been involved with birth, illness, disease

and health, and it is only within the last decade that preventative treatment began to take a foothold. Barrow and Brown (1988:213) were of the view that health-related fitness implied that the organic systems of the body were healthy and functioning efficiently so that the individual was able to engage in vigorous tasks and leisure activities. It would also seem imperative to health-related physical fitness that the principle of relaxation and good medical and dental care be included. Andrews (1991:4) carried this further and said that health-related physical fitness exerted a positive influence on several risk factors associated with cardio-vascular and other degenerative diseases. Greenberg and Pargman (1986:9) listed the major causes of death in 1900 and in 1978.

LEADING CAUSES OF DEATH	
Rank in 1900	Rank in 1978
1. Tuberculosis	1. Diseases of the heart
2. Pneumonia and influenza	2. Cancer
3. Enteritis, gastritis, colitis	3. Stroke or apoplexy
4. Diseases of the heart	4. Accidents
5. Stroke or apoplexy	5. Influenza and pneumonia
6. Kidney diseases	6. Cirrhosis of the Liver
7. Accidents	7. Suicide
8. Cancer	8. Diabetes mellitus
9. Disease of early infancy	9. Homicide
10. Diphtheria	10. Tuberculosis

Figure 2.5 Leading Causes of Death in 1900 and 1978
(Greenberg and Pargman, 1986:9)

Heading the 1900 list were diseases that were passed from person to person or diseases that were the result of unsanitary practices. The

incidence of these diseases has been drastically reduced through legislation requiring proper disposal of waste, sewage systems, quarantines and other community actions to prevent their spread. Greenberg and Pargman (1986:10) wrote that the killers of today are a result of lifestyle. In a democratic society, lifestyle cannot be legislated. People cannot be forced to stop smoking, get sufficient sleep, maintain an ideal body mass, not to abuse alcohol and drugs, eat nutritional foods and exercise regularly (Greenberg and Pargman, 1986).

The calculations of Quasar (1976), (in Shephard 1986:9) for the Province of Ontario on estimated direct costs of illness related to modern lifestyle, were as follows:

Disorder	Direct Cost	Effect of Exercise	
	(M=Million)	Direct	Indirect
Neoplasms	\$31.6	-	?
(Cancers of the upper digestive system, lungs and other respiratory organs)			
Metabolic disease	16.1m	+	-
(Obesity, gout)			
Mental disorders	102.9m	-	?
(Alcoholic psychosis, alcoholism, drug dependence, personality disorders)			
Circulatory disorders	569.1m	+	-

(Except rheumatic fever and rheumatic heart disease)			
Diseases of the digestive system	89.4m	-	?
(Hernia, cirrhosis)			
Musculoskeletal diseases	148.4m	-	?
(Osteoarthritis, bursitis, rheumatism, synovitis, intervertebral disc displacement, knee derangement, joint dislocation)			
Accidents, poisoning, violence	347.4m	-	?
TOTAL	\$1304.9M		
Percentage of Ontario Total	29.2		
Directly affected by exercise	13.1%		
Possible indirect effect of exercise	16.1%		
Expressed in 1983 dollars			

Figure 2.6 Cost of Illness for the province of Ontario
(Quasar, 1976 in Shephard,1986:9)

Shephard (1986:34) wrote that while argument would continue regarding the detailed costing of illness and disability, it must be accepted that the annual burden was very large (20-30% of an average income). Moreover, about half of the total costs of illness and disability (10-15% of an average income) were susceptible to preventative tactics and at least a quarter of the total reflected lifestyle items such as physical inactivity and the abuse of alcohol and

tobacco (Shephard, 1986). He also wrote that if people remain unfit they should be prepared to meet the additional health costs incurred by the exploitation of this right. He recommended that further study of differential health insurance premiums was desirable but at the same time cautioned that some people might be unable to improve their personal fitness for various reasons.

The fitness instructor is in a strong position to motivate participants to introduce positive changes into their lifestyles. Physical activity is usually accompanied by other lifestyle changes in that when a person has decided to participate in physical activity, the decision usually goes hand in hand with the determination to improve other aspects of their lifestyle, such as eating properly. This in turn may lead to other beneficial changes of personal habits, such as correction of alcohol and tobacco abuse, stress control and improved patterns of sleep (Shephard, 1986:27).

Breslow and Belloc (In Sharkey, 1979:255) suggested that a more profitable life style need not necessarily involve drastic changes. They indicated that the following seven health practices would result in a significant improvement in the individual's quality of life. They are seven to eight hours of sleep per night, regular exercise, no smoking, moderate eating habits, regular meals, a good breakfast and a moderate intake of alcohol, or total abstention.

They reported that the average physical condition of persons over 75 years who persisted in all seven of these practices, was almost equal to that of persons in the thirty-three to forty-four age group who followed fewer than

three or fewer of the rules.

Shephard (1986:31-32) wrote that the physically active individual had a greater cardiorespiratory and muscular endurance than the sedentary person. The body had a more attractive appearance and that heat tolerance was improved. Stronger muscles also left the individual at lesser risk of lower-back injuries and hernias, while greater flexibility enhanced the possible range of pursuits for the older individual. Lastly, the absence of physical disability was a clear benefit that most individuals would value. Corbin and Lindsey (1985:11-12) listed the following major benefits of health-related fitness:

- Improved cardiorespiratory endurance;
- Greater lean body mass and less body fat;
- Improved strength and muscular endurance;
- Improved flexibility;
- Reduction of mental tension;
- Opportunity for social interaction;
- Resistance to fatigue;
- Opportunity for successful activity experiences.

Regular physical exercise reduced the risk of disease and had a positive effect on health in general and on a number of acknowledged risk factors, including body mass, heart disease, hypertension and high cholesterol levels, impaired physical capacity, smoking, bad sleeping habits and stress (Corbin and Lindsay, 1985).

These perspectives on health-related fitness as a concept brings us to the main thrust of the fitness industry, namely physical activity.

2.6 PHYSICAL ACTIVITY IN THE PAST

Physical activity, like other aspects of life, is influenced by climate, topography, economy, political structures, prevailing philosophic beliefs and many other forces (Bailey and Field, 1976:175). A global perspective of physical activity may contribute to a better understanding of the present, and help in the preparation for the future. Branch (1966:9) stated that casual decisions or simply trying to counter events as they occurred are no longer feasible responses. He contended that well thought out, longer range objectives, policies and strategies must underlie short-range actions, unless society's course was to be the random product of successive circumstances of the moment. Toffler (1970:452) put it another way and argued that the future was so tenuous that we could not permit decisions of earth-jolting importance to be taken heedlessly, witlessly, painlessly. He wrote that to hang loose or grow organically was to commit collective suicide. The future required that fewer actions be left to fate, unthinking reactions or pure chance. In the same context and for basically the same reasons, physical educators would need to plan for their future in ways they had never used before (Barrow and Brown, 1988). This could very aptly apply to the fitness instructor as well.

Humans appeared on earth without great physical endowments and consequently they were forced to develop those qualities which they

possessed in greater abundance than any of the other animals, as humans were simply beasts among beasts (Bailey and Field, 1976:175). The qualities that humans developed enabled them to control or utilise most of the forces and materials around them. These qualities were their ability to reason, the faculty for organisation and powers of imagination (Barrow and Brown, 1988:115). Life was difficult and arduous, this caused humans to become tougher and achieve a level of physical fitness. This rigorous primitive life demanded that humans possess strong, agile, powerful bodies.

This hard outdoor life made it necessary for humans to carry heavy loads, fight, stalk game and run from the enemy (van Dalen and Bennet, 1971:4). If a person lacked physical stamina and skills they were a danger not only to themselves but to the tribe. Consequently, physical efficiency was encouraged to increase the survival of the individual as well as the group. Storms, fire, floods, famine and other mysterious and fearsome forces in the environment, frightened humankind. As a result humankind evolved a body of rituals, laws and ceremonies designed to please the gods, and no one was permitted to deviate from it (van Dalen and Bennett, 1974:4). Lubbock (1889:450) remarked that the savage was never free as their daily life was regulated by a complicated and often a most inconvenient set of customs (as forcible as laws), of quaint prohibitions and privileges. Humankind lived at this level for roughly 1 995 000 years of the 2 000 000 years on this planet (Bailey and Field, 1976:176). When life was too arduous because of unfavourable climate, topography or other conditions, people's time must be used for survival purposes leaving no time to

develop in other areas, such as for example literature, art and science (Bucher, 1975:93). Today machinery, automation, computerisation and cybernetics provide this leisure time over and above the time needed for the activities of survival (Barrow and Brown, 1988:116). In societies of the past, slaves provided leisure for the fortunate few. Much of this leisure time today and in the past was spent doing one or other form of physical activity (Bailey and Field, 1976:178). It would appear that physical activity was a basic necessity of life. This need, according to Barrow and Brown (1988:116) became embedded in human biological nature through countless ages, during which the evolutionary process operated to make human beings, active moving creatures.

These needs have existed for millions of years and very little change in the kind and amount of exercise needed for growth, development and maintenance appears to have occurred. From a biological point of view, the human organic system was closely related to the muscular system because the muscular system came first and the other systems arose in response to the needs of the muscular system (Barrow and Brown, 1988:117). Organically speaking, humans can only develop physical fitness through the action of muscles and the only means muscles have of developing and being strengthened is through exercise. It is now known that this biological need for exercise is permanent and although modern environments do not demand exercise for survival, human nature does (Nixon and Jewett, 1974:159).

Future generations will have to either choose to maintain their biological

integrity through exercise (at work or play) or run the risk of lower biological efficiency through inactivity (Barrow and Brown, 1988:117). De Wet Theron (1965:192) used the term biological strength. He wrote that it was imperative that we maintain a biological strength so that we may successfully fulfil our roles as guardians of our cultures.

Humankind was biologically equipped to live in one type of environment: an environment that demanded physical prowess, but then found itself in an environment that was much less demanding physically, and characterised by many disintegrating forces (Barrow and Brown, 1988:90). Humans now reveal certain weaknesses that in some way reflect these debilitating forces. Such weaknesses are either of a biological nature or have in them the ability to effect the biological potential (Shephard, 1986:x1). The English historian Toynbee wrote that of the twenty-one great civilisations of the past, nineteen of them fell because of physical and moral decay from within (Barrow and Brown, 1988:91).

In essence, fitness has always been the concern of humankind. Physical prowess from prehistoric times down through the ages has been equated with survival and power. Primitive people were fit, or they perished (van Dalen and Bennett, 1971:3). This was also the case in Sparta and Athens during the Golden Era of the Greek history and again in the early centuries of the Roman Empire. Through the centuries, the Middle Ages, the Renaissance, the Reformation and later, fitness has been emphasised in such historical activities and philosophies as chivalry, humanism, naturalism and nationalism (van Dalen and Bennett, 1971).

Few formalised programs were devised until the late eighteenth century (Bucher, 1975:104). From that point on there has been a constant interest in physical efficiency, and contributions from many individuals and nations have led to a world wide concern and interest in the concept (van Dalen and Bennett, 1971).

More recently, John F. Kennedy expressed it this way:

The physical fitness of our citizens is a vital prerequisite to the American's realisation of its full potential as a nation and to the opportunity of each individual to make full and fruitful use of his capacities.

(Kennedy, 1960:15-19)

In another article, the President reiterated the need for physical fitness for national strength and gave a progress report on the involvement of the Federal Government in promoting fitness (Kennedy, 1962:12-15).

2.7 PHYSICAL ACTIVITY IN MODERN LIFE

2.7.1 INTRODUCTION

The importance of physical fitness in a contemporary society cannot be over-emphasised as there appears to be a general lack of emphasis on the development and maintenance of physical

fitness in most industrial societies. This could be attributed to the importance placed on intellectual prestige and the development of labour saving devices, the use of which may be detrimental to physical fitness (Coutts, 1977:57). Barrow and Brown referred to this as the emphasis on cortical activity. They were of the opinion that humankind's need for organic fitness through movement was just as great now as it always has been. They wrote:

Mental processes that are demanded by an automated and enlightened society are based on biological fitness; if they are to function at peak capacity, they must be based in a fit body.

(Barrow and Brown, 1988:208)

This was supported by John F. Kennedy (1960:15) when he said that if we fail to encourage physical development and prowess we will undermine our capacity for thought. There is evidence that many people question the need for strength and endurance in our technological society where a large portion of the work is sedentary. Many leaders in the political, social and industrial fields show little concern for the maintenance of a physically strong nation (Coutts, 1977:47). This has been described by Wolffe (1961:75) as a tragic myopia. Modern life no longer makes demands on the human body that will test and strengthen it (Arnold 1972:39). Humankind has won the struggle for a soft, comfortable existence. Mechanisation has replaced muscles and automation has supplemented both

muscles and mental processes. The computer reduced thousands of hours of mental work to a few minutes. Unfortunately, this lifestyle has encouraged many people to abstain from vigorous physical activity that is necessary for a healthy lifestyle. It is possible for the individual with a low physiological capacity to exist, but in terms of challenge and stress, these individuals often experience a decline in the quality of life during the ageing process (Barrow and Brown, 1988:208-209).

2.7.2 STRESS AND MENTAL HEALTH

Modern life is characterised by speed, the hurry-up and wait syndrome, noise and numerous other tension producing factors. The stress created by the demands of modern life can be tremendous. Stress can be perceived in different ways by different people and varies from nervous tension, anxiety, depression to emotional disturbance. The most common psychiatric disorders today are anxiety and depression (Wessels, 1985). Anxiety has been defined as a state of mind similar to fear but without specific, realistic cause. Depression, on the other hand, has been defined as a state of mind characterised by sadness generally associated with loss (Hacket and Cassem, 1973).

Selye (1977:81) described stress simply as the rate of wear and tear within the body and went on to state that stress was an integral part of human existence. Stress has also been described as a condition

which develops when demands made on the individual exceed his/her adaptive (coping) skills (Hurrell et al., 1988; Fisher and Reason 1988; Fleming et al., 1984; Hobfoll, 1988; Appley and Trumbull, 1986.) It can be seen from this definition that various forms of stress that can be experienced by an individual make it a complex phenomenon. Selye (1977:81) described the effects of a stressor acting upon the body. It evoked an alarm reaction. Immediately afterwards, the person started to adapt to this reaction in order to restore the balance as much as possible. The human system has only limited adaptability and energy and if the stressor was not removed, a third phase, that of exhaustion, would set in and in exceptional cases it could be fatal. These reactions to a stressor were described by Selye (in Fitness Ontario Leadership Program, 1983:38) as the general adaptation syndrome (GAS). Not all tension or stress was always negative and Selye has called positive stress eustress, the Greek word “eu” meaning good. He referred to negative stress as distress (La Place, 1984:52). Stress, whether it be positive or negative, always caused an alarm reaction and one could not always predict whether the stressor would evoke a negative or positive reaction (Selye, in Fitness Ontario Leadership Program, 1983:38). The purpose of this alarm reaction was to prepare the body for physical action and this caused a whole series of physiological processes to take place, including the following:

- hormones that accelerate metabolism are excreted;
- the liver provides energy;

- the blood flow is withdrawn from the skin and intestines and is diverted to active muscles and the brain;
- the blood pressure rises;
- perspiration increases;
- appetite decreases;
- the mouth becomes dry;
- the pupils dilate;
- a feeling of excitement and anxious participation is experienced.

(La Place, 1984:52)

Schomer (1985:38) agreed with the physiological processes that made the body ready for physical activity. If physical activity did not follow, this biochemical state of being ready for action would take far longer to revert to normal than it would have, had physical activity actually taken place. Often our social order does not provide either the opportunity, the motivation, or social approval for the vigorous actions needed to neutralise these chemicals (Barrow and Brown, 1988:209). People, therefore, tend to smother their daily stress. This principle of fight or flight should be balanced out in modern living with the design of exercise to use up these secretions, as the autonomic nervous system's response to stress is part of the human biological legacy. Morgan (in Pollock et al., 1978:3) supported this when he wrote that participation in physical activity not only increased the body's resistance to stress but also provided a positive release valve for the frustrations and tensions of daily living.

Holmes and colleagues (in Carson et al., 1988:144) developed the Social Readjustment Rating Scale (SRRS). This is an objective method for measuring the cumulative stress to which an individual has been exposed over a period of time. The scale measures life stress in terms of life change units (LCU) involving the following events.

Events	Scale of Impact
Death of a spouse	100
Divorce	73
Marital separation	65
Jail term	63
Death of a close family member	63
Personal injury or illness	53
Marriage	50
Fired at work	47
Marital reconciliation	45
Retirement	45
Change in health of family member	44
Pregnancy	40
Sex difficulties	39
Gain of a new family member	39
Business readjustment	39
Change in financial state	38
Death of a close friend	37
Change to a different line of work	36
Change in number of arguments with spouse	35

High mortgage or loan	30
Change in responsibilities at work	29
Son or daughter leaving home	29
Trouble with in-laws	29
Outstanding personal achievement	28
Wife begins or stops work	26
Begin or end school	26
Change in living conditions	25
Revision of personal habits	24
Trouble with the boss	23
Change in work hours or conditions	20
Change in residence	20
Change in schools	20
Change in recreation	19
Change in church activities	19
Change in social activities	18
Small mortgage or loan	17
Change in sleeping habits	16
Change in the number of family get-togethers	15
Change in eating habits	15
Vacation	13
Christmas	12
Minor violations of the law	11

Figure 2.7 Social Readjustment Scale (SRRS)
(Carson et al., 1988:144)

Holmes and his colleagues stated that people who have been exposed in recent months to stressful events that added up to an LCU score of 300 or above, were at risk of developing a major illness within the next two years (Carson et al., 1988:144).

All statistics indicate an increase in the stresses leading to mental and emotional disorders (Barrow and Brown, 1988:119). Zanchetti and Malliani (1975:331) reported that emotional or neural reflexes, some of which involved the emotional experience of cardiac pain, could result in coronary occlusion. They concluded that they could define most of the pathways and interrelationships involved and could therefore suggest therapeutic measures to avoid dangerous complications. They also addressed the question of whether or not an acute coronary disturbance could be precipitated by emotional and neural factors. They concluded that there were single instances in which myocardial infarction or an anginal attack or even sudden death could be caused by psychoneural factors but they were uncertain of how often this occurred.

Such mental and physical disorders may be attributed partly to the lifestyle followed by society. Kotze (1992:206) reported that the problem was complex but perhaps could be alleviated by more emphasis being placed on physical activity along with a better use of leisure time. This was supported by Wessels (1985) when he wrote that regular physical exercise formed an essential part of the prevention and treatment of mild anxiety and depression. Kotze

(1992) elaborated on the concept of vigorous physical activity, when he wrote that vigorous physical activity was needed in youth and had to continue into adulthood to afford release from tension and stress placed on the emotions and the nervous system. As a result of the failure to manage stress, serious physical and psychological symptoms or conditions could follow, for instance metabolic changes, physical diseases and psychosomatic conditions such as cardiac or stomach diseases and paralysis. At the psychological level there could be symptoms which indicated the various decompensations caused by stress. These symptoms included extreme anxiety, phobia, breaking with reality, delusions and hallucinations, thought and speech disorders. All these symptoms were associated with psychoses and could lead to death (Kotze, 1992:206).

The advantages of regular exercise, of moderate to high intensity, go far beyond the physical benefits. Wilkie and Eisdorfer (1971) found that cardio-vascular problems may also affect cognitive functioning. They studied a group of adults for ten years and concluded that people with high blood pressure showed a decline in intellectual ability. Wang et al. (1970) also found that cardio-vascular disease had an adverse effect on performance during certain intelligence tests.

Clarke-Smith and Hartley (1989) investigated the link between physical exercise and cognitive abilities. During the study of

reasoning, certain memory tasks and reaction time, they found the people who regularly participated in physical exercise fared much better than those who did not. Dustman et al. (1984:35-42) found that aerobic exercises performed over a period of four months improved both neurological and the cognitive functioning of adults more than power and suppleness exercises done by the control group. In a discussion of physical activity and cognitive performance, Stones and Kozma (1988) also came to the conclusion that adults who did physical exercise regularly performed cognitively better than those who did not exercise and that an exercise programme consisting mainly of aerobic exercises enhanced cognitive performance.

Shephard (1986:93) reported that some observers have argued that the benefits of an exercise class come largely from a change in the pattern of activity rather than an increase of energy expenditure. Peters et al., (1977) examined 56 non-participants and 126 volunteers in a large manufacturing company. After four weeks of observation, volunteers were assigned randomly to one of three groups; those given no instructions, those allowed to attend relaxation classes, and those taught specific relaxation techniques. For twelve weeks, scores were kept for symptoms (30 somatic and 20 behavioural items), illness (pain or fever), work performance (four items), sociability and satisfaction (six items), and happiness. All measurements except the index of happiness improved roughly in proportion to involvement in the relaxation programme.

Noakes (1986) was of the opinion that the most important benefits of exercise may concern mental health. He reported that physically active people tended to be happier, less fatigued, less depressed and less nervous. They appeared to have greater emotional stability, be more self-sufficient and have greater self-confidence than their non-active counterparts. Fasting (1982) found that people who exercised regularly had greater vigour, better quality of life and an enhanced self image, and Howard et al. (1984) reported that physical activity moderated the detrimental effects of stressful living. Cureton (1970:9) carried this idea further when he said that exercise was a great potential positive health force. He recommended that people should receive a better education so that there would be a greater understanding of the nature of physical fitness. He was also of the opinion that it was mainly disease that captures the interest and the money, not progressive physical activity for dynamic health.

Shephard (1986) also reported that some authors have made quite strong claims on financial grounds for stress education methodology. Manuso (1983) estimated that a biofeedback-centered relaxation programme could save as much as 80 percent of the company costs arising from industrial stress, with a \$5.52 return on every dollar invested. Shephard (1986) concluded that both quality of work and relaxation programmes have some practical value in the workplace and deserve consideration as alternatives, or preferably as adjuncts, to physical activity enhancement programmes. Exercise therefore may be seen as a positive influence on a number

of stress-related conditions.

2.7.3 SEDENTARIANISM

Technology, computerisation and automation have gradually reduced the long working hours of the past and have made it possible to provide large amounts of leisure time to the average individual. Historically, work has always been the central requirement of life for the greater majority of people. For many individuals this increase in leisure time has caused more problems than it has solved as people do not know how to use their leisure time constructively. Barrow and Brown (1988:20) were of the opinion that it was incumbent on society to make leisure an asset rather than a liability.

Unfortunately enforced leisure time in the form of unemployment is part of our rapidly changing, technological advancing society. Today's workers often find that their jobs have become redundant. This kind of unemployment has serious health consequences. Brenner (1977:12) conducted several studies on the effects of unemployment on the health of the unemployed and their families. He concluded that one-quarter of one percent rise in unemployment rate in the United States of America was directly associated with 1 500 additional suicides; 1 700 additional homicides; 25 000 additional strokes, heart and kidney deaths; 5 500 added mental admissions and 800 additional deaths from cirrhosis of the liver.

This all occurred within a five year span.

Technology has provided a working atmosphere in which more can be achieved during the typical working day but may have taken away the joy of creativity and self-expression. Many working environments do not provide an atmosphere for developing interpersonal relationships. These types of working environments have caused emotional and physical health problems. To prevent this from happening some nations, notably the Chinese, have made physical activity a universal involvement, and workers exercise regularly on the job (Berry, 1977:12). Technology has also made life easier and more comfortable and less demanding physically. This has resulted in humankind becoming less active physically with an increase in health problems related to a sedentary lifestyle (Barrow and Brown, 1988:207).

History has taught us that as nations become more affluent, they become more sedentary (van Dalen and Bennett, 1971). A survey undertaken in the United States of America in 1850 found that 30 percent of all work was carried out by manual labour. This percentage had dwindled to only 0,9 percent by 1950 (Blakslee and Stamler, 1963:106). According to Christian (1970:11) the state of sedentarianism of humankind has not yet reached a turning point. He wrote:

In 1995 we will have moving pavements and in the

year 2000, due to the deterioration of public health, it will be illegal to have moving pavements and all people will be forced by law to walk one hour daily.

Comparisons between active and sedentary lifestyles began in the early nineteen-fifties. The study by Morris et al. (1953:1053-1057) showed the degenerative effects of sedentarianism on London bus drivers as compared with the more active conductors. In this study of 31 000 transport workers it was established that the bus drivers were more prone to heart disease than the bus conductors who were engaged in walking and climbing stairs. Another study of a similar nature was conducted in the United States. This study compared postmen who delivered letters door to door with sedentary postal clerks who occupied desk jobs. A similar result was recorded, in that the active postmen had less coronary heart disease than the postal clerks (Morris et al., 1953: 1111-1120).

Wolffe (1961:76) quoted another study by J.M. Morris that revealed the following:

The number of heart attacks among sedentary workers, clerks, switchboard operators and truck drivers was three times greater than among those engaged in physically active occupations-labourers, miners, transport workers and farmers.

Criticisms were levelled at these studies as self selection was a factor in job selection. This meant that an obese or an inactive person might be more likely to apply for a less active job than a more active person. Another factor could have been that those with sedentary jobs may have had higher risk factors of heart disease to begin with. These risk factors could have included high blood pressure. It must nevertheless be noted that these studies paved the way for the association between physical activity and heart disease. Morris et al. (1973:333-339) conducted a follow up study of 17 000 men aged between 40-50 years, selected from a population of British civil servants. They obtained data regarding health and history of physical activity over weekends, through a questionnaire survey. This survey revealed that among the coronary patients there were twice as many sedentary men as men who were engaged in regular vigorous exercise.

In the United States of America, two medical doctors, Kraus and Raab (1961:61) identified several ailments that could be associated with the lack of physical activity and they termed these ailments hypokinetic diseases. These conditions include heart disease, high blood pressure, overweight, degeneration of blood vessels, certain abnormalities in physical posture and damage to muscles, ligaments, bones and the spinal column and diabetes. They also maintained that early symptoms of such abnormalities were shortness of breath, even after minimal exertion, generally reduced functional ability, rapid onset of fatigue, heart pains, dizziness, a

feeling of coldness in the limbs, headaches, a lack of initiative, lowered powers of concentration, a tendency to be constipated, low back pain, poor sleeping habits and a decrease in productivity. It is now believed that hypokinetic diseases begin in youth and are related to lifestyle. Heart disease, for example, is associated with high levels of cholesterol, although it has been shown that cholesterol may be controlled through proper diet and regular vigorous exercise (Shephard, 1986). Corbin and Lindsey (1985:22) described hypokinetic disease as a condition associated with the lack of physical activity or too little regular exercise. They included heart disease, high blood pressure, back pain or problems, obesity, ulcers, diabetes, insomnia, depression and Type A personality in their categorised incidence of hypokinetic diseases and conditions.

Health costs are on the increase all over the world, and it is these phenomenal costs that have contributed to the emphasis being laid on the prevention of disease rather than the curing of disease. The following statistics give an indication of how prices in this regard have escalated in the various parts of the world (HSRC 1982:61).

Country	Year	Expenditure
Germany	1972	DM 136,5 billion
	1978	DM 200,0 billion
Canada	1960	\$2 billion
	1970	\$70 billion
United States of America	1950	\$12,7 billion
	1978	\$212.2 billion
South Africa	1980	R1,2 billion

According to Palm (in HSRC, 1982:68) those diseases with which physical activity could be associated (heart disease and circulatory problems, overweight and diabetes) are responsible for up to 30 percent of the health care costs. Strydom et al. (1987:16) wrote that it has become imperative in South Africa to introduce positive methods in an effort to counteract the problem of high health care costs and unnecessary death. They stated that the people in the developed countries of the world were largely responsible for their own demise, due to a destructive mode of living.

Wyndham (1976) indicated that the leading causes of death amongst Whites of all age groups in the Republic of South Africa in 1970 were typical of a developed Western nation. These causes were ischemic heart disease, cerebrovascular incidents, cancer of the alimentary canal, bronchitis and associated respiratory ailments. Wyndham (1981) pointed out that in 1970, 59,5% of the deaths amongst Whites could be ascribed to destructive habits. Amongst Asians, Coloureds and Blacks, the figures were 52,4%, 36,7% and 21% respectively.

The Lalonde report (In Wyndham, 1981) reported that in the United States of America in 1976, 50% of the leading causes of death were the result of poor living habits. The rest comprised 20% due to biological factors, 20% due to environmental factors and 10% due to inadequate health services. The report identified the more specific destructive habits as overeating, smoking, lack of exercise, alcohol abuse and job stress.

Two topics have been selected for special attention, namely, heart disease and diabetes mellitus. Today the growing incidence of death from heart disease has reached alarming proportions. Gordon (in Institute for Aerobic Research 1988:36) described coronary heart disease as the greatest sustained epidemic confronting humankind. However, in recent years the deaths from coronary heart disease in the United States of America has begun to decline due to a combination of factors including primary favourable changes in coronary heart disease risk factors and improved medical care. Gordon (in Institute for Aerobic Research, 1988) estimated that changes in risk factors, namely, cigarette smoking, blood pressure control, cholesterol lowering and increase participation in physical activity may have accounted for more than half of the total decrease in deaths from this disease. In comparison, they attributed approximately 40% of the decline to recent medical interventions.

Diabetes Mellitus is responsible for high morbidity and mortality rates, especially among the Indian population (Omar et al., 1985).

It is also notable that the high prevalence of diabetes mellitus is well reported in South Africa (Marine et al., 1969). Sonksen et al., (1991:109) has elaborated on the benefits of exercise for the diabetic and said that these benefits were the same for the non-diabetic but that there were benefits unique to diabetics. Exercise may lower blood glucose and insulin requirements. Obesity was a problem for many diabetics and exercise and diet was one solution.

2.7.4 HEART DISEASE

Different types of heart disease have been identified and include hypertension, atherosclerosis, coronary occlusion, angina pectoritis and congestive heart failure. Evidence indicated that inactivity may relate in some way to each of these types of heart disease. Activities involving endurance need to be encouraged most and it was evident that the spread of labour-saving devices would necessitate many people obtaining physical activity through means other than work (Bailey and Field, 1976:19-25).

Heart disease used to be regarded as a manifestation of old age but today the growing incidence of deaths from heart disease among younger men and women has reached alarming proportions. The World Health Organisation proclaimed in 1969 that heart disease would result in coming years in the greatest epidemic mankind has faced, unless we were able to reverse the trend by concentrated research into its cause and prevention (in Inglis, 1981:3). The

South African Heart Foundation (1990:5) reported that coronary heart disease was the leading cause of death and disability for both white men and women in South Africa today. It caused twice as many deaths among Whites per year as cancer and road deaths combined. Similarly, Asians and urban Coloureds were at high risk. South Africa could expect 48 000 people to suffer heart attacks in 1992. Of these, 12 000 would die instantly or soon thereafter and 36 000 would survive this devastating personal crisis, would be rehabilitated and forced to change their lifestyles. The South African Heart Foundation estimated that in urban South Africa, one in three men and one in four women would have coronary heart disease by the age of 60 years (South African Heart Foundation, 1990:5).

The link between inactivity and fatal heart attacks was reported when Paffenbarger and his colleagues at Stanford Medical School published data on two major research studies. The first study, conducted in 1975, involved 6 351 dock workers from San Francisco. It was found that those workers employed in jobs demanding high energy expenditure had an 80 percent lower risk of fatal heart attack than the workers required to do less work. Although the active group smoked slightly less and were thinner than their more sedentary counterparts, these two factors could not explain the substantial difference in the risk of fatal heart attacks between the two groups (Paffenbarger and Hale, 1975:545-550).

The other group studied by Paffenbarger et al., (1978:161-175) comprised 16 936 Harvard University graduates. They found that those who were physically active in leisure time and who expended more than 2 000 Kcal per week, had a significantly lower risk of both fatal and non-fatal heart attacks. They recorded a decrease in total, fatal and non-fatal heart attacks with the increasing levels of physical activity.

It would appear that only lifelong physical activity of a fairly high intensity could protect the individual from coronary heart disease. It was found that University athletes who became sedentary in later life received no protection from coronary heart disease, whereas sedentary students who became active in later life, received protection equivalent to university athletes who remained physically active for life. Paffenbarger et al. (1986:605-613) confirmed this when, in a follow-up study of a large population of Harvard Alumni, they showed the life expectancy of vigorous active men who started exercising in their thirties was increased by two and a half years.

Epidemiological studies took leisure habits rather than work patterns into consideration. Morris et al. (1973) studied 17 000 men aged between 40-64 years. These men were selected from a population of British civil servants. Data was obtained regarding health and a history of physical activity over weekends, through a questionnaire survey. The questionnaire revealed that among the coronary patients there were twice as many sedentary men than men who

engaged in regular vigorous exercise. Morris (1990) again studied 9 376 men aged between 45-64. They showed that exercise must be vigorous and ongoing to protect the individual against coronary heart disease. Individuals who engaged in only non-vigorous activities such as golf gained no effective protection.

Other studies linking physical activity and reduced risk of coronary heart disease include that of Ratcliffe and Cronin (1958:41-52) who reported that animals benefit from exercise. They analysed causes of death among mammals and birds in the Philadelphia Zoo for a period of 40 years. Autopsies on 3 000 mammals and 7 000 birds indicated that the frequency of arteriosclerosis multiplied 10 to 20 times in this period. This was attributable to the decreased physical activity within the confines of the increasingly crowded and limited space of the zoo.

Andrews (1991:13) reported that there was a definite decline in the fitness of South Africans as they became older. In a study comparing South African and Canadian school boys in 1975, he reported superior fitness in the South African sample in every age group and in every test administered. This superiority was, however, greater at the age 13 years than at the age 17 years.

In a subsequent study of South African and American Students aged 18-24 years (male and female), Andrews (1985) found that this superiority had turned to inferiority, with the American sample now

recording significantly higher levels of fitness than their South African counterparts in the majority of the test conducted.

In a more recent survey of South African adults aged 18-55 years (male and female), Andrews (1990) confirmed the substantial loss of fitness demonstrated by all South Africans as they age. This study also indicated an accompanying increase in body mass, more so in men than for women.

A study completed by Nel et al. (in Turnbull, 1992:5) on 42 477 Cape school boys, indicated that their fitness levels were exceptionally low. Forty-three percent of the boys failed their fitness tests, while 66,3 percent scored below 60 percent. Scientific evidence has suggested that the level of fitness amongst children dropped drastically from 1975 to 1989 (Turnbull, 1992:6). He also suggested that children should be encouraged to partake in selective exercise for health benefits and not just for sporting achievements.

Nel et al. (in Turnbull, 1992:6) indicated that 95 percent of all standard 8 to 10 boys from 300 high schools in the Cape Province were not capable of compiling or planning a safe or healthy exercise programme. Andrews (1991:13) summed up the South African situation concisely when he wrote that South African athletes and other sportsmen and women may demonstrate high levels of performance-related fitness when we re-enter the international

sporting arena, but this will be no reflection of the general standard of health-related fitness among South Africans today.

Shephard (1986:39) wrote that good evidence existed to show that an increase in physical activity approximately halved the risk of subsequent coronary disease. He went on to comment on the direct personal and impersonal costs of heart disease as well as the losses resulting from morbidity and intangibles such as grief. Shephard (1986) estimated that these items cost the United States \$3.1 billion and \$ 8.2 billion respectively in 1962. He went on to estimate that in 1986 their worth would be approximately \$47.1 billion, or given a United States labour force of 110 million, \$428 per worker-year. If vigorous exercise halved this cost and 20 percent of the workers and their spouses were persuaded to adopt the necessary programme of vigorous activity, the savings would amount to \$42.80 per worker-year.

A substantial list of risk factors has been associated with the individual's chances of developing ischaemic heart disease. The three prime candidates are cigarette smoking, a systemic blood pressure greater than 160-95 mm Hg and serum cholesterol greater than 7 m mol/l with low HDL /LDL cholesterol ratio. Pollock et al. (1978:11) wrote that when these risk factors existed simultaneously their effect was greater than the sum of the three. The South African Heart Foundation (1993:5) stated that although high blood cholesterol was a risk factor which could be easily controlled by making simple changes to one's eating habits, it affected

approximately 4,8 million South Africans, placing them at risk of developing coronary heart disease. Other risk factors which have been associated with heart disease are male gender, a family history of heart attacks, lack of exercise, glucose intolerance and the use of contraceptive drugs. Shephard also reported that the impact of mesomorphy, a type A personality and a high serum uric acid was less well established (Shephard, 1987:186). Noakes (1992:561) added to the list when he included physical activity, elevated plasma fibrinogen levels, lower social class, European ancestry, short stature and male (abdominal) type obesity. Inglis (1981:3) concluded that in order to control heart disease there needs to be a better dissemination of advice on how to reduce the risks of contracting heart disease.

Two physicians, Friedman and Rosenman (in La Place, 1984:56) designed a personality profile for the type of people who usually developed medical problems that could be traced to stress. They called this the type A personality. Typical characteristics of these individuals are that they are always in a hurry and working to a deadline, are highly competitive and are even sometimes hostile and aggressive. The type B personality is the opposite of the type A. They are more relaxed and, despite the fact that they often drive themselves, they generally have a more balanced character than do the type A personalities. Friedman and Rosenman maintained that most people fall into one of the two groups, although the dividing line between the two is not always absolute. Inglis (1981) also concluded that it was necessary to take appropriate measures to

avoid and control stress and to react to indicators such as hypertension, breathlessness, palpitations and angina and not simply surrender to a lifetime of beta-blockers, or other more fashionable replacements that could follow if they were eventually discredited. Inglis (1981) suggested that factors such as relaxation, exercise and diet should be considered. This should be related to the requirements of the individual in that their heredity, constitution, home environment, job and lifestyle should be considered.

Heart disease and tobacco smoking have been closely linked for a number of years. Tobacco smoking has been shown to result in a decreased ability of the cardio-respiratory system to respond to the demand of an aerobic fitness programme (Shephard, 1987). Nicotine causes blood vessels to constrict, thus inhibiting the blood flow. This in turn causes a rise in the resting heart rate. Carbon monoxide in cigarette smoke combines with haemoglobin in the blood, consequently diminishing the transportation of oxygen. There is a long list of medical reasons supporting the abstinence from cigarette smoking. They are an increased risk of various types of cancer, including tumours of the lungs, larynx, bladder and urinary tract, the breasts, mouth and lips. Other health hazards include chronic bronchitis and emphysema, coronary vascular disease and thromboangitis obliterans.

Nair (1994) reported on the latest fibrinogen research results and how these related to degenerative diseases. Studies showed that

increased fibrinogen levels were found in angina, myocardial infarction, strokes and diabetes. Cigarette smoking was regarded as one of the factors that increased fibrinogen levels in the blood. It was also concluded that when fibrinogen levels were low, the risk of heart attack was not increased even if blood cholesterol and blood pressure were high. If fibrinogen and cholesterol levels were high, heart attack incidence increased by the factor of six. High fibrinogen plus high blood pressure increased the risk of a heart attack by twelve-fold.

Pregnant women have been reported to be more liable to premature delivery and they show an increased perinatal mortality as a result of smoking. Upper respiratory infections have a longer duration in the smoker while minor illnesses also lead to longer periods of restricted activity, absence from work and bed rest. A shortened life-span is also experienced; a forty cigarette a day addiction, at twenty-five years, shortens the life-span by eight years. Even ten cigarettes per day shortens life by five years (Shephard, 1987:199). The Heart Foundation of Southern Africa (1993:4) stated that smoking rates are higher in South Africa than in most other countries and causes 25% to 30% of all deaths due to heart disease.

Kristein (1982) gave a detailed costing of an average cigarette habit from the view point of an employer.

Employer	Cost
Excessive insurance costs per average smoker	\$401-419
Health	\$298
Fire	\$15
Workmen's compensation and other accidents	\$58
Life insurance and early disability	\$30-48
Other annual costs per average smoker	\$498
Absenteeism*	\$117
Productivity	\$242
Involuntary smoking	\$139
Total Cost	\$899-917
Potential Short-run (1-3 year) saving from successful withdrawal	
Fire, workmen's compensation, accidents	\$73
Absenteeism	\$117
Productivity	\$242
Involuntary smoking	\$80
Total Savings	\$512

- * On average, smokers are absent about 2 days more per year than non-smokers due to such problems as longer duration of upper-respiratory infections.

Figure 2.8 Potential Costs to the Employer of a Smoking Employee
Kristein (1982:30).

The productivity figure in the above table, although large, was based on the assumption that an equivalent of eight minutes of work per day was lost through the smoking ritual, extra clean-up costs, damage (to equipment, furniture and fixtures), and errors due to eye

irritation. Another United States estimate found additional costs equivalent to \$5.50 per day for each smoking employee; the total burden amounting to 81 million days of work loss and a productivity deficit of \$19 billion (Danaher, 1980).

Morgan et al., (1976) reported that a likely lifestyle benefit from an exercise programme was a doubling of successful cigarette withdrawal with a small improvement in the success of alcohol withdrawal. Shephard (1986:43) wrote that there was an additional complication in that heavy consumers of cigarettes and alcohol were not generally attracted to fitness and lifestyle programmes

The other risk factor that has been reported to cause heart disease is hypertension. This condition is a common phenomenon among the middle-aged, particularly if the person is physically inactive, overweight, subject to a great deal of stress and on top of that, is also a heavy smoker (Shephard, 1978). The disease was referred to by Pollock et al. (1978:10) as the silent killer because there are usually few or even no warnings that hypertension exists.

High blood pressure according to Thomas et al. (1981:56) was responsible for approximately 5.9% of the patients who consulted general practitioners and 9.3% of those who consulted physicians.

Lew (1959:1) reported that life expectancy in both sexes at all ages varies inversely with arterial blood pressure. Similar data from

Framingham, Albany, Chicago and other places established that this relationship was continuous at all blood pressure levels (Lew, 1959). Deming (in Kitchevsky et al., 1975:286) was of the opinion that this relationship was extremely close in cases of cardiac infarction but even closer in cases of cerebral infarction. He reported on the relationship between hypertension, diet, serum cholesterol and estrogen. He concluded that the effects of diet and serum cholesterol, while important when considering hypertension, were much more important when there was an incidence of high blood pressure and low estrogen, than when there was low blood pressure and high estrogen.

Maharaj and Pillay (1993:104) stated that the prevalence of hypertension in South Africa was high. Seedat and Seedat (1982) reported figures of 10% in rural Blacks, 25% in urban Blacks, 14.9% in Indians, 17.2-34.9% in coloureds and 17.2% in Whites. Hypertension and its complications have been shown to account for a significant proportion of mortality among economically active individuals of all race groups in South Africa (Wyndham, 1981:411).

Maharaj and Pillay (1993:102) supported this view when they stated that hypertension and diabetes mellitus were important health problems in South Africa. Both conditions had a high prevalence and were associated with significant morbidity and mortality. They emphasised that early treatment was important if complications were to be reduced. However because these diseases were usually

asymptomatic, they remained undiagnosed in a large number of patients. Screening programmes at the work site could be an important means of early detection (Maharaj and Pillay, 1993).

The exact role that exercise plays in the lifestyles of people who suffer from hypertension is not quite clear at this stage. Pollock et al. (1978:10) and Thomas et al. (1981:56) agreed that it seemed as if people who were physically more active were inclined to be less at risk with regard to hypertension. Thomas et al. (1981:58-59) reported on studies undertaken by Bonnano and Lies, and Boyer and Kash on people with hypertension who have shown that regular exercise can improve the condition.

A great deal has already been written about the effects of regular exercise on cholesterol levels in the blood.

Originally the findings were somewhat contradictory, but improved techniques enabled more accurate analysis. As a result new light was thrown on the problem and there are now indications that dangerous levels of low density lipoprotein (LDL) can be reduced through exercise whereas levels of the beneficial high density lipoprotein (HDL) can be increased through exercise (Pollock et al., 1978:20).

Gordon (in Institute for Aerobic Research, 1978) reported that obesity was a condition of excess body fat and in many

industrialised countries obesity was a very common disorder, and the chronic diseases associated with it were major risk factors for coronary heart disease including elevated levels of blood cholesterol, blood pressure and blood glucose. Even more serious is the increasing prevalence of obesity in developing countries. The United States Surgeon General's report on Nutrition and Health (in Shephard, 1986) pointed out that obesity was an important risk factor for the development of non-insulin dependent diabetes mellitus, hyperlipidaemia, coronary heart disease, stroke, gallbladder disease and certain types of cancer. Glueck and Tallat (in Kitchovsky et al., 1975:313) stated that genetic hyperlipoproteinemias are common and are easily diagnosed and are often expressed in children and infants. They found that familial combined hyperlipidaemia, hypercholesterolemia and hypertriglyceridemia are all associated with a markedly augmented atherosclerotic cardiovascular event rate. Shephard (1978:186) wrote that the argument is semantic, since the correction of obesity still reduced the likelihood of a heart attack because it reduces hypertension and corrects an adverse lipid profile. Burnett van Tonder et al. (1990:51) reported that the heart rate of obese people tended to be higher than normal. Each 10 percent increase in body mass was accompanied by a 10 percent increase in heart rate. The systolic blood pressure of the obese person is also raised above normal. A study by Thomas et al. (1981:61) indicated that overweight people eat less than do people who have a normal body mass. Experts maintained that a lack of physical activity to control

the calorie balance could be held responsible far more than could over eating.

Many studies have attempted to determine which human taste preference drives the individual to consume or over consume food. Drewnowski (1994) reported that when subjects were given sugar solutions containing increasing concentrations of sugar, all individuals over the age of twelve, the lean as well as the obese, demonstrated a breakpoint of preference at 10 percent. While children younger than twelve demonstrated a breakpoint preference at 30 percent. This indicated that individuals found the taste unpleasant and stopped eating. However, no such cut-off point could be identified for fat. Drewnowski (1994) stated that the latest biochemical theory that has been proposed to explain the craving for fats was the release of opiates in the brain when fat is eaten. Opiate molecules make the individual feel relaxed and happy. The higher the fat content of food the greater humankind's preference and for every gram of fat twice as much energy is produced when compared with sugar or carbohydrates. It is therefore clear that the hedonistic pursuit of fat rich foods leads to obesity, heart disease and certain types of cancer.

Studies undertaken on both overweight and normal weight people indicated that the overweight people have very much lower patterns of physical activity. Similar results were achieved in experiments carried out on animals (Pollock, 1978:49). Apart from exercise, it

will be necessary to give overweight people particular information with regard to eating habits and eating patterns. A study undertaken by Stalonas, Johnson and Christ (in Thomas, 1981:63) showed that the best results were achieved by a combination of information and exercise. Pavlou et al. (1985:466-471) emphasised the particular benefits of exercise associated with weight control. They reported that exercise caused the metabolic rate to be elevated for some time after exercise and exercise could increase the thermogenic effect of food eaten some hours thereafter. Thus additional energy was burnt up free of effort. Exercise caused the body to lose body fat and increased lean body mass and body water, while dieting caused water, muscle and fat loss. Exercise caused fat to be lost from the central abdominal storage sites, whereas dieting caused fat loss from the peripheral fat stores. The increased lean body mass that resulted from exercise increased the basal metabolic rate. Thus a higher food intake would be needed to maintain a lower body weight. In contrast, weight loss by dieting alone caused a loss of lean body mass. Therefore, basal metabolic rate fell and progressively less food needed to be consumed to maintain the reduced body weight. The resting metabolic rate could be chronically elevated in those who trained 12-16 hours per week. Appetite and therefore food intake could fail to adapt immediately to increased physical activity. Thus there was a period in the beginning of an exercise programme when extra weight was lost as the food intake failed to meet the requirements. In contrast to the widely-held belief, exercise did not appear to stimulate appetite even in the

obese. Pavlou et al. (1985) concluded that not all activities were equally effective in weight reduction. Walking, cycling and running appeared to be the most effective, whereas swimming might be without effect. The reasons for this were unclear.

Bassey and Fentem schematically interrelated factors which may accelerate the progress of coronary heart disease:

PROGRESS OF CORONARY HEART DISEASE	
Social Factors	1. Smoking 2. Physical Inactivity (Work/Leisure) 3. High fat, low fibre diet
Physiological Factors	4. Obesity 5. High blood pressure 6. Heredity

Figure 2.9 Interrelated Factors which may Accelerate the Progress of Coronary Heart Disease.

(Bassey and Fentem, 1981:72)

As can be seen from the figure, diet, obesity, high blood pressure and physical inactivity are closely interrelated and in order to address one aspect all components would have to be taken into consideration.

2.7.5 DIABETES MELLITUS

Diabetes mellitus was described by an Egyptian as an illness characterised by raging thirst and excessive urination, as early as 1500 B.C. Arataeus, a great Greek physician, first used the word diabetes (meaning a siphon) nearly 2 000 years later to describe the same disease (Daly et al., 1988:1). The high prevalence of diabetes mellitus in South Africa is well reported; 4.2% in Blacks, 10% in Indians, 8.7% in Coloured and 4% in Whites (Marine et al., 1969 and Omar et al., 1985).

This disease is responsible for high morbidity and mortality rates, especially among the Indian population (Omar et al., 1985 and Seedat et al., 1990). Epidemiological studies have demonstrated that one of the major problems in addressing the situation is the high incidence of undiagnosed cases of the disease (Seedat and Seedat, 1982; Steyn et al., 1986; Omar et al., 1985).

Koivisto (in Alberti and Krall, 1991;169) was of the opinion that exercise exerted a number of effects on the substrate homostatis and the hormonal milieu and in a diabetic patient the response to exercise depends not only on the duration and intensity of muscular work, but also on the metabolic control of the insulin availability at the time that exercise is performed. He stated that blood glucose responded to short term intense exercise by rising rather than falling as occurred during moderate exercise. The hyperglycaemia and the

insulin resistance after intense exercise made vigorous exercise in diabetic patients therapeutically less valuable than moderate exercise of a longer duration. Furthermore, the instruction for the adjustment of diet and insulin dose needed to be different for intense, short term exercise than long term muscular work. Regarding endurance exercise of several hours, the insulin dependent diabetes mellitus (IDDM) patients may well participate in these events. This requires a substantial reduction in insulin dose whereas carbohydrate intake before and during exercise needed to be similar to that in healthy subjects. Under these circumstances, the fuel and hormonal response to endurance exercise was not markedly different in diabetic and healthy subjects, apart from the larger fluctuations in blood glucose concentrations in the diabetic patients (Koivisto in Alberti and Krall, 1991:169).

Sonksen et al. (1991:109) encouraged diabetics to exercise but cautioned a gradual, progressive warm-up for exercise together with an adequate blood sugar level control. Daly et al. (1988) stated that an insulin dependent diabetic could take part in almost any form of physical activity but should be discouraged from participating in activities such as hang-gliding, parachute jumping and scuba diving, not because diabetes made them impossible, but because hypoglycaemia in midair or underwater was disastrous. Sonksen et al. (1991:109) elaborated on the benefits of exercise and said that these benefits were the same for the non-diabetic but that there were benefits unique to diabetics. Exercise may lower blood glu-

cost and insulin requirements. Obesity was a problem for many diabetics and regular exercise was one solution. The relationship between obesity and type II diabetes mellitus is well established and the majority of type II diabetic individuals have been classified as obese (Sonksen et al., 1991).

2.7.6 NEGATIVE EFFECTS

Some negative effects of exercise have also received attention. It may be argued that exercise causes physical stress, but the maintenance of physical fitness was necessary if one was to cope effectively with stress (Kotze, 1992), and exercise was essential to physical fitness (Barrow and Brown, 1988). The body needs time to adapt to the stress of exercise and this can take months if one was to do it without injury. The symptoms of overtraining could be all or a number of the following: chronic muscle soreness, weight loss, loss of appetite, fatigue, thirstiness, amenorrhoea, interrupted sleep patterns, insomnia, depression, anxiety and irritation (Keep Fit International, 1990:206). Noakes (1992:309) was of the opinion that the overtraining syndrome developed in one of two ways: it occurred either in athletes who had been training very intensively for a protracted period, or else in those who entered a series of competitions in short successions and this followed a period of intensive training. Noakes (1992:308) recorded a comprehensive list of indicators of overtraining. This list included both emotional

and behavioural changes, as well as physical changes.

Emotional and Behavioural Changes	<ul style="list-style-type: none">* Loss of enthusiasm and drive; generalised apathy; and I don't care attitude; loss of joy for life.* Loss of joy and thirst for competition; desire to quit during competition.* Lethargy; listlessness; tiredness.* Peevishness; complaining; easily irritated; miserable; anxious; depressed; ill-humoured; unable to relax; bored.* Inability to concentrate at work; impaired academic performance.* Change in sleep patterns, in particular insomnia, sleep does not refresh.* Loss of appetite.* Loss of libido.* Poor co-ordination; general clumsiness.* Increased fluid intake at night; feeling thirsty.
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Physical Changes	<ul style="list-style-type: none">* Impaired physical performance, in particular, inability to complete routine training sessions.* Gradual loss of weight.* Athlete looks drawn, sallow, and dejected with sunken eyeballs.* Increase in early morning heart rate of more than five beats per minute, abnormal rise in heart rate on standing and during and after a standard workout, slower recovery in heart rate after exertion, postural hypotension.* Heavy leggedness, sluggishness that persists for more than 24 hours after a workout.* Muscle and joint pains, persistent muscle soreness increases from session to session.* Swelling of lymph glands.* Gastrointestinal disturbances, in particular, diarrhoea.* Increased susceptibility to infections, allergies, headaches, and injury.* Minor scratches heal slowly.* Loss of menstruation (Amenorrhoea) in women.* Increased blood eosinophil count, Serial T wave changes on the electrocardiogram.
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Figure 2.10 Indicators of overtraining/staleness syndrome.
(Noakes, 1992:308)

Recent articles have suggested that prolonged exercise increased the number of T lymphocytes (Steel et al., 1974), B lymphocytes (Hedfords et al., 1976), and polymorphs (Eskola et al., 1978). Thirty minutes after exercise, cortisol levels increased, white cell population dropped and a decreased ability to clear the blood of bacterial particles was apparent (Matracia and Matracia, 1980).

Klempner and Gallin (1978) wrote that if exercise was stressful enough to increase the output of hydrocortisone, it would interfere with the availability of Fc receptors on the neutrophils, which in turn would restrict the ingestion of immunoglobulin G sensitised particles. Mazza (1980) reported that the overall immune function appeared to be unchanged by several months of regular vigorous training and Shephard (1986:36) concluded that immune function was essentially unaltered as the individual improves in fitness.

The suggestion that long-distance running could cause osteoarthritis or degenerative disease has been made. This view was not supported by research findings as can be seen in a study by Lane et al. (1986:1147-1151) when he examined the joints of forty-two marathon runners, comparing them with forty-two non runners and occasional runners. They found no difference between the two groups with regard to the prevalence of osteo-arthritis or degenerative joint disease. The runners aged 52 to 72 did have 40% higher bone density than their counterparts in the control group. Lane concluded that running prevented bone loss. This was supported by Shephard (1978:133) when he wrote that a regular weight-bearing exercise programme reversed the normal 2% annual loss of calcium from the bones and could actually increase their calcium content. This was supported by Smith and Babcock (1973) when they wrote that physical activity prevented bone demineralisation.

Many sports persons have died suddenly during exercise. Galen, (Noakes, 1992:571) a Greek physician was one of the first to have expressed an opinion on the risk of exercise on the heart. He wrote:

Athletes live a life quite contrary to the precepts of hygiene, and I regard their mode of living as a regime far more favourable to illness than to health ... While athletes are exercising their professions, their body remains in a dangerous condition but when they give up their professions, they fall into a condition more perilous still; as a fact, some die shortly afterwards; others live for some time but do not arrive at old age.
(Noakes, 1992:571)

The modern sports to attract similar concern were rowing (Noakes, 1992), marathon running (Martin and Glynn, 1979), cycling (Sherman, 1983) and children's running (Friend, 1935).

Noakes et al. (1984a) countered this concern when he reported that virtually all persons who died suddenly during exercise had a serious disease, usually of the heart. This adequately explained the cause of death. Sports people below the age of 40 who died

suddenly during exercise were more likely to have had a condition known as hypertrophic cardiomyopathy (Noakes et al., 1984b). Other athletes who died suddenly during exercise had genetically-elevated blood cholesterol levels, which caused them to develop severe atherosclerosis at a very early age. This led to sudden death in their teens or early twenties (Noakes, 1992:574).

The data of Siskovick et al. (1982; 1984a; 1984b) showed that people who had undetected heart disease and who were therefore at risk of sudden death, reduced their overall risk of sudden death if they exercised regularly. During exercise, their risk was increased acutely. However, Noakes (1992:574) reported that if athletes had severe or advanced heart disease they were at high risk of dying suddenly, whether or not they exercised.

Fisher et al. (1986) and Cook et al. (1987) reported that there was growing evidence that the majority of female sports persons who had abnormal menstrual patterns also restricted their dietary energy intakes. The result was that their trabecular bones, in particular the vertebrae, were likely to become weaker as firstly, the blood levels of the female hormone oestrogen, which was required for normal bone mineralisation, were depressed and secondly, their dietary calcium intakes may be too low to maintain normal bone mineral content (Grimston et al., 1990a; 1990b). The female sports' persons' weaker bones were more prone to the development of bone strain, stress fractures and curvature of the spine in early adult life.

(Warren et. al., 1986) and almost certainly to more serious problems like pathological hip fractures complicating severe osteoporosis in older age (Noakes, 1992). However, women who were not amenorrhoeic and who were physically active have increased bone mass in the femoral neck and the lumbar spine (Wolman et. al., 1990).

Myburgh (1989) and Myburgh et. al., (1988; 1990) have also shown that dietary calcium intake of sports persons with shin soreness was abnormally low and was a predisposing factor for the injury.

Early studies suggested that relative to the general population, athletes had a somewhat above average overall death rate from cancer (Polednak, 1978). Possible contributing factors to an adverse outcome include an increased exposure to ultra violet radiation, athletic trauma and associated x-irradiation, a high intake of animal protein and thus of nitrites, an exercise induced increase in free-radical formation, abuse of anabolic steroids, a high consumption of cigarettes and/or alcohol after retiring from certain sports, and sport-specific risks, such as exposure to toxic agents through the use of tanned leather equipment (Shephard, 1990e).

2.7.7 THE NEED FOR EXERCISE

More recently, animal experiments, occupational studies, and long term follow-up individuals with active leisure pursuits have all

suggested that regular aerobic exercise could protect athletes against cancer of the colon, and in women, cancer of the reproductive system (Shephard, 1990e, 1992f). Shephard (1994: 259) reported that it remained unclear whether aerobic exercise stimulated heat defenses, or merely altered other risk factors for the cancer in question by increasing gastrointestinal mortality, controlling obesity, reducing blood levels of reproductive hormones, or encouraging adoption of a healthy overall lifestyle.

Suitably adapted aerobic training programmes could also be helpful in alleviating some of the effects of established disease and in restoring physical condition after successful treatment of the cancer (Shephard, 1990e).

Many researches have shown that a high level of physical fitness will improve a person's quality of life. Accumulated evidence shows that regular physical activity has preventive value in a wide range of chronic medical conditions, including ischemic heart disease (Morris et al., 1973; Paffenbarger, 1977; Paffenbarger et. al., 1978; Shephard, 1981), hypertension, with its associated renal and cerebrovascular complications (Kukkonen et. al., 1982a), peripheral vascular disease such as arteriosclerosis (Noakes, 1992), obesity, with associated problems of diabetes, cholecystitis, hypertension and renal disorders (Shephard, 1977), asthma (Shephard, 1982; Kukkonen et. al., 1982b), back and knee injuries, and certain mental disorders (Shephard, 1986:39).

Wolffe captured the need for exercise when he urged the development of sound physical fitness habits amongst young and old alike. He wrote:

We are duty bound to imbue the present
and growing generation with knowledge
for fitness; for total fitness, physical,
moral, intellectual and emotional fitness.

(Wolffe, 1961:76)

According to Shephard there was a balance sheet for any nation which actively promotes health-related physical fitness. This balance sheet affects the individual citizen, the private sector as an entity and the government of the day. In the final analysis, this balance sheet reflects many more benefits than costs.

Costs	Benefits
Personal	
Food Clothing and Equipment Admission fees Travel/Lodging Time Injury Death	Better intake of nutrients/vitamins. Reduced expenditure on alcohol/tobacco/drugs, forms of recreation, dress, clothing. New experiences. Meaning for age of leisure/employment. Reduced industrial and domestic injury. Improvements in perceived health, reduction of acute and chronic disease, enhanced quality of geriatric life. Control of alcohol/tobacco/drug dependence. Less passive smoking and fires. Improved personal appearance. Enhanced property values. Fewer problems from social deviance.
Private Sector	
Exercise facilities. Medical Supervision, exercise personnel. Time. Sports Injuries.	Worker satisfaction. Enhanced productivity. Reduced turnover and absenteeism. Reduced industrial injuries. Reduced health insurance premiums. Enhanced company image. Enhanced employment/economic growth. Entrepreneurial opportunities. Enhanced property values.
Government	
Fitness Promotion. Exercise facilities. Recreational workers. land acquisition. Infrastructure (roads, mass transit, etc.)	Reduced hospital and health-care costs. Reduced social deviance (vandalism, law enforcement, detention). Reduced geriatric dependency. Enhanced employment. Economic stimulation, increased tax base. Enhanced environment. Improved balance of payments. Worker benefits in government controlled enterprises (as noted above for the private sector companies). Military fitness.

Figure 2.11 Costs and benefits of Enhanced Physical Activity.
(Shephard, 1986:166)

Shephard (1994:269) wrote that it was difficult to excite a young adult about the prospect of living to 80 rather than 78 years of age. Immediate gains in the quality of life may be a much stronger reason to become physically active. If an exercise programme made a 35 year old man feel 50% better, this would represent a 15-20 year extension of a quality-adjusted lifespan, a major benefit that would be difficult to assure through some alternative form of therapeutic intervention. While the senior citizen who had been able to maintain an independent lifestyle at 95 or 100 years of age has succeeded in turning back the biological clock by 15-20 years. Again this is a benefit that cannot be matched by any dietary or pharmacological intervention.

2.8 THE FITNESS INDUSTRY IN SOUTH AFRICA

2.8.1 PROFESSIONALISM

In order to evaluate the accountability of the Fitness Industry in South Africa, the degree of professionalism at present prevailing in the industry would have to be considered. In order for the Fitness Industry to be classified as a profession the following criteria would have to be met. Such a profession would have to provide a unique social service to humankind. This service should be marked by specialised skills obtained from a body of knowledge of an academic discipline acquired by its members during a period of extended preparation, and conducted according to the standards of moral

behaviour and ethical practices (Barrow and Brown, 1988:311).

Perhaps one of the best ways to understand a profession is to compare it with a trade. According to Shivers (1967:185) a trade was carried out by technicians. These people knew rules, methods and techniques of their trade and could accomplish their work by means of their knowledge and skill but they did not understand underlying principles. There was also no requirement that these routine techniques and skills be subjected to the theoretical analysis as these skills and techniques could be obtained without formal schooling. Much could be learned while the practitioner was on the job and there was no guarantee that the practitioner had developed a sense of responsibility to the public for this knowledge and skill. They could also do their work without knowing the principles, theories and the academic matter that underlined their trade. A true profession was based on scientific and/or philosophical facts obtained through scholarly endeavours and then used to formulate principles.

A true profession was humanistic in nature and Shivers (1967:309) stated that recreation had only quasi professional status in its attempt to approximate the qualifications of the recognised professions. Semi or quasi professions generally fell short in areas of humanitarianism, criteria for examination or registration, and the power to police their own ranks (Barrow and Brown, 1988:313). Thus there were a number of criteria that could be used to judge the

status of the Fitness Industry as a profession. The Fitness Industry had the potential to establish an academic discipline which could be scientific and/or philosophical. In addition to their orientation, it was possible for there to be a cultural backdrop of the liberal arts. This would involve continuous study, research and theoretical analysis in the activities of the profession (Barrow and Brown, 1988:313). In the case of the fitness instructor it would, therefore, include the understanding of not only the activities of the field but also the nature of people (Shivers, 1976:186), thereby focusing on the humanitarian aspect of the field. The principles and practices of the fitness instructor should come from a wide area of learning. These areas were really interdisciplinary since they were derived from the natural and physical sciences as well as the behavioural and social sciences. The fundamental principles of fitness education should come from biology, physiology, anatomy, kinesiology, psychology, sociology and anthropology. The sciences should give the fitness instructor the principles with which to determine technology and methodology. However, principles based on science should not be obtained at the expense of the humanities and all principles should take into consideration the needs of society and should reflect social purposes.

The second quality that was needed if a profession was to be established, was specialised skills, in order to perform the services indicated by the roles. These skills together with their concomitant knowledge and understanding should be unique and they must lend

themselves to theoretical analysis and subsequent modification from theoretical conclusions. The average person or non professional usually did not have these specialised skills and this gave the professional a special competence and established a superior status in society. It could be said that the majority of the fitness instructors display a fair amount of competence with regard to specialised skills but many do not have a commitment to the knowledge and understanding that should accompany those skills (Barrow and Brown, 1988:315).

Another quality of a profession was that there must be a service motive. All persons in a profession should be committed to two things: one is the improvement of the society in which they lived and the other is the improvement of the profession.

Within a profession there should also be a code of ethics in order to provide definite behaviour by which the professional can be guided. Most codes of ethics are generally self-imposed and self-regulated and are accepted in good faith by the members of the profession. There should also be some compliance with the code. A true profession should have the right of sanction for those who were incompetent and unqualified as well as those who failed to adhere to the ethical and moral standards of the group. Within the Fitness Industry a viable code of ethics was needed to raise the standards of fitness instruction if the public was to seriously consider it as a profession. Fitness instructors should possess an expert technical

competence along with an attitude of dedication, perseverance and integrity of purpose that places the interest and welfare of society first (Barrow and Brown, 1988:315).

Physical fitness training was involved with both knowledge and a technique. The body of knowledge had to be acquired by the professional before implementation could occur. In order to achieve this an extended period of learning was necessary to make the professional more than average in competency. The professional must not only be knowledgeable in the field, they must also be a cultured person in the liberal arts science.

The fifth quality of a professional was to be concerned with research and scholarly achievements. The amount and type of professional literature indicated in a meaningful way the stature not only of the professional workers, but also of the profession. Here quality was far more important than quantity and this promotion and study of research were major professional responsibilities. An important characteristic of a profession was an organisation or society to promote its own interest and to professionalise its members. Such associations became the media of communication between the members and provided a forum for carrying out the ideals and the goals of the group (Shivers, 1967).

The market place demands placed on a person trained within the Fitness Industry in South Africa could be to serve in private clubs

and centres offering instruction in fitness activities such as weight training, step aerobics and aerobics, slide and aquacize. They may also be asked to supervise additional personnel, prepare and administer budgets, be familiar with promotional techniques and recruit members. Businesses and corporations were beginning to relate personal fitness and health to employee satisfaction and job production. Personnel were being hired to direct fitness, health and activity programmes. These programmes should be designed to help employees and their families deal with, take responsibility for, and manager their own health (Meryk, 1982: 64, 65, 67). Physical activity and modification of behaviour would have to be encouraged. These health promotion programmes, with emphasis on disease prevention and the promotion of positive health, could contribute to the total health of communities. As most people spend the larger part of their lives in employment, the workplace may be considered a suitable place to introduce health promotion programmes. The financial benefits of health promotion and the resulting improvement in health behaviour cannot be overemphasised. According to South African statistics for 1986, the total death rate per 100 000 of the population due to hypertensive disease was 59, but the estimated number of people suffering from hypertension runs into thousands more(Kotze, 1992). In America it is estimated that 15 percent of roughly 37 million people are thought to be hypertensive (Girdano, 1986:168). The work place has been identified as being a suitable site for the treatment of hypertension (Kotze, 1992:171). Consequently, the instructor's training course should include sport

management with particular emphasis on fitness evaluation and prescription, exercise physiology and organisational skills.

2.8.2 PROFIT

The Fitness Industry's leading employers come from private clubs and national chains, public leisure centres and Health Promotion units.

The aerobic fitness industry's employers are private clubs and national chains. Kaplan (1996:2) reported that the responsibility of the fitness centres went far beyond the membership sales people, beyond the health club owners and even beyond the executives who made marketing decisions for the sale of products and services that could not possibly deliver the results they promised. Kaplan (1996) suggested that it went deeper than the shallow hearts of a few greedy individuals who seemed to have tapped into a vein, America's unresolved challenge of getting fit. The responsibility for fitness fraud, the blame for Americans being besieged by misinformation extended into the workings of the authorities that exert control, the government.

To a lesser degree people in the South African Fitness Industry have called for Government involvement. Peters (1995) reported that Yuill had called for a clean up in the Fitness Industry. She reported that most gymnasiums had become money hungry and had

forgotten about genuine health concerns. She advocated that the Government should limit the payment of gymnasium membership to one year. The first meeting of the Fitness Industry Council was held on 10 February 1996 in Johannesburg. This council had the support of the National Sports Council. The Council was formed by people involved in the industry, people who were concerned about the state of the industry, which had been described by the media as a mine field of contradiction and confusion. Mills (in Time Out Reporter, 1995) reported that the initiative of establishing the Fitness Industry Council had a broad vision of taking the multifaceted nature of the industry into consideration and to establish a support system and uphold standards of service and care commensurate with the best in the world. (Time Out Reporter, 1994). Kaplan (1996) reported that fitness professionals should be judged by their ability to deliver what they promised to. He urged all fitness sellers, marketers and providers to maintain the highest level of professionalism and integrity. Kaplan also suggested that the fitness industry needed to take a major leap forward. He stated that America's best defence was education, and if the government worked to miseducate, then it was up to the leaders in the industry to take charge. Yuill (1996) echoed this sentiment when she said fitness should be a serious business as there could not be a more important investment, yet there were so many people with paid up memberships that they never used. Yuill (1996) reported that the selling practice had spread like a cancer throughout the industry. This had been extremely detrimental as it had undermined any attempts to build an

image of professionalism and to instill confidence in the general public that they would receive a good service. She questioned the ability of gymnasiums to provide a professional service with adequate space and educated staff, specialised programmes and manageable classes on R18.00 per month. Yuill (1996) concluded that this type of selling was designed to saturate the market and that any gymnasium that adopted this kind of selling could only be seeking financial gain.

In America a Code of Practice for the Fitness Industry has been developed by the Consumer Affairs Bureau in conjunction with the Bureau of Sport, Recreation and Racing, together with representatives of the Fitness Industry and in consultation with consumers (Consumer Affairs Bureau, 1992).

This is a mandatory Code, approved by the Consumer Affairs Minister, Terry Connolly, under section 34 of Fair Trading Act 1992. The Code specified minimum standards that applied to suppliers providing fitness services to consumers.

The content of the Code will be reviewed periodically by the Code Administration Committee:

Part I : Preliminary

- * Objectives
- * Interpretation
- * Application of Code

- * Exemption from code

Part II: Supplier's Obligations

- * Supplier's Obligations
- * Price of services to be made available to consumer before membership agreement entered
- * Membership agreements
- * Consumer to complete pre-exercise questionnaire
- * Visits to fitness centre by casuals
- * Cooling off period
- * Confidentiality of personal information

Part III Standard of Fitness Centre

- * Standard of Fitness Centre

Part IV Qualifications and Employment of Staff

- * Qualifications of Staff

Part V Consumer Obligations

- * Consumer Obligations

Part VI Administration

- * Code Administration Committee
- * Complaints Resolution Committee
- * Complaint resolution procedure
- * Sanctions
- * Compliance
- * Administrative report
- * Review and evaluation of Code
- * Transitional arrangements

Figure 2.12. Fitness Industry Code of Practice.

Consumer Affairs Bureau (1992).

The Code was supported by Yuil (1996) when she wrote that the perception and credibility of the health club industry could only be improved when legislation was passed to protect the consumer. This type of positive legislation was critical to the long term growth of the whole health club industry.

2.8.3 TRAINING

As the South African Fitness Industry continues to expand with an ever increasing number of clubs being opened, the demand for properly qualified staff with relevant skills has never been higher. The company, NVQ Training and Assessment Ltd (1997) reported that this meant that there were openings for those prepared to invest in their own future by ensuring that they had the skills demanded by employers. The first reason that the company gave for people investing in training was that there were more than 2 000 clubs in the United Kingdom who were competing for members and therefore needed highly trained and motivated staff in the health and fitness centres. A second reason was that on average, the membership retention rates hovered around 75%. This finding was based on research done by the Fitness Industry Association (FIA). The implication of this was that most clubs would have to replace one quarter of their members every year just to stand still. This could

lead to a spiral of escalating marketing and overhead costs as each club vied to offer the best facilities. The company felt that it was easy for club owners to become obsessed with membership sales and to lose sight of the real objective, to provide a good service for their clients. This problem could be remedied by employing a properly trained and motivated staff who could ensure a good service. When developing their courses, NVQ Training and Assessment Limited drew from their experience in working with some of the industry's leading employers from all sectors, and for the first time there was a nationally recognised standard for exercise professionals, the Sport and Recreation S/NVQ Level 2, Coaching and Activity Delivery, Adults in the context of Exercise and Fitness (NVQ Training and Assessment Ltd., 1997).

In South Africa there are many training organisations who provide training for those wishing to enter the Fitness Industry. The larger, well known organisations are Exercise Teachers Association, Fitco, Reebok Instructors Alliance, TrimGym, Keep Fit International, Bio Trim, Energym, Health and Beauty Exercise International and Fitgym. Some smaller training organisations that have been established by individuals as a business are Anne Cousens Aerobic Course, Physical Art, Suzanne Thomas's Aerobic Instructors Course, The Advanced Aerobics Course Academy and Topspot Teacher's Training Academy. No basic requirements were needed in order to establish a training organisation. The Institute for Aerobic Research (1987) reported that there were numerous

instructor/dance exercise leader certifying organisations in the United States of America. A total number could not be quoted as new organisations were formed monthly.

The Institute for Aerobic Research (IAR), (1987) indicated that the American public was becoming more informed concerning what to look for in a fitness instructor. The public had realized that adequate knowledge of exercise physiology, anatomy, kinesiology and teaching skills were difficult to learn simply in workshop settings. The Institute for Aerobic Research (IAR) and the Aerobics and Fitness Association (AFAA), (1987) surveyed over 1 000 fitness instructors to find out more about the people who worked in the dance exercise field. One result was that instructors were becoming more committed to continuing education. Eighty two percent of the instructors had some type of training while only 43 percent of the work sites required instructor certification for teaching classes.

2.8.4 THE PROFESSIONAL LIFE-WORLD OF THE AEROBIC INSTRUCTOR

The life world of the aerobic instructor related to the plethora of fitness centres in which the aerobic instructors conducted their mode of life. The professional life world was that constellation of the meaningful phenomena, including persons, objects, relationships and understandings which related to and affected the discharge of the aerobic instructor's duties as an educator. The professional life

world of the aerobic instructor was embedded in, and interwoven with, the greater reality of the total life word (Coutts, 1981:6).

Several sound arguments could be adduced in support of an insistence on the possession of good qualifications by the aerobic instructor. Amongst these are the obligations owed to the aerobic clientele, fitness centre owner and to society as well as movement educator to the aerobic client.

Bucher (1975:503-504) was correct when he maintained that athletic ability alone was not a sufficient qualification for the teacher of physical education. This could apply very aptly to the aerobic instructor. He laid great stress on intelligence, scholarship, technical knowledge and erudition.

He felt that teachers of physical education should be graduates of approved colleges or universities. This again could apply to aerobic instructors. He was supported by the Institute for Aerobic Research (1987) when they reported that seasoned fitness consumers asked whether a facility hired fitness professionals with at least a Bachelor of Science degree in Physical Education/Exercise Science.

The aerobic instructor's primary task of educating the aerobic clientele entrusted to his/her care demanded a wide range of abilities. The popular stereotype of the physical educator in Great Britain as being a muscular, dominant, stable, not overly bright

individual (Whiting et. al., 1973:123) was not reassuring for any form of movement education. Owing to the complexity and the variety of responsibilities of the aerobic instructor, like any good teacher, the aerobic instructor needs technical skills, personality, integrity and good health (Vannier et. al., 1973:81). The aerobic instructor shares the need of all teachers to have the necessary academic and professional training for teaching their particular subjects, a need emphasised by van Vuuren et. al. (1976:360).

2.9 SUMMARY

The spectrum of objectives pertaining to health and wellbeing which have been identified in this chapter as being desirable for modern society are indicative of the positive influence which physical activity may exert. It has been strongly suggested that physical health should be viewed as a personal responsibility and critical to a healthy lifestyle, but not more important for total well being than the other health components, namely, mental, social, emotional and spiritual.

It was concluded that fitness was not synonymous with health but that fitness played an essential role in all aspects of health. Both concepts were inextricably related, in that good health provided a solid foundation on which fitness rested and at the same time fitness was one of the most important factors in health.

It was also indicated that health and wellness were choices which offered

a positive way of life, the integration of body, mind and spirit and the opportunity to adapt an approach to an advanced state of physical, psychological, spiritual health. This was a dynamic state that was continually changing.

There was a consensus that physical fitness was an aspect of total fitness as total fitness included emotional, mental, spiritual, moral and social fitness as well as physical fitness.

It was generally accepted that physical fitness was based on a foundation of five major factors, namely: cardiovascular endurance, strength, flexibility, balance and correct body mass.

It was suggested that two kinds of physical fitness could be identified, namely, health related and performance related physical fitness. Both types of fitness required exercise, nutrition, sound health habits, rest and relaxation. Performance related physical fitness also required activity specific fitness, however, and this was of importance to sport, civil service, military, education, industry and business. Health related physical fitness was however important to everyone, as regular physical exercise reduced the risk of disease and had a positive effect on health in general and on a number of acknowledged risk factors, including body mass, heart disease, hypertension and high cholesterol levels, impaired physical capacity, smoking, bad sleeping habits and stress.

Physical fitness has always been the concern of humankind. Physical

prowess from prehistoric times down through the ages has been equated with survival and power. Humankind was biologically equipped to live in an environment that demanded physical prowess, but subsequently found itself in a modern environment that was much less demanding physically but characterised by many disintegrating forces. Humans now reveal certain weaknesses that in some way reflect these debilitating forces. Such weaknesses were either of a biological nature or had the ability to affect the biological potential. It was concluded that great emphasis was often placed on intellectual prestige and labour saving devices in a modern society, to the detriment of physical fitness which is a necessary component of biological health.

It was recognised that modern life was characterised by numerous factors which produced tension and that resulted in the most common psychiatric disorders, anxiety and depression. Stress was placed in two categories, namely, positive stress and distress. Both forms of stress caused a biochemical alarm reaction that prepared the body for physical action but often our social order did not provide an opportunity, the motivation or social approval for the vigorous actions needed to neutralise these chemicals. It was concluded that this alarm reaction should be balanced out in modern living with the design of exercise programmes that would use up these secretions. Participation in physical activities not only increased the body's resistance to stress but also provided a positive release valve for frustrations and tensions of daily living. All statistics indicated an increase in stress leading to mental and emotional disorders. Such disorders were attributed partly to the lifestyle followed by society but which

could perhaps be alleviated by a greater emphasis on physical activity along with a better use of leisure time.

Comparisons between active and sedentary lifestyles began in the early nineteen-fifties and several ailments were quickly associated with the lack of physical activity. These ailments were termed hypokinetic diseases. The conditions included heart disease, high blood pressure, overweight, degeneration of blood vessels, certain abnormalities in physical posture, damage to muscles, ligaments and bones and diabetes. It was suggested that hypokinetic diseases began in youth and were related to lifestyle. This together with increasing health care costs all over the world and the emphasis on the curing, not the prevention of disease, resulted in a dismal general health situation.

The link between inactivity and fatal heart attacks was reported in the nineteen-seventies and it would appear that only lifelong physical activity of a fairly high intensity could protect the individual from coronary heart disease.

A substantial number of risk factors was associated with the individual's chances of developing ischaemic heart disease. The three prime candidates were cigarette smoking, high blood pressure and a high serum cholesterol. Other risk factors which were associated with heart disease were male gender, a family history of heart disease, glucose intolerance and the use of contraceptive drugs.

Heart disease and tobacco smoking were closely linked in a number of research studies. Tobacco smoking was shown to result in a decreased ability of the cardio-respiratory system to respond to the demand of an aerobic fitness programme. It was reported that a likely lifestyle benefit from an exercise programme was a doubling of successful cigarette withdrawal with a small improvement in successful cigarette withdrawal.

The other risk factor that could cause heart disease was hypertension. This was referred to as the silent killer because there were usually few or even no warning signs that hypertension existed. Hypertension was a common ailment among the middle-aged, particularly if the person was physically inactive, overweight, subjected to a great deal of stress and was a heavy smoker. It was concluded that people with hypertension could improve their condition through exercise.

A great deal was written about the effects of regular exercise on cholesterol levels in the blood, and it was concluded that the dangerous low density lipoprotein (LD1) could be reduced through exercise while the beneficial high density lipoprotein (HDL) could be increased through exercise.

It was also pointed out that obesity was an important risk factor for the development of non-insulin dependent diabetes mellitus, hyperlipidaemia, coronary heart disease, stroke, gallbladder disease and certain types of cancer.

It was found that exercise exerted a number of effects on the substrate

homeostasis and the hormonal milieu, and in a diabetic patient the response to exercise depended not only on the duration and intensity of activity, but also on the metabolic control of insulin availability at the time that exercise was performed. It was concluded that diabetics should be encouraged to exercise provided that a gradual, progressive warmup was included and that the exercise should preferably be prolonged, of low intensity and with an adequate blood sugar level control. The unique benefits of exercise for diabetics should include a lower blood glucose and insulin requirement. Obesity was a problem for many diabetics but regular exercise was one solution. However, a combined programme of diet and regular exercise was far more effective in achieving weight reduction goals than diet or exercise alone.

It was also concluded that there were more benefits to be derived from exercise than costs in that many researchers reported that a high level of physical fitness could improve the quality of life and that regular physical activity had preventative value in a wide range of chronic medical conditions, including ischaemic heart disease, hypertension, with its associated renal and cerebrovascular complications, vascular disease such as arteriosclerosis, obesity, with associated problems of diabetes, cholecystitis, asthma, back and knee injuries and certain mental disorders. The most important benefits of exercise may have concerned mental health, in that, physically active people tended to be happier, less fatigued, less depressed and less nervous. They appeared to have greater emotional stability, be more self sufficient, and have greater self confidence than their non active counterparts, greater vigour, an enhanced self

image and be less stressed in modern living.

The fitness industry is one of the avenues through which these negative influences may be countered but the extent to which the industry is meeting the needs of those it serves is not clear. The degree of professionalism at present prevailing in the industry was questioned. The profit based practices within the industry that had tarnished the image of professionalism were discussed, and the American Code of Practice for the Fitness Industry that specified minimum standards that applied to suppliers providing fitness services to consumers, was presented. Aerobic training in South Africa was compared with that in the United States of America and the professional life world of the instructor was addressed.

CHAPTER THREE

METHOD AND PROCEDURES

3.1 LITERATURE AND RESEARCH SURVEY

3.2 DATA COLLECTION

3.2.1 QUESTIONNAIRE FOR THE FITNESS INSTRUCTORS

3.2.2 QUESTIONNAIRES FOR THE AEROBIC CLIENTELE

3.3 THE PILOT STUDY

3.4 THE SAMPLING PROCEDURE

3.4.1 THE CHOICE OF THE STUDY AREA

3.4.2 THE SELECTION OF THE SAMPLE

3.5 FIELDWORK

3.6 DATA PROCESSING

CHAPTER THREE

METHOD AND PROCEDURES

3.1 LITERATURE AND RESEARCH SURVEY

A survey of relevant literature and research was undertaken in order to ascertain the extent of knowledge relating to important aspects of the selected topic, to provide a theoretical framework for the study, also to aid the researcher in defining the terms used and to clarify the most appropriate research procedures. This survey embraced reflection on the nature of health, total fitness, physical fitness, a perspective of physical activity and the place of physical activity in modern life. Finally, as the fitness industry is one of the avenues through which negative health influences may be countered, the question as to whether the industry is meeting the needs of those it serves, was posed.

3.2 DATA COLLECTION

The present study was based on a survey methodology using two questionnaires for the collection of data. The questionnaires were for the following groups of people, namely, the fitness instructors and the aerobic clientele. The use of questionnaires appeared to be the most appropriate method of data collection, as it is relatively economical, has standardised questions, can ensure anonymity and questions can be written for specific purposes. Questionnaires can use statements or questions, but in all

cases the subject responds to something written (McMillian and Schumacher, 1993:238).

Its use was supported by Borg (1967:204) who considered it to be a very valuable technique in understanding current situations. This was also advocated by Fox (1969:525-529), who advised the use of clear language, with single purpose questions and absolute clarity of intent. Clarke and Clarke (1970:102) stressed the value of the questionnaire in reaching a wide audience, but felt that the instrument should be used sparingly and with great integrity. They warned against poor questions, improper procedures and a sample that was either too small or too large.

Nizbet and Entwistle (1970:30) considered the sample size to be determined to some extent by the type of analysis used. They mentioned that there was a weakening of the questionnaire method caused by the proportion of the sample who did not answer. They considered the percentage response to be the most important single consideration in evaluating a questionnaire study. The desirability of a large sample size was suggested by Isaac and Michael (1972:147) who wrote:

It remains true that the larger the sample, the smaller the sampling error and, other things being equal, it is preferable to increase the sample size wherever practical.

Johnson (1977:169) remarked that there were no rules to be followed in

determining the sample size, the cost being a basic consideration. He warned that as the sample size became smaller, there would be less likelihood of the sample reflecting the population, with a consequently greater possibility of error. Moser and Kalton (1972:268) warned against a poor response rate as a dangerous failing. They believed a response of less than 20 to 30 percent was of little value. Williams and Brynner (1973:47) felt that a response of 80% was necessary to eliminate serious bias. Although the size of a sample in itself is of great importance, it is the representativeness of the sample that is of primary concern. Random sampling should be the first consideration. Ary et al. (1972:167) agreed that the representativeness was the fundamental concern of sampling, since a bias may be evident in even the largest sample. It should be noted that none of the displays of data used in this research for the instructors' questionnaire revealed a return of lower than 85% or a return of lower than 81% on the clientele questionnaire.

The questionnaires for both the fitness instructors and the aerobic clientele were delivered and collected by hand as it was essential to ensure that the correct motivation for completing the questionnaires was conveyed, as the fitness environment, during the years of research, was a very fluid and casual environment. Confidentiality was maintained when the addresses to which the questionnaires were delivered were noted, so that follow-up letters could be sent to thank respondents for participating in the research project and to remind those who had not yet done so, to complete and return the questionnaire. A letter, which explained what the research was about and which indicated some of the benefits which could accrue to the

fitness industry as a result of the research, was included with each questionnaire. Response rates are discussed in this chapter under Fieldwork

3.2.1 QUESTIONNAIRE FOR THE AEROBIC INSTRUCTORS

As indicated in Chapter One in the definition of the research problem, empirical data were required and this was gathered using two questionnaires.

The questionnaire that was sent to the fitness instructors contained eighteen questions. The questionnaire was used to gain information such as teachers' qualifications, continuing education for the fitness industry, evaluation of training, teaching experience in aerobic instruction, the number of aerobic classes taught each week, remuneration for aerobic instruction, the movement content of the aerobic session, weight training involvement, the teaching styles used in aerobic instruction, the availability of facilities and equipment, the lesson structure used in aerobic instruction, the evaluation procedures used for the aerobic clientele, the reasons for becoming involved in the fitness industry, the structure of the fitness industry, the services provided by the professional bodies and the aerobic instructors' opinions on national certification.

The purpose of the survey was to ascertain the magnitude of the problems experienced in the professional life-world of the fitness

instructor. As this appears to be the first survey in this field in South Africa, emphasis has been placed on a wide range of fundamental problems that tend to hamper the effective teaching of aerobics.

The questionnaire can be found in Appendix A.

3.2.2 QUESTIONNAIRE FOR THE AEROBIC CLIENTELE

The questionnaire sent to the aerobic clientele contained seven questions. The questionnaire was used to gain general information such as the gender, age, marital status and occupations of the aerobic clientele. More specific information was obtained by gaining the aerobic clientele's opinion about certifications in aerobic instruction, the reasons for preferring qualified aerobic instructors, the number of classes per week that were attended, other forms of physical activity that the aerobic clientele were involved in, the benefits of aerobics participation, the time and length of the class preferred and the availability of the before mentioned preference, the movement content preferred and the availability of the before mentioned preference, the qualities that were needed by aerobic instructors to teach aerobics effectively, the qualities that were least apparent in the aerobic instructors, the clientele's opinion about free-lance aerobic instructors, the morphological, physical fitness, health and performance related aspects that were evaluated and what aspects the aerobic clientele would like to be evaluated, how the aerobic clientele rated their gymnasium, club, studio on their

evaluation procedures and the population groups that were being provided with an effective service.

The purpose of this survey was to ascertain the extent to which the fitness industry is meeting the needs of those it serves as well as to ascertain how this industry could be improved in order to better meet the particular spectrum of objectives which have been identified as being desirable for modern society. The questionnaire can be found in Appendix B.

3.3 THE PILOT STUDY

A pilot study was undertaken to pretest the questionnaires for any shortcomings. The questionnaires were distributed to two aerobic instructors and ten clientele in two gymnasiums in the Durban Metropolitan area. Those involved in the aerobic instructors' pilot study considered question eleven to be confusing as it was requested that free-lance instructors analyse both the best situation and worst situation in which they taught. It was thought to be more appropriate simply to request the availability of apparatus for teaching aerobics. Other than this problem, the general consensus of those involved in the pilot study was that the questions were easily understood and the questionnaires were considered interesting. As no other problems were encountered, the modified aerobic questionnaire and the clientele questionnaire were accepted as a suitable method of data collection.

3.4 THE SAMPLING PROCEDURE

The objective of the sampling procedure was to provide a representative sample of aerobic instructors who were employed by owners of fitness centres, as well as a representative sample of people participating in aerobics at such fitness centres.

3.4.1 THE CHOICE OF THE STUDY AREA

The Durban Metropolitan Area was selected for this study and was defined in terms of infra structural development. The study area therefore comprised the geographical area served by the basic services such as electricity, water and roads. This included residential as well as industrial areas of the city. The furthest boundaries of the study area were Verulam (North), Hillcrest (West) and Kingsburgh (South). This area was selected as it was deemed representative of the fitness industry in South Africa.

3.4.2 THE SELECTION OF THE SAMPLE

Twenty fitness centres were selected. Care was taken to incorporate the large chains such as Corporate Body, Players, Sharper Image and Health and Racquet as well as the smaller independent fitness centres. The selected fitness centres were approached both by letter and telephonically to establish their willingness to be part of the study. One independent gymnasium elected not to be part of

the study so another independent gymnasium was selected.

It should be noted that since these data were gathered in 1993, a number of the fitness centres which were included in the sample are no longer functional.

3.5 FIELDWORK

The field work was undertaken in October, November 1992 and January 1993. The questionnaires for both the aerobic instructors and clientele were distributed by hand by the researcher. This opportunity was used to explain why the respondents were being requested to complete the questionnaire and what possible benefits could accrue for the aerobic instructor and clientele as well as for the fitness industry as a whole, on completion of the study. Any questions pertaining to the completion of the questionnaire were answered.

A follow-up letter was sent to each fitness centre to thank those who had responded and to remind the others to return the questionnaires. Choi et al. (1992:79-83) reported that a final reminder would significantly improve the response rate. Thereafter the owners/managers of the fitness centres were contacted telephonically.

A total of 34 aerobic instructors and 162 aerobic clienteles' questionnaires were returned. As the distribution of 40 aerobic instructors and 200 aerobic clientele comprised the sample, the returns represented an 85% and 81%

response, respectively. The returns were comparable with the standards for sample size advocated by Krejcie and Morgan (1970:607). As the present study took almost the total population for the survey, bias amongst the non-respondents was deemed to be insignificant.

3.6 DATA PROCESSING

The questionnaires were examined for correctness and accuracy. Each questionnaire was assigned a number and coded according to a prepared coding framework. The treatment of data and the subsequent systematic display of results can be summarised by the statement of Moser and Kalton:

A glance through a selection of survey reports will show that analysis often does not go much beyond descriptions, percentages, averages and measures of dispersion, supplemented by suitable diagrams.

(Moser and Kalton, 1972:44)

In this study quantitative methods of analysis were used, including numerical tables, percentages, line graphs, bar graphs and pie charts.

CHAPTER FOUR

ANALYSIS AND DESCRIPTION OF DATA

4.1 INTRODUCTION

4.2 THE PROFESSIONAL LIFE-WORLD OF THE AEROBIC INSTRUCTOR

- 4.2.1 QUALIFICATIONS/CERTIFICATIONS
- 4.2.2 TRAINING INSTITUTION /ORGANISATION
- 4.2.3 YEARS IN WHICH STUDY OCCURRED
- 4.2.4 DURATION OF TRAINING
- 4.2.5 CONTINUING EDUCATION CREDITS
- 4.2.6 EVALUATION OF TRAINING
- 4.2.7 TEACHING EXPERIENCE

4.3 TEACHING AEROBICS

- 4.3.1 NUMBER OF CLASSES TAUGHT PER WEEK
- 4.3.2 REMUNERATION
- 4.3.3 MOVEMENT CONTENT TAUGHT
- 4.3.4 WEIGHT TRAINING INVOLVEMENT
- 4.3.5 RANGE OF TEACHING APPROACHES
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CHAPTER FOUR

ANALYSIS OF DATA AND DISCUSSION

4.1 INTRODUCTION

Chapter four comprises an analysis of the results obtained from the study in the Durban area. The results are shown by means of pie charts, line and bar graphs and a variety of tables which relate directly to the questions contained in the fitness instructor's questionnaire (Appendix A) and the aerobic clientele's questionnaire (Appendix B). The reader is referred to these questions at appropriate places in chapter four.

4.2 THE PROFESSIONAL LIFE-WORLD OF THE AEROBIC INSTRUCTOR

4.2.1 QUALIFICATIONS/CERTIFICATIONS OF THE AEROBIC INSTRUCTOR

The reader is referred to question one in the questionnaire (Appendix A), which is relevant to figure 4.1 and tables 4.1, 4.2, 4.3, 4.4 and 4.5.

The total number of respondents was 34 aerobic instructors. This represented an 85% return rate. The total number of qualifications/certifications represented in the study was 110. It will be seen that the number of qualifications/certifications per aerobic instructor ranged from nil to nine (Figure 4.1). There was a mean of

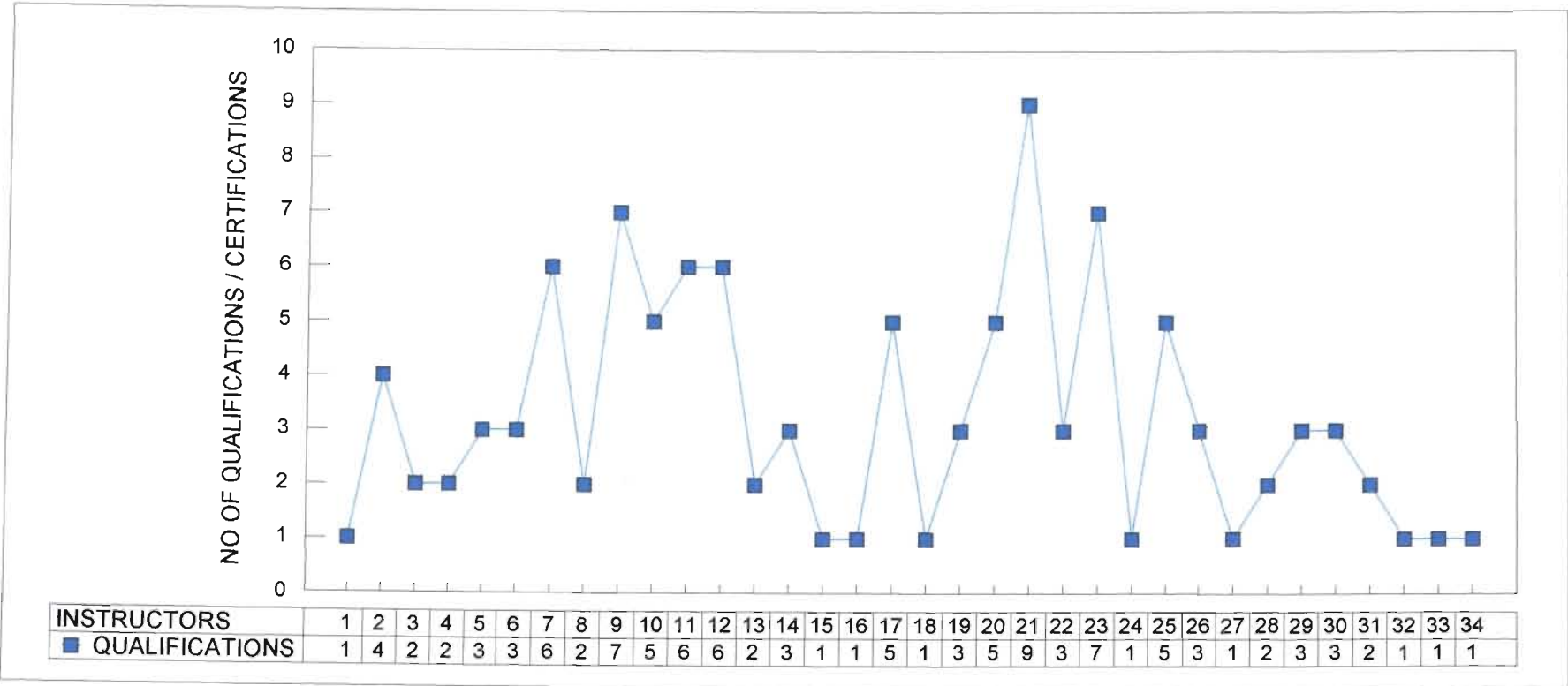


FIGURE 4.1 QUALIFICATIONS/CERTIFICATIONS IN AEROBIC INSTRUCTION

three qualifications/certifications per instructor.

Two (5,88%) respondents did not have any qualifications/certifications, 7 (20,59%) respondents had 1 qualification/ certification, 6 (17,65%) respondents had obtained 2 qualifications/certifications, 8 (23,53%) had 3 qualifications/ certifications, 1 (2,94%) had 4 qualifications/certifications, 4 (11,77%) had 5 qualifications/certifications, 3 (8,82%) had 6 qualifications/certifications, 2 (5,88%) had 7 qualifications/ certifications and 1 instructor (2,94%) had obtained 9 qualifications/certifications (Table 4.1).

4.2.2 Training Institutions/Organisations

Twenty-three training institutions/organisations were used by the aerobic instructors to obtain qualifications/certifications. Those used most often were Keep Fit International (41,18%), Fitco (29,41%), South African Association for Sport Science, Physical Education and Recreation (29,41%), TrimGym (20,59%), Topspot Fitness Instructors' Academy (17,65%), American Council on Exercise (14,71), South African Water Activity Association (14,71%), Exercise Teachers' Association (5,88%) and Anne Couzens' Instructors' Academy (5,88%), as reflected in Table 4.2. Fourteen training institutions/organisations were used by 1 instructor (2,94%), (Table 4.3).

TABLE 4.1**QUALIFICATIONS/CERTIFICATIONS IN AEROBIC INSTRUCTION.****(N = 34)**

Number of Qualifications/ Certifications	Number of Instructors	%
0	2	5.88
1	7	20.59
2	6	17.65
3	8	23.53
4	1	2.94
5	4	11.77
6	3	8.82
7	2	5.88
8	0	0.0
9	1	2.94
Combined Totals:	34	100.00

TABLE 4.2

TRAINING INSTITUTIONS/ORGANISATIONS MOST USED BY THE AEROBIC INSTRUCTORS.

(N = 34)

Training Institution/ Organisation		Number of Instructors	%
1.	Keep Fit International	14	41.18
2.	Fitco	10	29.41
3.	South African Association for Sport Science, Physical Education and Recreation	8	23.53
4.	TrimGym	7	20.59
5.	Topspot Fitness Instructors' Academy	6	17.65
6.	American Council on Exercise	5	14.71
7.	South African Water Activity Federation	5	14.71
8.	Exercise Teachers' Association	2	5.88
9.	Anne Couzens' Instructors' Academy	2	5.88

TABLE 4.3

TRAINING INSTITUTIONS/ORGANISATIONS LEAST USED BY THE AEROBIC INSTRUCTORS

(N = 34)

	Training Institution/ Organisation	Number of Instructors	%
1.	SAGOF	1	2.94
2.	RecGym	1	2.94
3.	Gale Richards : Bench Course	1	2.94
4.	South African Aerobics and Weight Training	1	2.94
5.	International Dance and Exercise Association	1	2.94
6.	University of Witwatersrand: Basic Aerobic Course	1	2.94
7.	Royal Society for Arts, London	1	2.94
8.	Beverly Hills Aerobic Instructors Course	1	2.94
9.	Natal Swim Coaches and Teachers Association	1	2.94
10.	Tish Topp: Aquacize Course	1	2.94
11.	Natal Training College	1	2.94
12.	Northern Institute of Massage, Blackpool	1	2.94
13.	Berke: Body Building Course	1	2.94
14.	Pretoria Technikon: Basic Aerobics	1	2.94

4.2.3 YEARS IN WHICH TRAINING OCCURRED

Two respondents (5,88%) did not have any qualifications/ certifications. The qualifications/certifications were obtained in 1971 and then ranged from 1983-1992. Three (2,73%) qualifications/ certifications were obtained in 1971, 5 (4,55%) in 1983, 6 (5,45%) in 1984, 5 (4,55%) in 1985, 11 (10%) in 1986, 12 (10,91%) in 1987, 9 (8,18%) in 1988, 11 (10%) in 1989, 13 (11,82%) in 1990, 16 (14,55%) in 1991, and 17 (15,45%) qualifications/certifications were obtained in 1992 (Table 4.4).

4.2.4 DURATION OF TRAINING

The duration of training for those instructors who had qualifications ranged from 8 hours to 3 years and 35 hours.

- * Instructor 25 who had 3 years of training had obtained a Diploma in Teacher Education, one of the majors was Physical Education. This instructor then subsequently obtained 4 certifications in aerobic instruction and the duration of training was 35 hours, a mean of 8.75 hours per certification.
- * Instructor 21 had trained for 2 years 6 months and had obtained nine certifications.
- * Instructor 10 had obtained 5 certifications in 2 years 24 hours.

TABLE 4.4**YEAR IN WHICH QUALIFICATIONS/CERTIFICATIONS WERE OBTAINED****(N = 110)**

Year	Number of Qualifications	%
1971	3	2.73
1983	5	4.55
1984	6	5.46
1985	5	4.55
1986	11	10.00
1987	12	10.91
1988	9	8.18
1989	11	10.00
1990	13	11.82
1991	16	14.55
1992	17	15.45

- * Instructor 12 had trained for 1 year and 11 hours and had 6 certifications. Instructor 18 had trained for 1 year and had 1 certification. Instructor 23 had trained for 10 months and had 7 certifications.
- * Instructor 11 had trained for 7 months and 12 hours and had 6 certifications.
- * Instructor 19 had trained for six months and 27 hours and had obtained 3 certifications.
- * Instructor 22 had trained for 6 months and had obtained 3 certifications.
- * Instructor 13 had 2 certifications and had trained for 3 months.
- * Instructor 27 had trained for 2 months and had 1 certification.
- * Instructors 3 and 19 had trained for 140 hours and had 2 and 3 certifications respectively.
- * Instructors 9 had trained for 124 hours and had 7 qualifications, an average of 17,71 hours per course.
- * Instructor 2 had trained for 108 hours and had 4 certifications.
- * Instructor 15 had trained for 150 hours and had 1 certification.
- * Instructor 30 had trained for 92 hours and had three certifications.
- * Instructor 28 had trained for 87 hours and had two certifications.
- * Instructor 6 had trained for 72 hours and had 3 certifications.
- * Instructor 17 had trained for 48 hours and had 5 certifications.
- * Instructor 31 had trained for 48 hours and had two certifications.

- * Instructor 14 had trained for 40 hours and had 3 certifications.
- * Instructor 7 had trained for 36 hours and had six certifications, an average of 13,33 hours per certificate.
- * Instructor 34 had trained for 35 hours and had one certification.
- * Instructor 5 had trained for 34 hours and had 3 certifications, an average of 11,33 hours per certification.
- * Instructors 24 and 26 had trained for 24 hours and had one and three certifications respectively.
- * Instructor 29 had trained for 18 hours and had three certifications, an average of 6 hours per certification.
- * Instructor 33 who had eight hours of training had one certification.
- * Instructors 16 and 32 had no certifications (Table 4.5).

TABLE 4.5**Duration of Training of all Aerobic Instructors****(N = 34)**

Instructor	Number of Qualifications/ Certifications	Duration of Training		
		Hours	Months	Years
1	1		4	
2	4	108		
3	2	140		
4	2		4	
5	3	34		
6	3	72		
7	6	36		
8	2			1
9	7	124		
10	5	24		2
11	6	12	7	
12	6	11		1
13	2		3	
14	3	40		
15	1	100		
16	0			
17	5	48		
18	1			1
19	3	27	6	
20	5	140		
21	9		6	2
22	3		6	
23	7		10	
24	1	24		
25	5	35		3
26	3	24		
27	1		2	
28	2	87		
29	3	18		
30	3	92		
31	2	48		
32	0			
33	1	8		
34	1	35		

4.2.5 CONTINUING EDUCATION CREDITS

The reader is referred to question 2 in the questionnaire (Appendix A, which is relevant to Figures 4.2, 4.3 and 4.4.

Eighteen (52,94%) instructors had obtained continuing education credits in the last 2 years and 16 (47,05%) had not obtained any (Figure 4.2). Nine (26,47%) instructors had obtained American Council credits in the last 2 years while 25 (73,52%) had not (Figure 4.3). All instructors (100%) thought it was a good practice for training organisations to insist on continuing education credits for the validation of certain certificates (Figure 4.4).

4.2.6 EVALUATION OF TRAINING

The reader is referred to question 3 in the questionnaire (Appendix A), which is relevant to Figure 4.5.

It was observed that no topic listed in the questionnaire was present in every training course. Three (82%) instructors had not covered the topic, anatomy, in their training courses; 4 (11,77%) had not covered exercise physiology; 9 (26,47%) instructors had not covered kinesiology; 15 (44,12%) instructors had not covered biochemistry; 10 (29,41%) had not covered exercise psychology; 4 (11,77%) had not covered principals of training; 5 (14,71%) had not covered monitoring exercise intensity; 8 (23,53%) instructors had

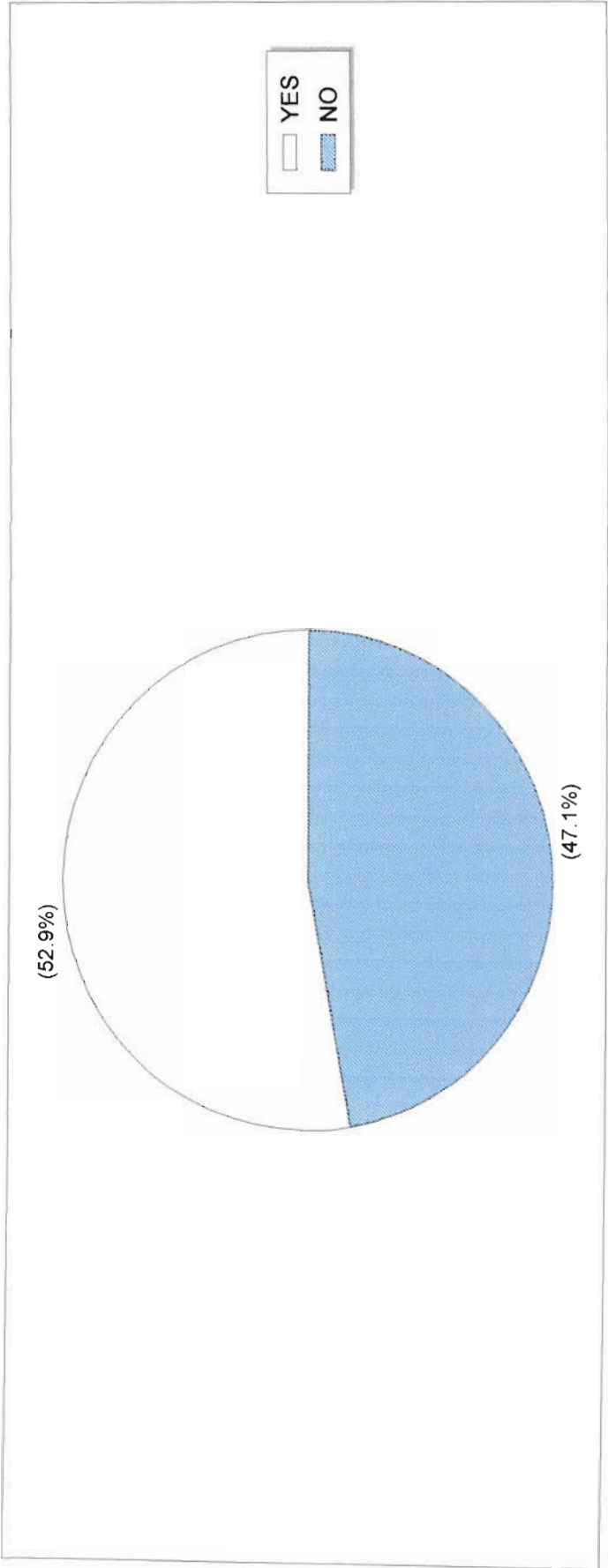


FIGURE 4.2 CONTINUING EDUCATION IN LAST TWO YEARS

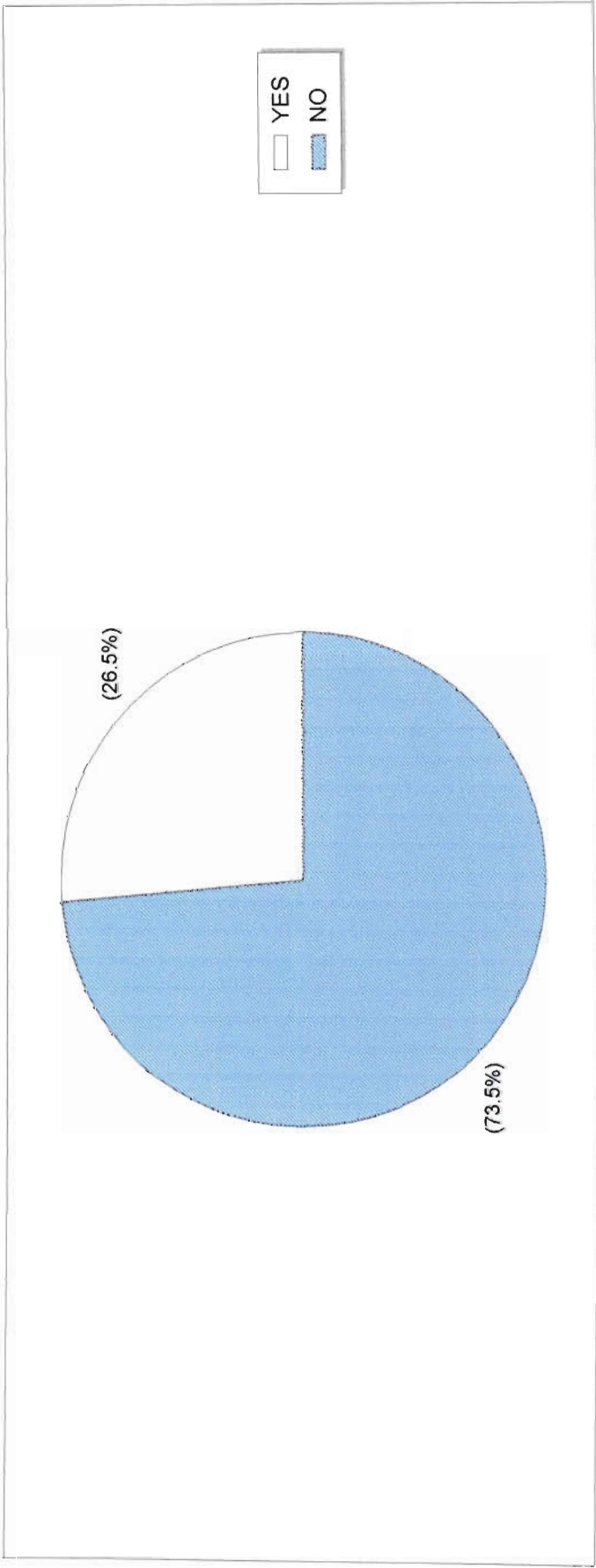


FIGURE 4.3 AMERICAN COUNCIL CREDITS IN LAST TWO YEARS

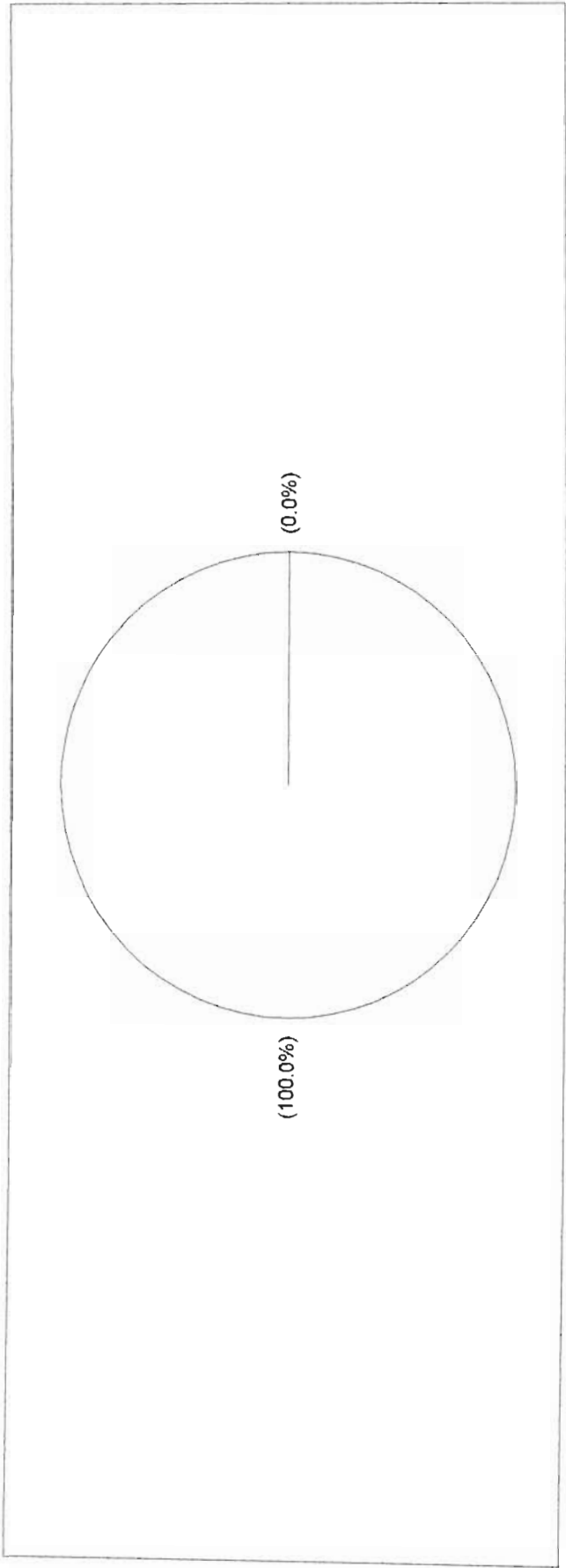


FIGURE 4.4 VALUE OF CONTINUING EDUCATION

not covered nutrition and weight control; 14 (41,18%) had not covered pre and post natal exercise; 12 (35,29%) had not covered screening, testing and programming; 3 (8,82%) instructors had not covered the role of the instructor; 5 (14,71%) had not covered leadership skills; 5 (14,71%) had not covered components of an aerobic class; 4 (11,77%) had not covered choreography; 7 (20,59%) had not covered testing and modifying for individual needs; 8 (23,53%) had not covered the topic, various teaching styles that can be used in the aerobic class; 9 (26,47%) had not covered strength and circuit training; 16 (47,06%) had not covered judging and evaluation; 17 (50%) had not covered aerobics for special population groups; 4 (11,77%) had not covered injury prevention; 6 (17,65%) had not covered emergency procedures; 12 (35,29%) had not covered stress control; 17 (50%) had not covered legal issues; 16 (47,06%) had not covered management and marketing and 30 (88,24%) had not covered public relations.

The overall average assessment out of a score of five for the topic anatomy was 3.75; 3.22 for exercise physiology; 2.47 for kinesiology; 1.56 for biochemistry; 2.41 for exercise psychology; 3.22 for principles of training; 3% for monitoring of exercise intensity; 2.72 for nutrition and weight control; 2.22 for pre and post natal exercise; 2.38 for screening, testing and programming; 3.81 for the topic, the role of the instructor; 3.41 for leadership skills; 3.44 for the components of an aerobic class; 3.44 for choreography; 2.75 for testing and modifying for individual needs; 2.94 for the content

of the topic teaching styles; 2.22 for strength and circuit training; 1.72 for judging and evaluation; 1.41 for the topic, aerobics for special population groups; 3.44 for injury prevention; 3 for emergency procedures; 2.16 for the content of the topic, stress control; 1.32 for legal issues; 1.38 for management and marketing and 0.41 for public relations (Figure 4.5).

The content of the topic public relations was considered unsatisfactory. The content of the topics biochemistry, judging and evaluation, aerobics for special population groups, legal issues and managing and marketing was considered satisfactory, with reservations. The content of the topics kinesiology, exercise psychology, nutrition and weight control, pre and post natal exercise, screening, testing and programming; testing and modifying for individual needs; teaching styles and strength and circuit training was considered satisfactory in all respects. The content of the topics, anatomy, exercise physiology, principals of training, monitoring exercise intensity, role of the instructor, leadership skills, components of an aerobic class, choreography, injury prevention and emergency procedures were considered to be good (Figure 4.5).

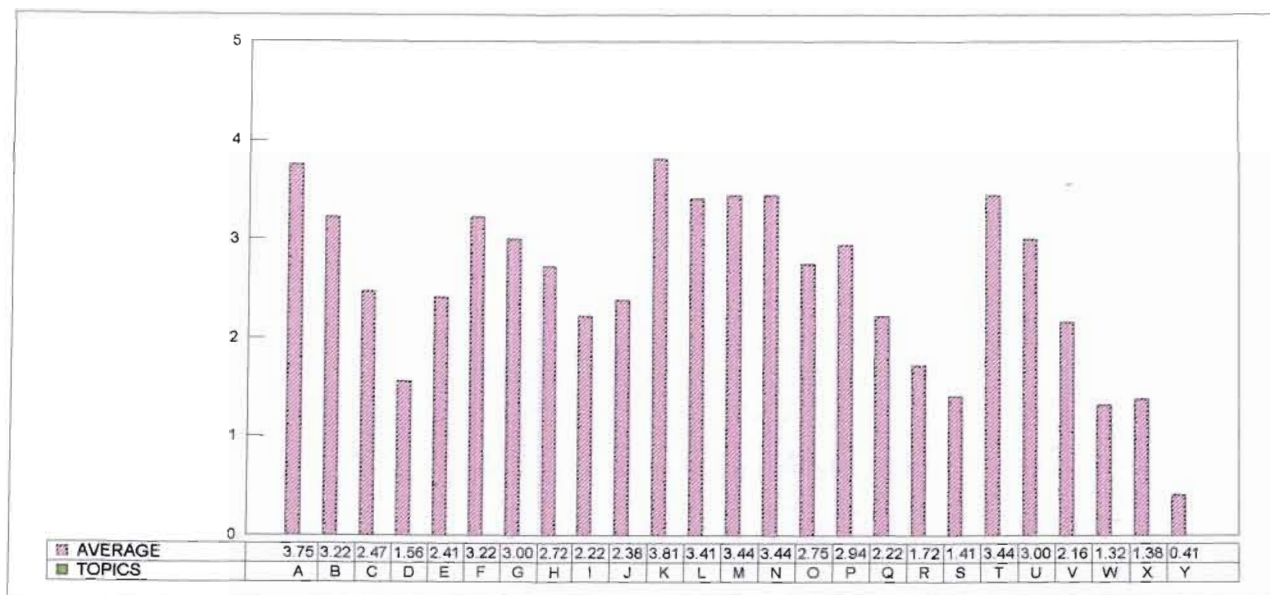


FIGURE 4.5 EVALUATION OF TRAINING

- TOPICS
- A : ANATOMY
 - B : EXERCISE PHYSIOLOGY
 - C : KINESIOLOGY
 - D : BIOCHEMISTRY
 - E : EXERCISE PSYCHOLOGY
 - F : PRINCIPLES OF TRAINING
 - G : MONITORING EXERCISE INTENSITY
 - H : NUTRITION AND WEIGHT CONTROL
 - I : PRE AND POST NATAL EXERCISE
 - J : SCREENING, TESTING, PROGRAMMING
 - K : ROLE OF THE INSTRUCTOR
 - L : LEADERSHIP SKILLS
 - M : COMPONENTS OF AEROBIC CLASS
 - N : CHOREOGRAPHY
 - O : TEST / MODIFY FOR INDIVIDUAL NEEDS
 - P : TEACHING STYLES
 - Q : STRENGTH / CIRCUIT TRAINING
 - R : JUDGING AND EVALUATION
 - S : SPECIAL POPULATIONS
 - T : INJURY PREVENTION
 - U : EMERGENCY PROCEDURES
 - V : STRESS CONTROL
 - W : LEGAL ISSUES
 - X : MANAGEMENT AND MARKETING
 - Y : PUBLIC RELATIONS

The overall evaluation of training was as follows:

- * 5 (16.13%) instructors thought that their training was unsatisfactory,
- * 10 (32,26%) thought their training was satisfactory with reservations,
- * 10 (32,26%) instructors thought that their training was satisfactory in all aspects and
- * 6 (19,36%) thought their training was good,
- * 1 instructor did not evaluate the training he/she had received and
- * 2 instructors had received no training.

4.2.7 TEACHING EXPERIENCE

The reader is referred to question 4 in the questionnaire (Appendix A), which is relevant to Figure 4.6 and 4.7.

It was noted that 17 instructors did not teach on a permanent basis at any one fitness centre. Teaching on a permanent basis ranged from 6 months to 12 years (Figure 4.6). The mean period of teaching aerobics in the instructors present fitness centre on a permanent basis was found to be 3,91 years (3 years and 9 months).

The length of experience in aerobic instruction ranged from 1 to 30 years (Figure 4.7). The mean total period of experience in aerobic

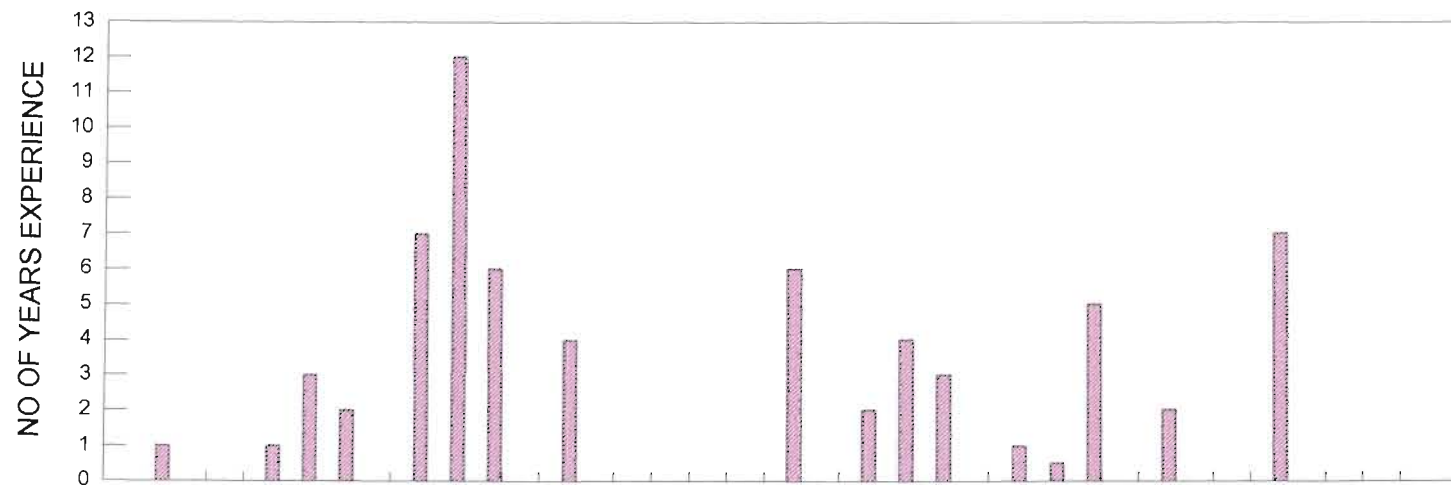


FIGURE 4.6 AEROBIC TEACHING EXPERIENCE AT PRESENT FITNESS CENTRE

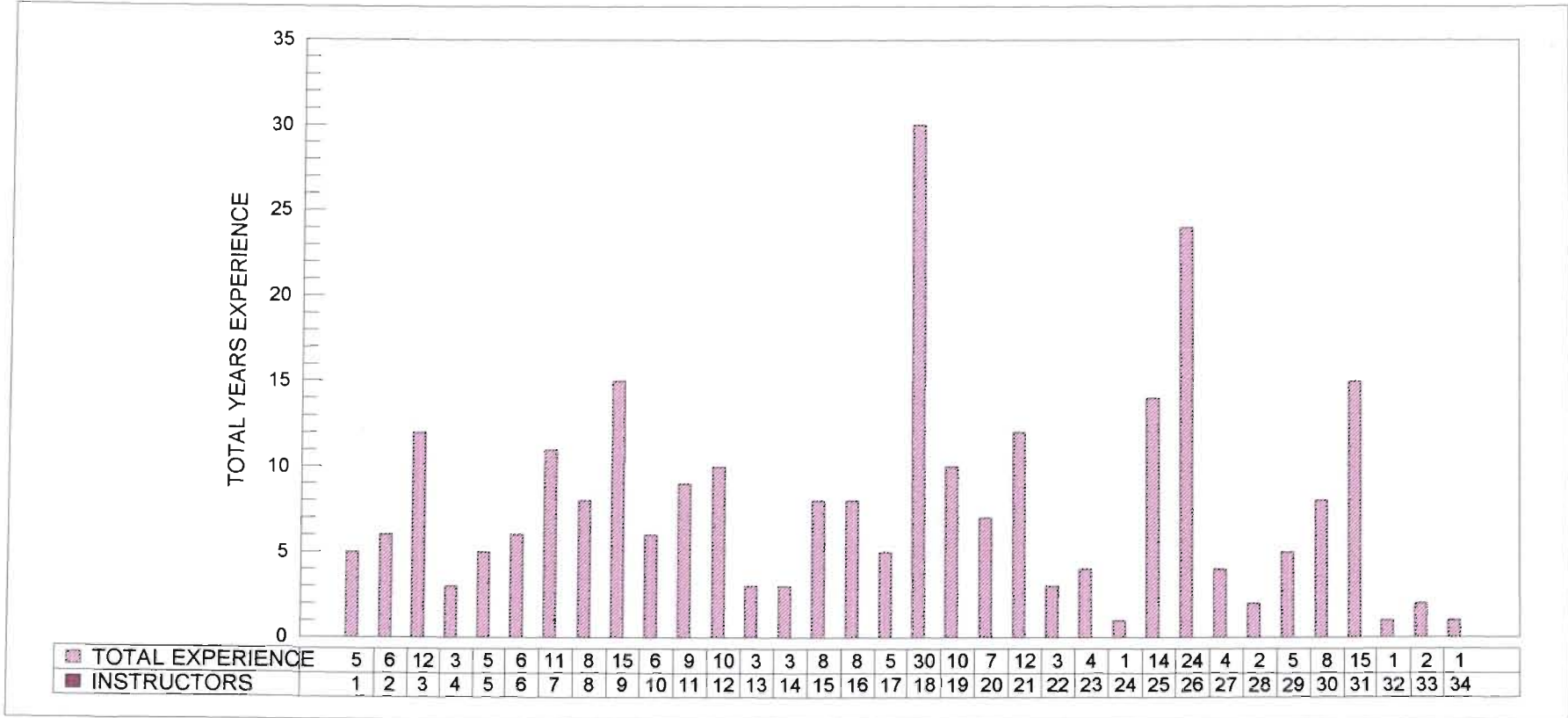


FIGURE 4.7 AEROBIC TEACHING EXPERIENCE THROUGHOUT CAREER

instruction was found to be 7.82 years (7 years and 8 months). It was calculated that 67,65% of instructors had a total period of teaching experience in aerobic instruction of 8 years and less.

4.3 TEACHING AEROBICS

4.3.1 NUMBER OF CLASSES TAUGHT PER WEEK

The reader is referred to question 5 in the questionnaire (Appendix A).

The number of classes taught per week ranged from 2 to 13 (Figure 4.8). The mean number of classes taught per week was found to be 8. It was calculated that 15 (44,12%) of the instructors taught 10 or more classes per week.

It was found that 24 (70,58%) instructors taught on a free-lance basis while 10 (29,41%) did not (Figure 4.9).

4.3.2 REMUNERATION

The reader is referred to question 6 in the questionnaire (Appendix A), which is relevant to Figures 4.10, 4.11, 4.12, 4.13 and 4.14.

It was found that 23 (67,65%) of the instructors were dissatisfied with their remuneration while 11 (32,35%) were satisfied (Figure 4.10).

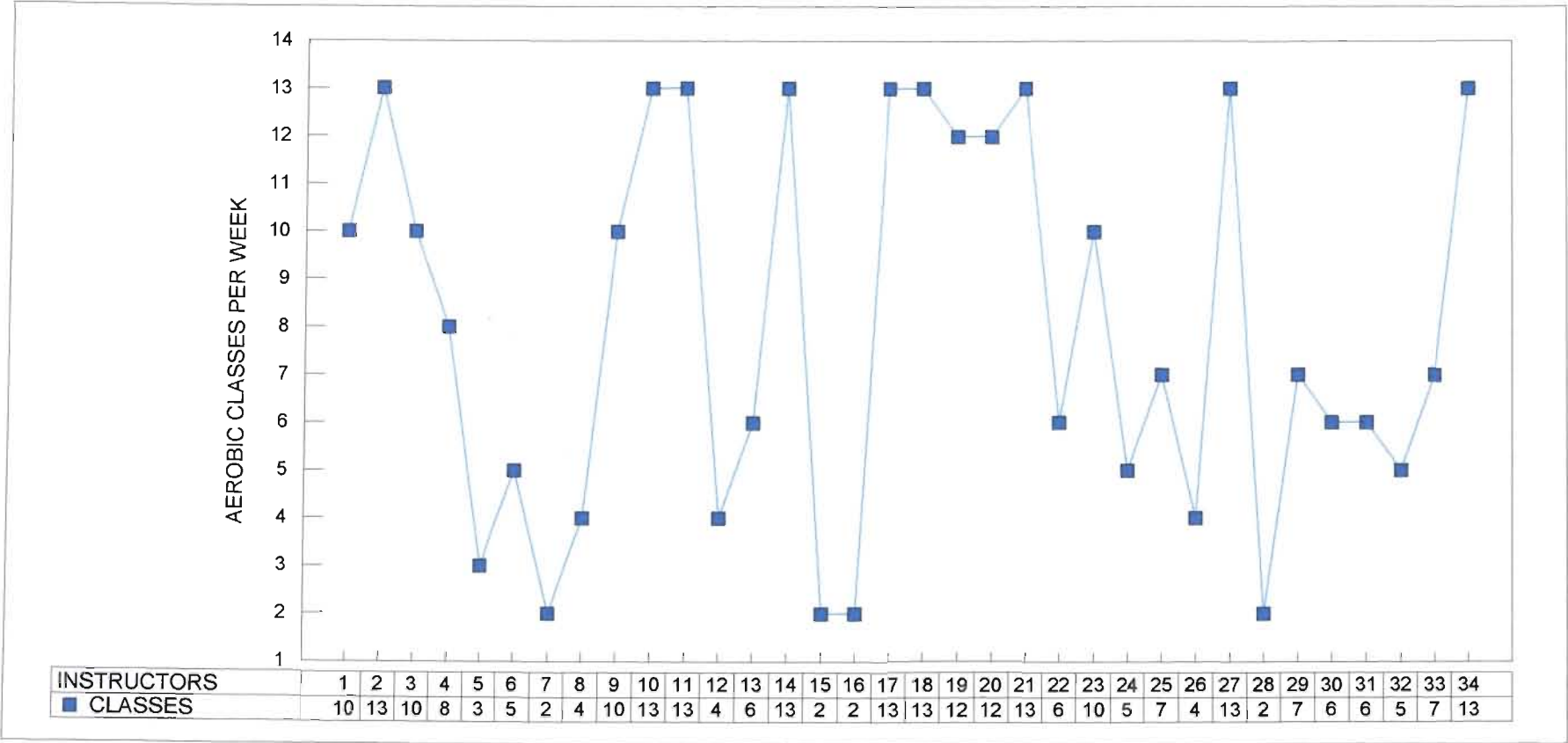


FIGURE 4.8 NUMBER OF AEROBIC CLASSES TAUGHT PER WEEK

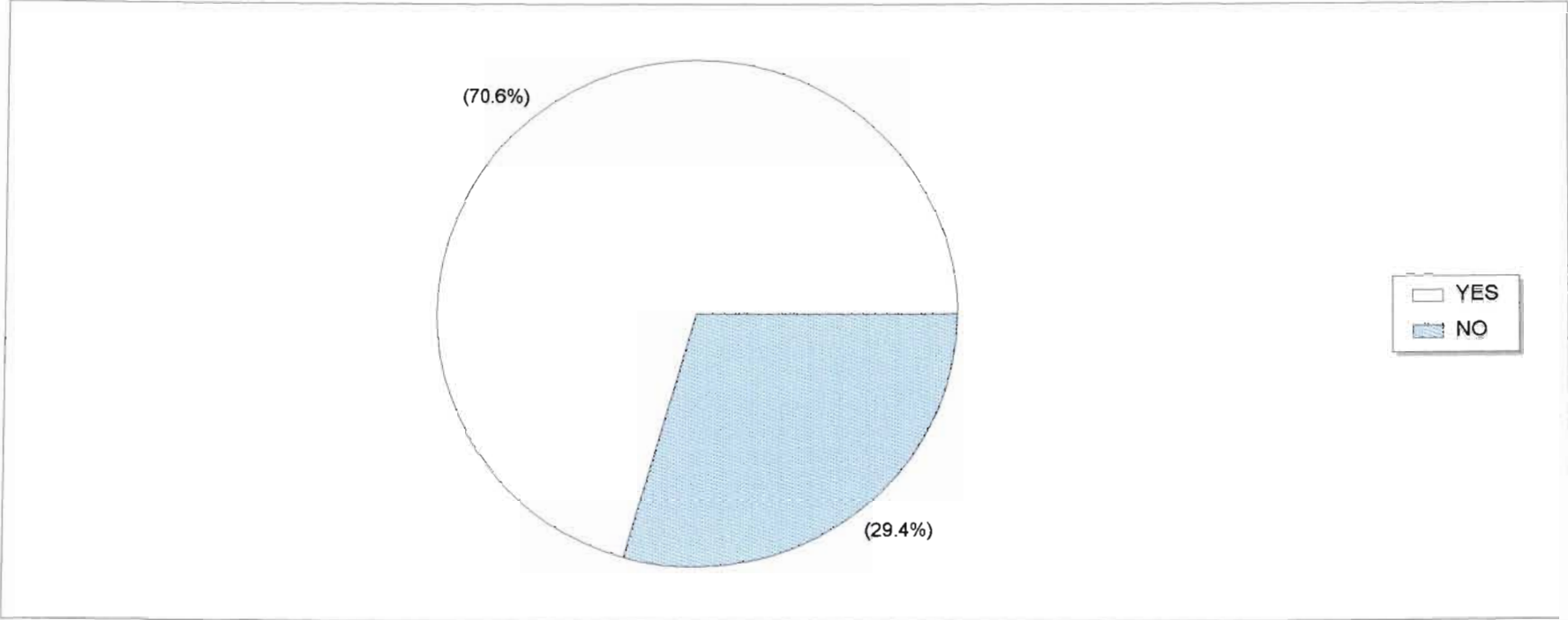


FIGURE 4.9 NUMBER OF INSTRUCTORS TEACHING ON A FREE-LANCE BASIS

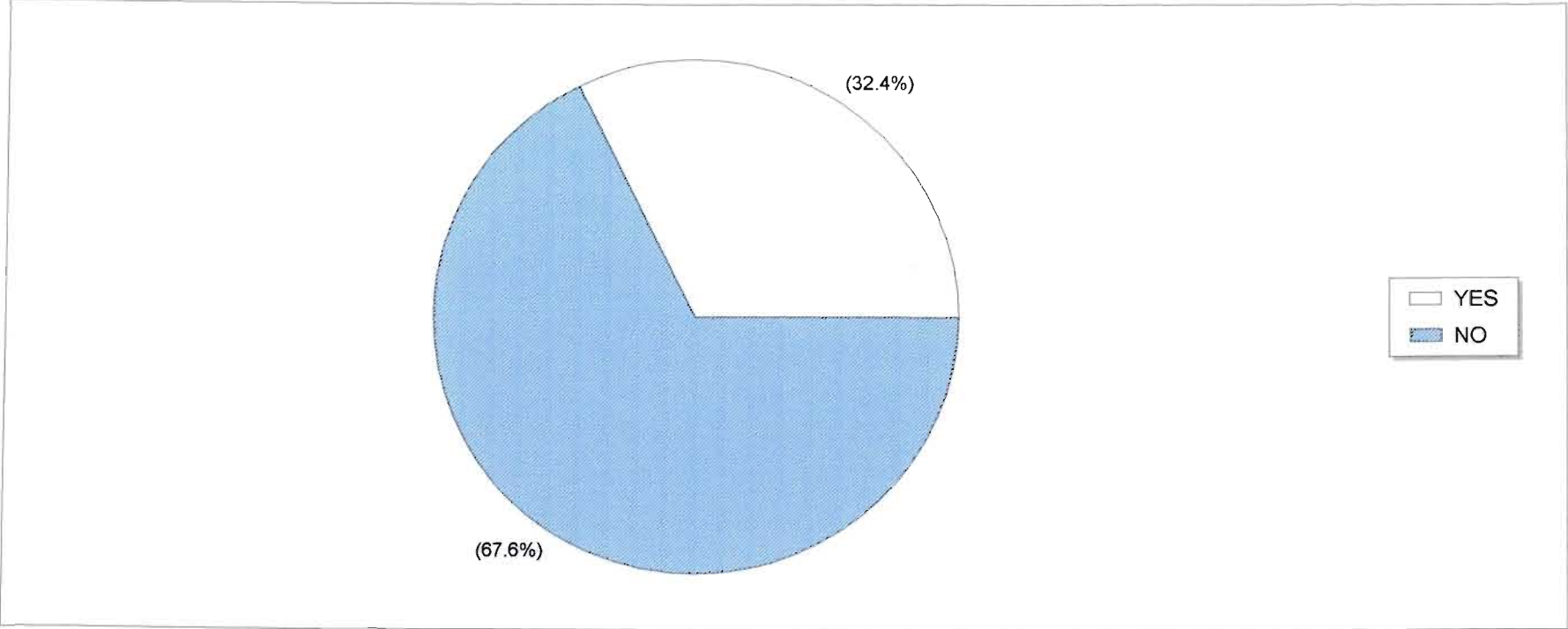


FIGURE 4.10 SATISFACTION WITH AEROBIC INSTRUCTION REMUNERATION

The instructors' remuneration ranged from R30.00 to R100.00 per class. There was a mean remuneration of R45.29. Five instructors received R30.00 per class, 14 received R40.00 per class, 11 received R50.00, 3 received R60.00 and 1 instructor received R100.00 per class (Figure 4.11).

Twenty (58.82%) instructors did have another form of employment and 14 (41,18%) did not (Figure 4.12). Thirteen (65%) instructors who did have another form of employment used this salary to supplement their aerobic instructor's income. Seven (35%) instructors did not use their additional salary to supplement their aerobic instructor's income (Figure 4.13). Four of the other forms of employment were related to the fitness industry, namely, a gymnasium manageress/weight training consultant, 4 weight training instructors and a personal trainer. Three instructors were teachers, 1 was a lecturer, 1 instructor was involved in home employment, 1 was a personal relations officer, 2 were administrators, 1 was a student, 1 was a computer programmer and 2 instructors were sales people (Figure 4.14).

4.3.3 MOVEMENT CONTENT TAUGHT

The reader is referred to question 7 in the questionnaire (Appendix A), which is relevant to Figure 4.15.

All movement areas listed were used and another four movement

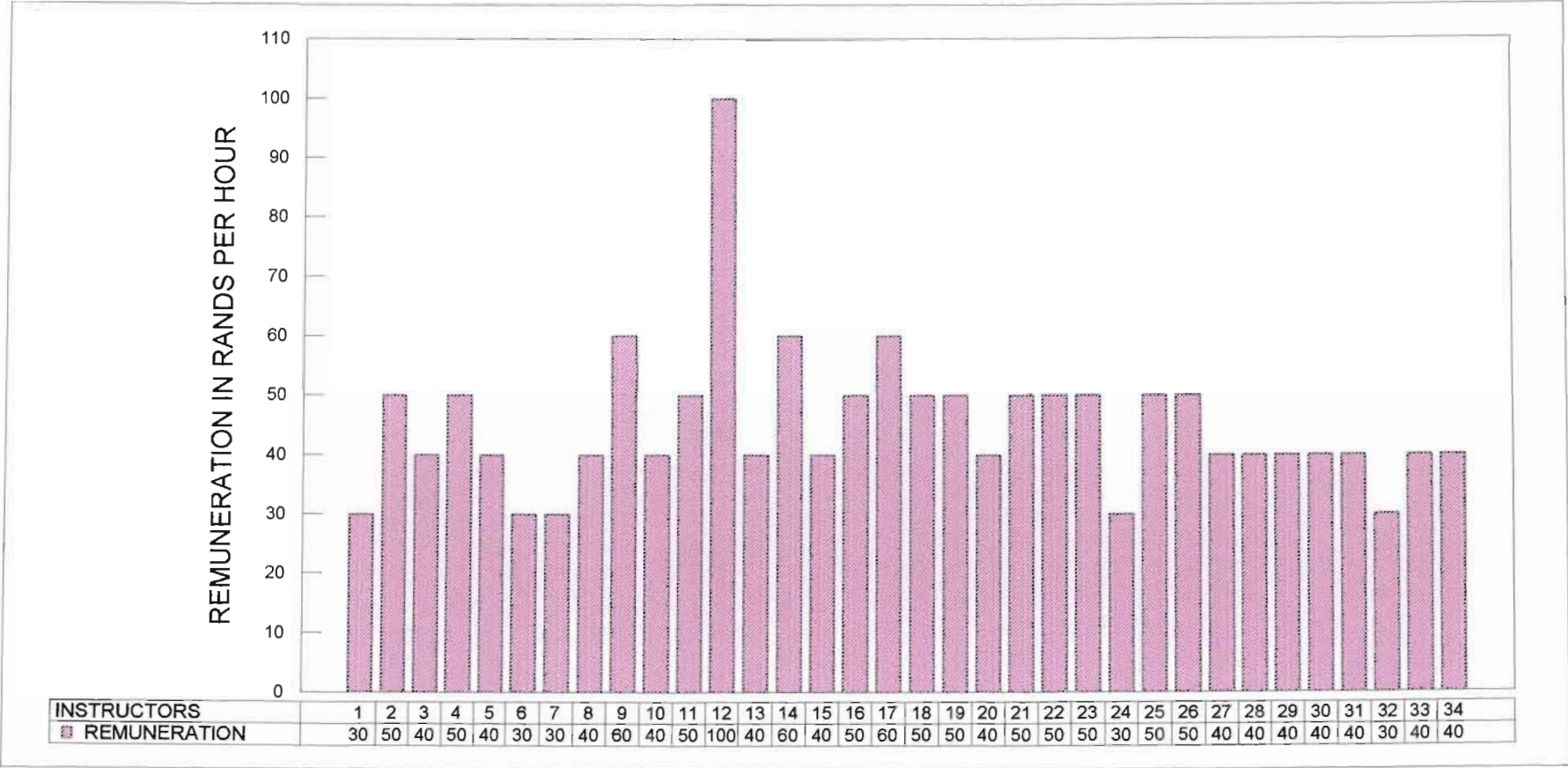


FIGURE 4.11 REMUNERATION FOR AEROBIC INSTRUCTION PER HOUR

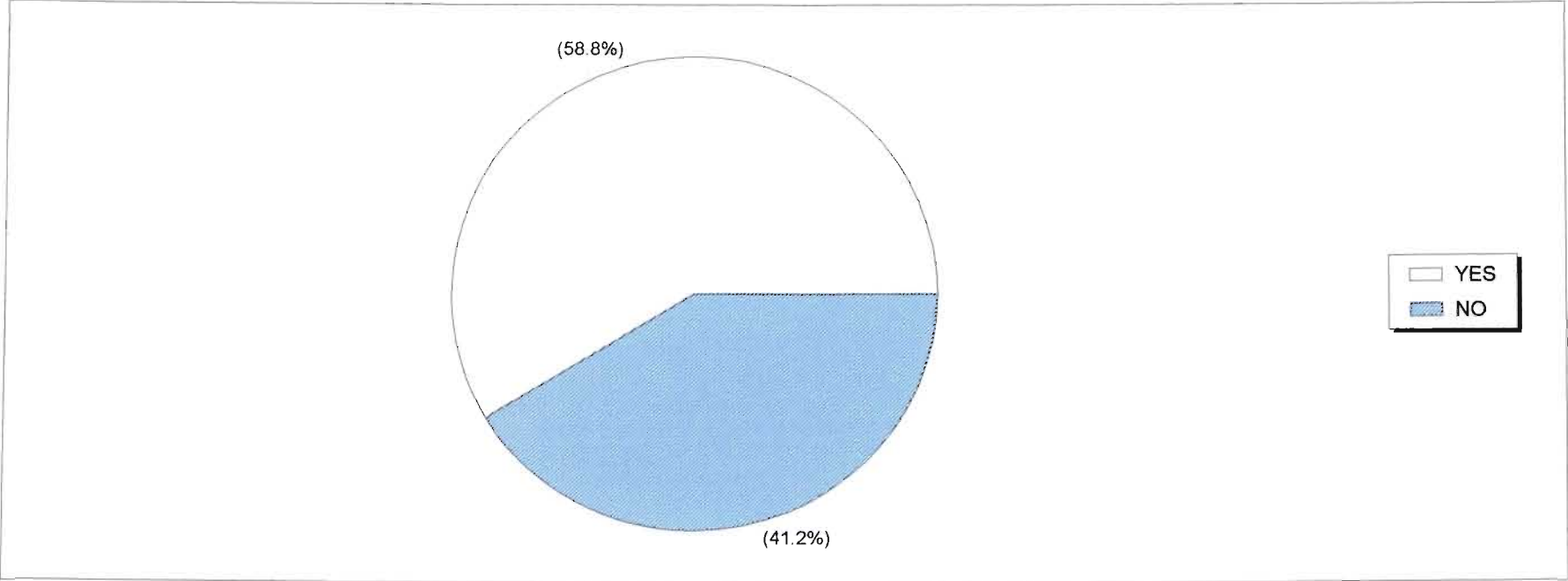


FIGURE 4.12 PERCENTAGE OF INSTRUCTORS HOLDING ANOTHER JOB

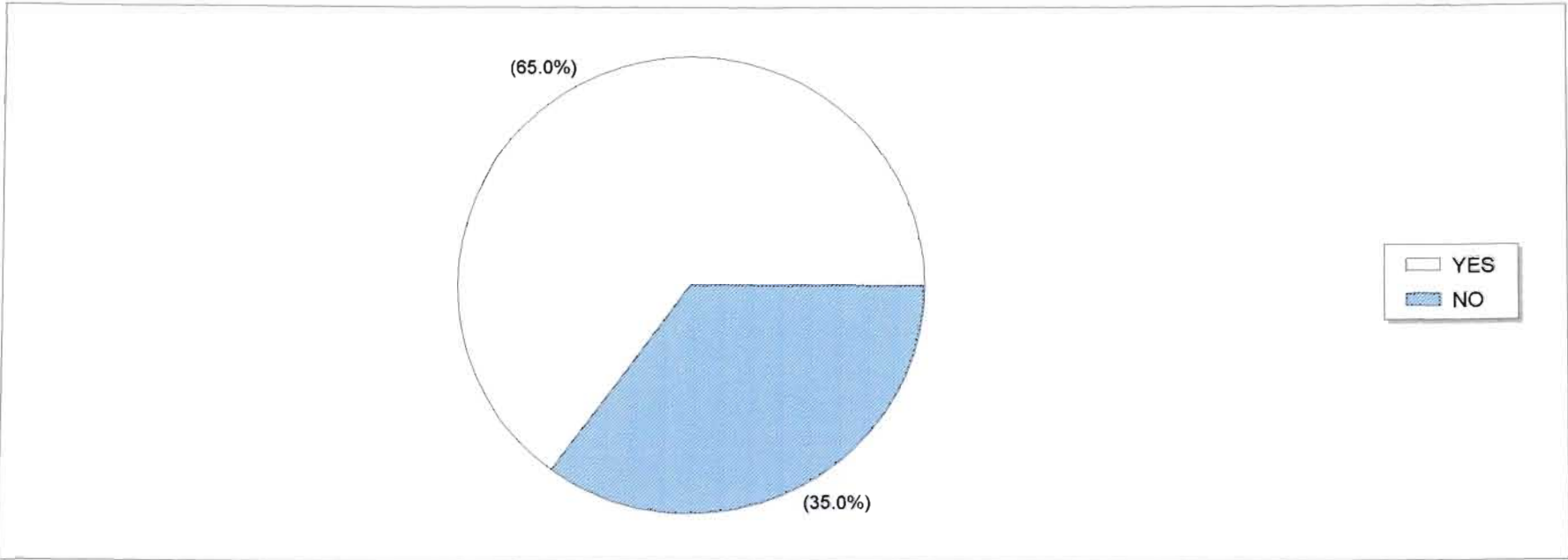


FIGURE 4.13 PERCENTAGE OF INSTRUCTORS USING SECOND INCOME TO SUPPLEMENT THEIR AEROBIC INSTRUCTION REMUNERATION

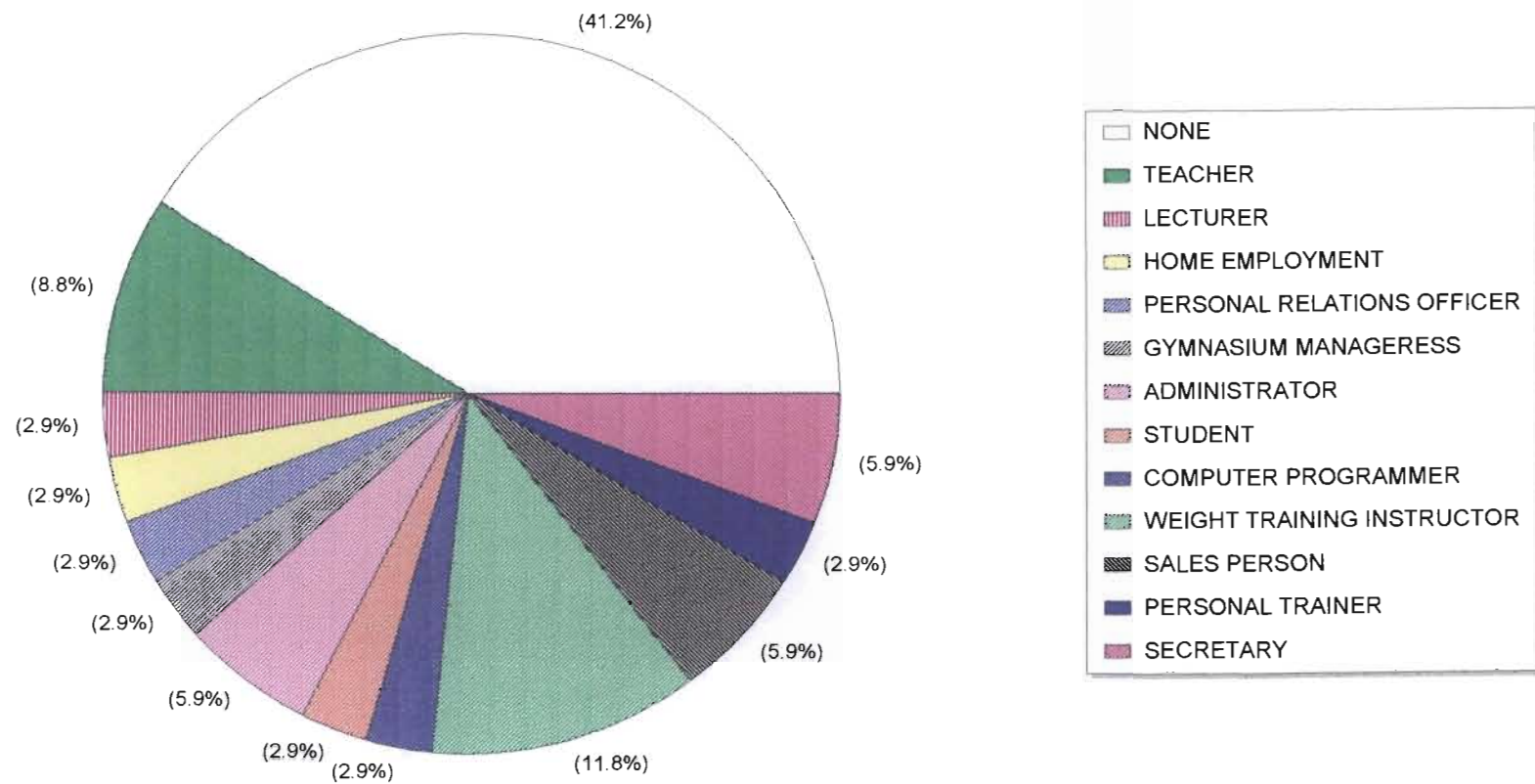


FIGURE 4.14 NATURE OF OTHER FORMS OF EMPLOYMENT

areas were added to the list by the aerobic instructors. One instructor used the movement areas yoga-aerobics, super-circuit, aerobics/balls. Three instructors used the movement area aerobics/bands. Sixteen instructors used calenetics. Seventeen instructors used step/aerobics and step/hand weights. Nineteen instructors used the movement area high impact aerobics/floor work. Twenty six instructors used aerobics/hand weights. Twenty seven instructors used step/floor work. Twenty eight instructors used stretch and tone and low impact/floor work. Thirty instructors used the movement area low-high impact/floor work (Figure 4.15).

The movement areas that were used by over 50% of the instructors were low-high impact/floor work, low impact/floor work, stretch and tone, step/floor work, aerobics/hand weights, high impact/floor work, step/aerobics and step/hand weights.

4.3.4 WEIGHT TRAINING INVOLVEMENT

Question 8 in the aerobic instructor's questionnaire (Appendix A) is applicable to this section. Figures 4.16, 4.17 and 4.18 are also relevant. It was found that 28 (82,35%) of the instructors were not involved in weight training programmes (Figure 4.16). Six (17,65%) instructors were involved in weight training in the capacities of weight training instruction, weight training consultant and a personal trainer (Figure 4.17). Two instructors had obtained certifications in weight training (Figure 4.18).

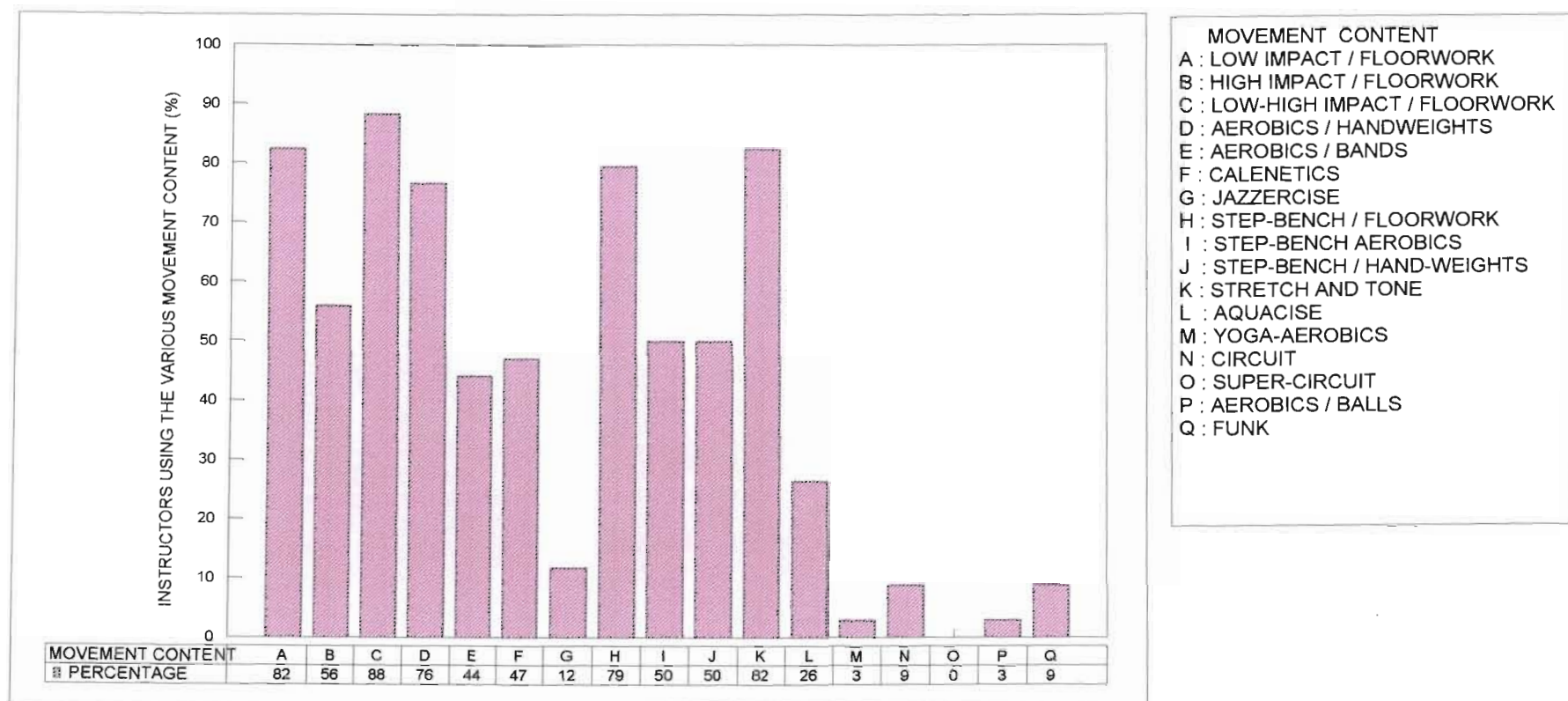


FIGURE 4.15 USE OF MOVEMENT CONTENT

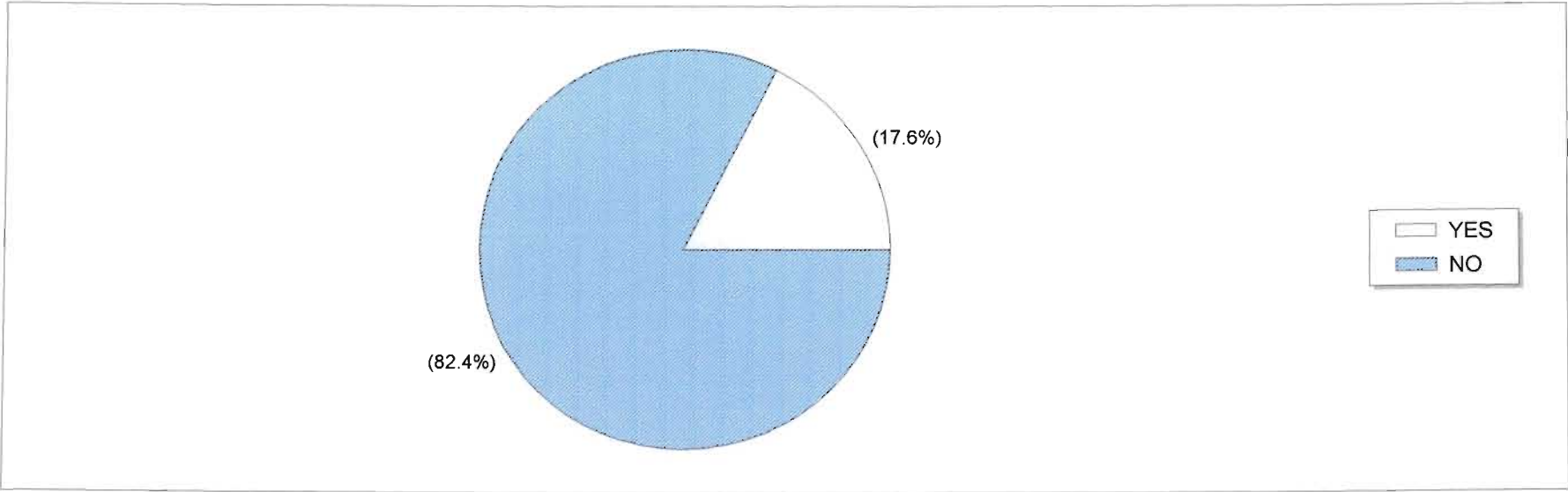


FIGURE 4.16 PERCENTAGE OF INSTRUCTORS INVOLVED IN RESISTANCE / WEIGHT TRAINING

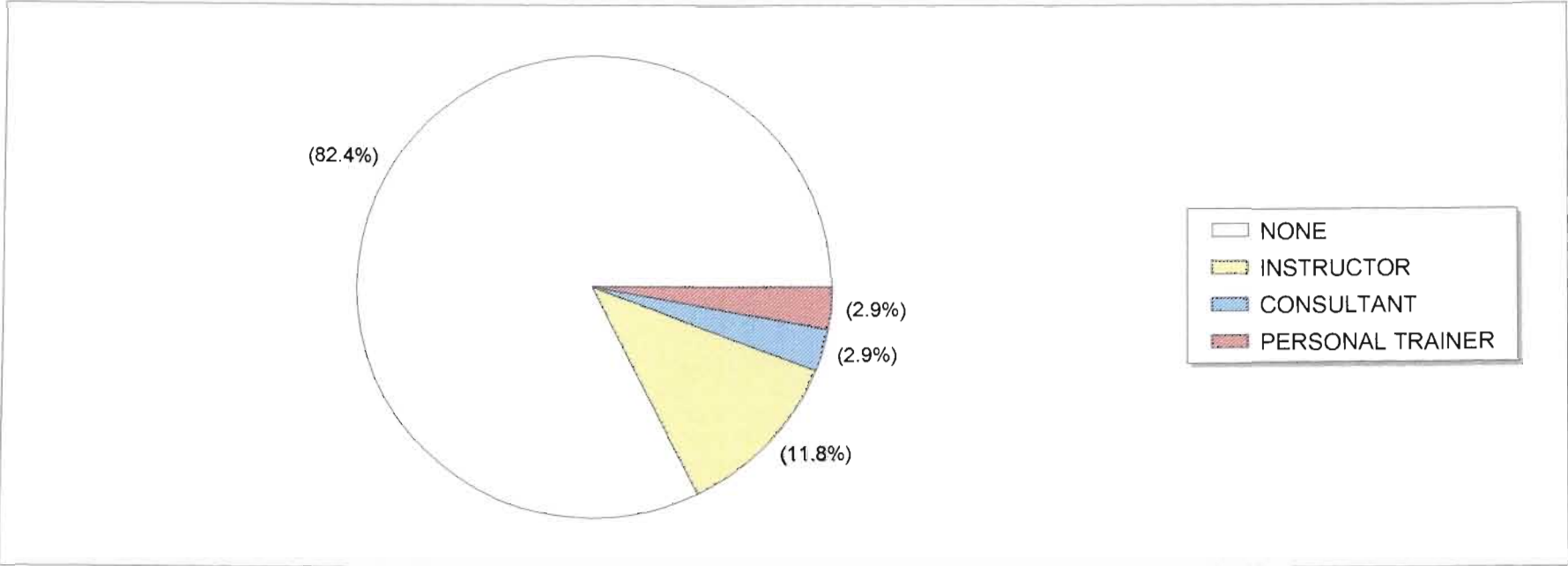


FIGURE 4.17 CAPACITY OF INVOLVEMENT

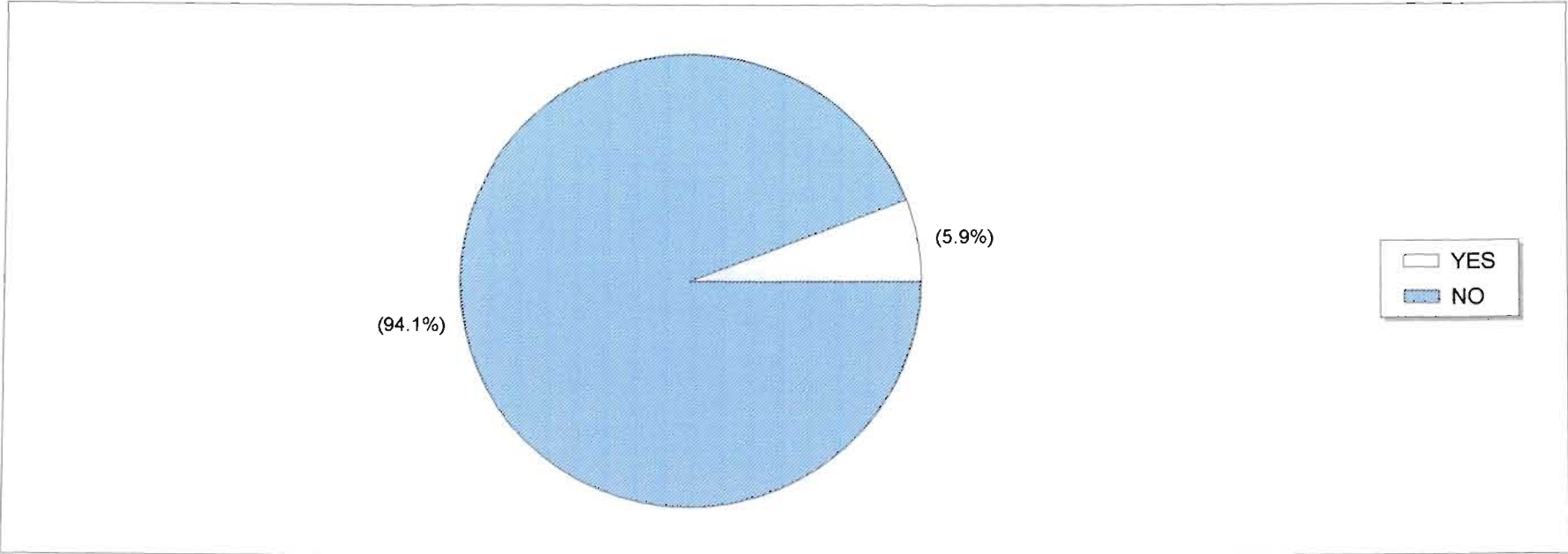


FIGURE 4.18 PERCENTAGE OF INSTRUCTORS WHO HAVE A CERTIFICATION IN WEIGHT TRAINING

4.3.5 RANGE OF TEACHING APPROACHES

Question 9 in the aerobic instructor's questionnaire refers to this topic (Appendix A). Table 4.6 and Figure 4.19 are relevant.

The respondents were asked to leave the question blank if they did not know the teaching styles they used. Consequently 23 (67,65%) instructors did not answer the question. Figure 4.19 indicates the range of teaching styles used by the aerobic instructors. Ten (90,91%) of the 11 instructors used the command style. This is a strongly teacher-centred approach. Eight (72,73%) of the instructors used the practice style. This style does provide opportunities for individualisation. The reciprocal style was used by 3 (27,27%) of the instructors. This style involves partner work. Six (54,55%) of the instructors used the self check style. This style relies on individual participants to provide their own feedback. The inclusion style was used by 5 (45,46%) of the instructors. This teaching style enables multiple levels of performance to be taught within the same activity (Table 4.6).

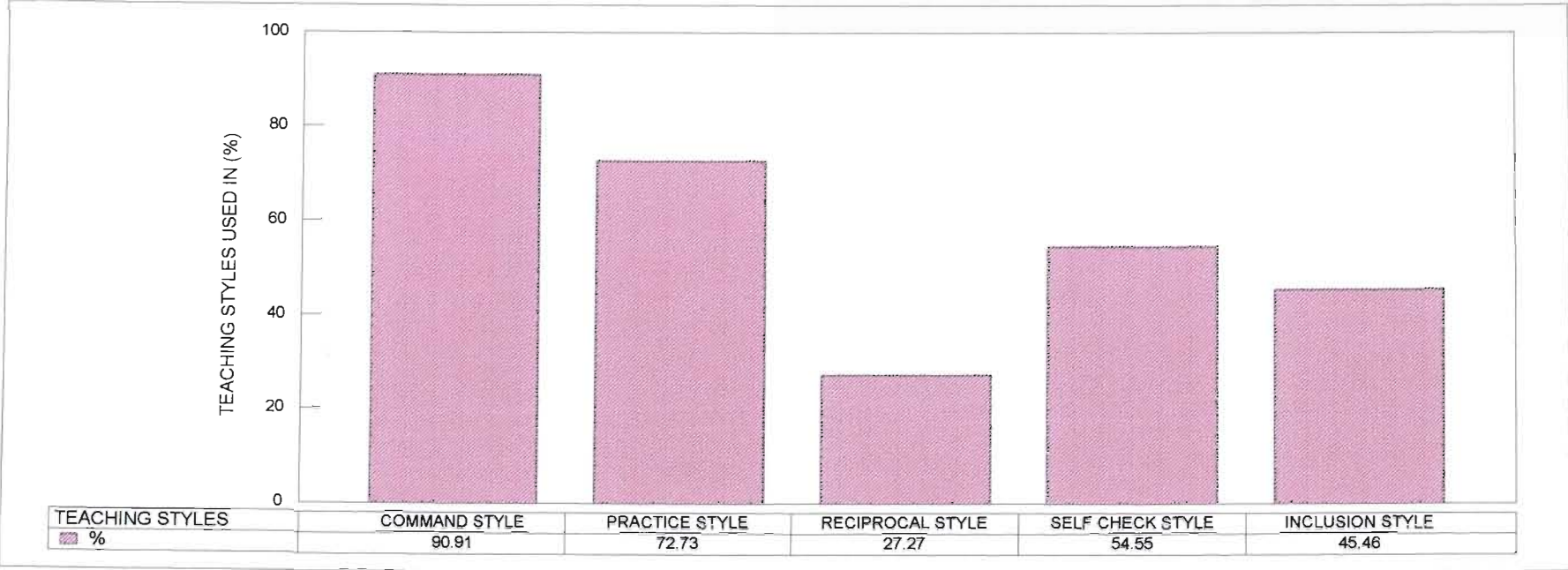


FIGURE 4.19 TEACHING STYLES USED

TABLE 4.6

RANGE OF TEACHING STYLES USED IN AEROBIC INSTRUCTION

(N = 11)

Teaching Styles	Number of Instructors	%
Command Style	10	90.91
Practice Style	8	72.73
Reciprocal Style	3	27.27
Self Check Style	6	54.55
Inclusion Style	5	45.46

4.3.6 FACILITIES FOR AEROBIC INSTRUCTION

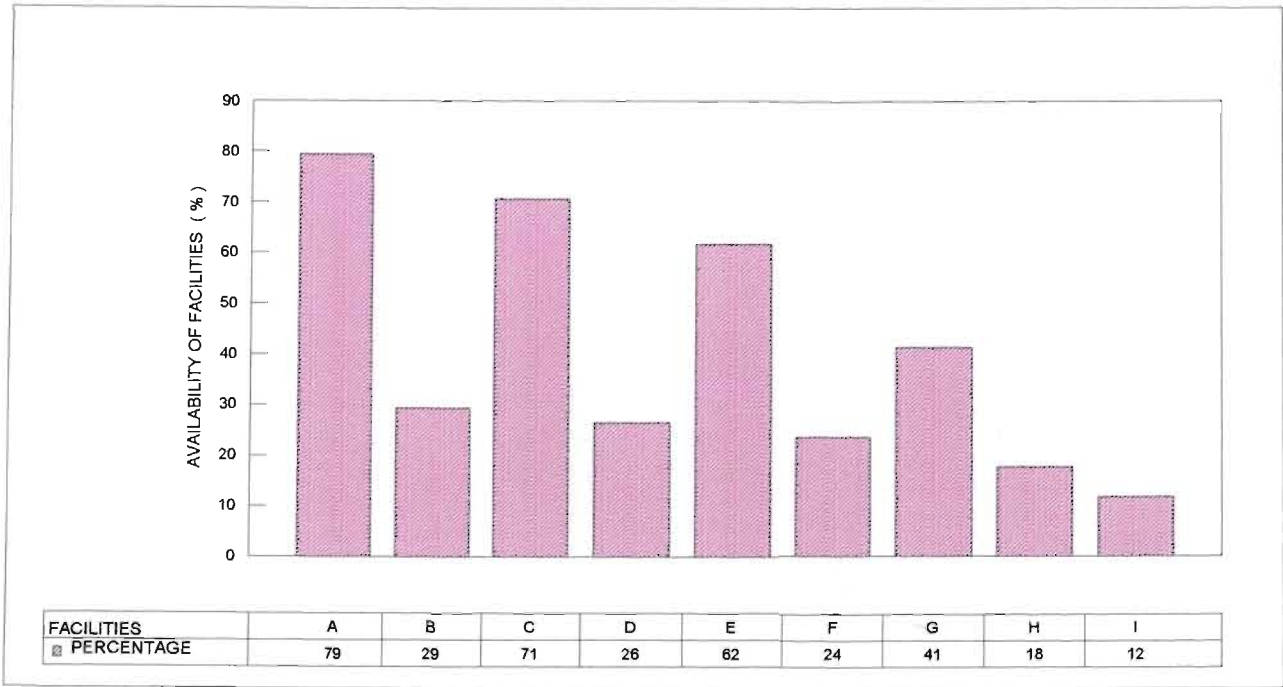
Question 10 in the questionnaire (Appendix A) is relevant to this topic. Figures 4.20 and 4.21 reveal the availability of facilities for aerobic instruction.

Twenty seven (79,42%) fitness centre had changing facilities. Ten (29,41%) instructors taught aerobics in a hall while 24 (70,59%) made use of an aerobic studio. Nine (26,47%) instructors had a pool available for teaching aquacise. Twenty one (61,77%) instructors had an office available for clerical work. Eight (23,53%) fitness centres had a nursery, 14 (41,18%) had a social area, 6 (17,65%) had a first aid area and 4 (35,29%) fitness centres had a lecture room (Figure 4.20).

The other facilities that were available for use by some instructors were squash courts, massage/aromatherapy room, bodystat room, sauna, Jacuzzi, fitness assessment room, sunbed and health bar (Figure 4.21).

4.3.7 EQUIPMENT

The reader is referred to question 11 in the questionnaire (Appendix A) which is relevant to this section. Figure 4.22 shows the availability of equipment for the use in the teaching of aerobics.



- FACILITIES
- A : CHANGE ROOMS
 - B : HALL
 - C : AEROBIC / DANCE STUDIO
 - D : SWIMMING POOL
 - E : OFFICE
 - F : NURSERY
 - G : SOCIAL AREA
 - H : FIRST AID
 - I : LECTURE ROOM

FIGURE 4.20 AVAILABILITY OF FACILITIES

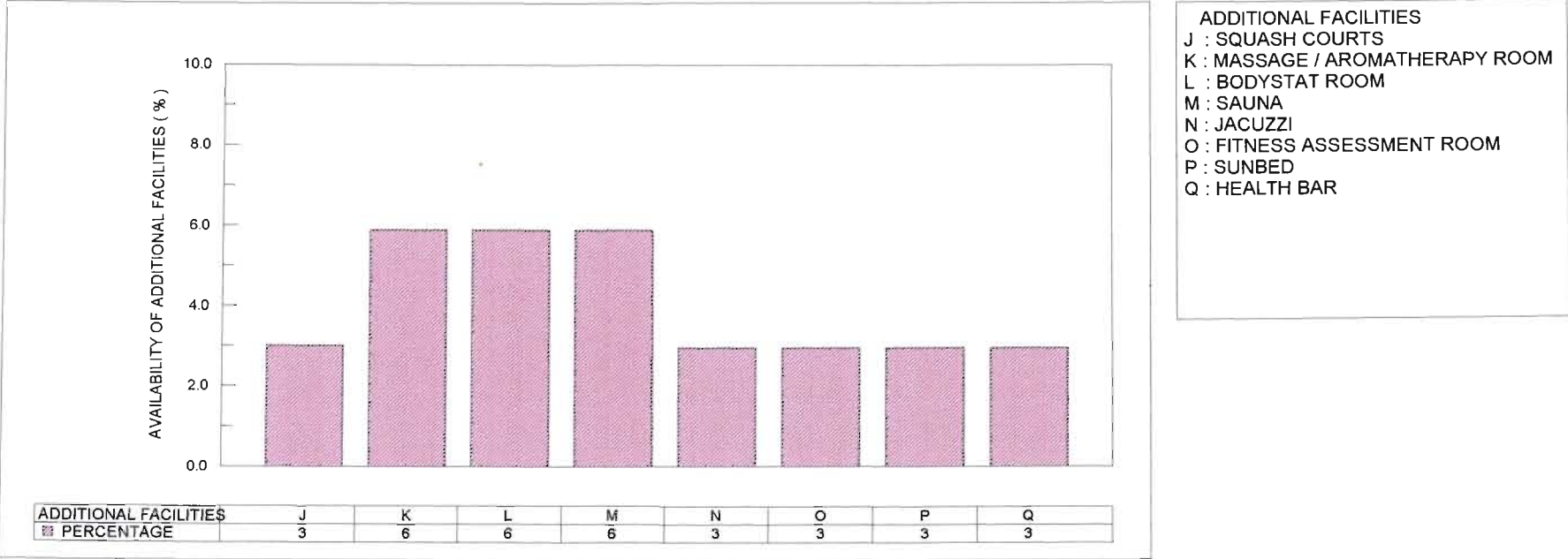


FIGURE 4.21 AVAILABILITY OF ADDITIONAL FACILITIES

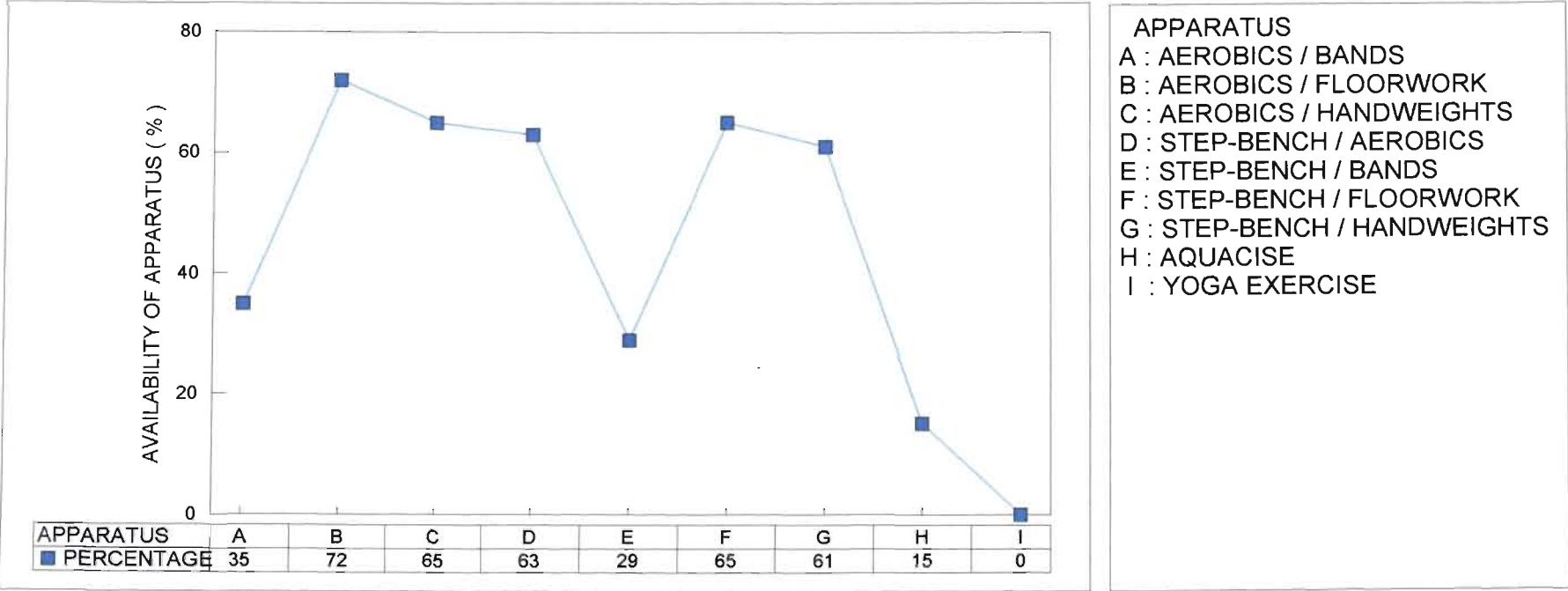


FIGURE 4.22 AVAILABILITY OF APPARATUS

The apparatus available for aerobics, floor work, step/bench and aerobic hand weights was evaluated as good. Bands and apparatus for aquacise was considered insufficient. There was no equipment available for yoga.

4.3.8 AEROBIC CLASS STRUCTURE

Question 12 in the aerobic instructor's questionnaire (Appendix A) refers to this topic.

Twenty nine (85,29%) instructors used the lesson format of a warm up/stretch, aerobic phase, floor work and cooldown/stretch. Five (14,71%) instructors used the lesson format of warm up/stretch, aerobic phase, floor work, weights and cooldown/stretch (Figure 4.23).

Thirty two (94,12%) instructors changed their lesson format to service the specific needs of the class (Figure 4.24). The reasons given for the change in class format were the age of the aerobic clientele, fitness level of the clientele, stretch and tone classes, calisthenics, pre/natal classes, weight reduction classes, weather, level of enthusiasm of clientele, time of the class and gender.

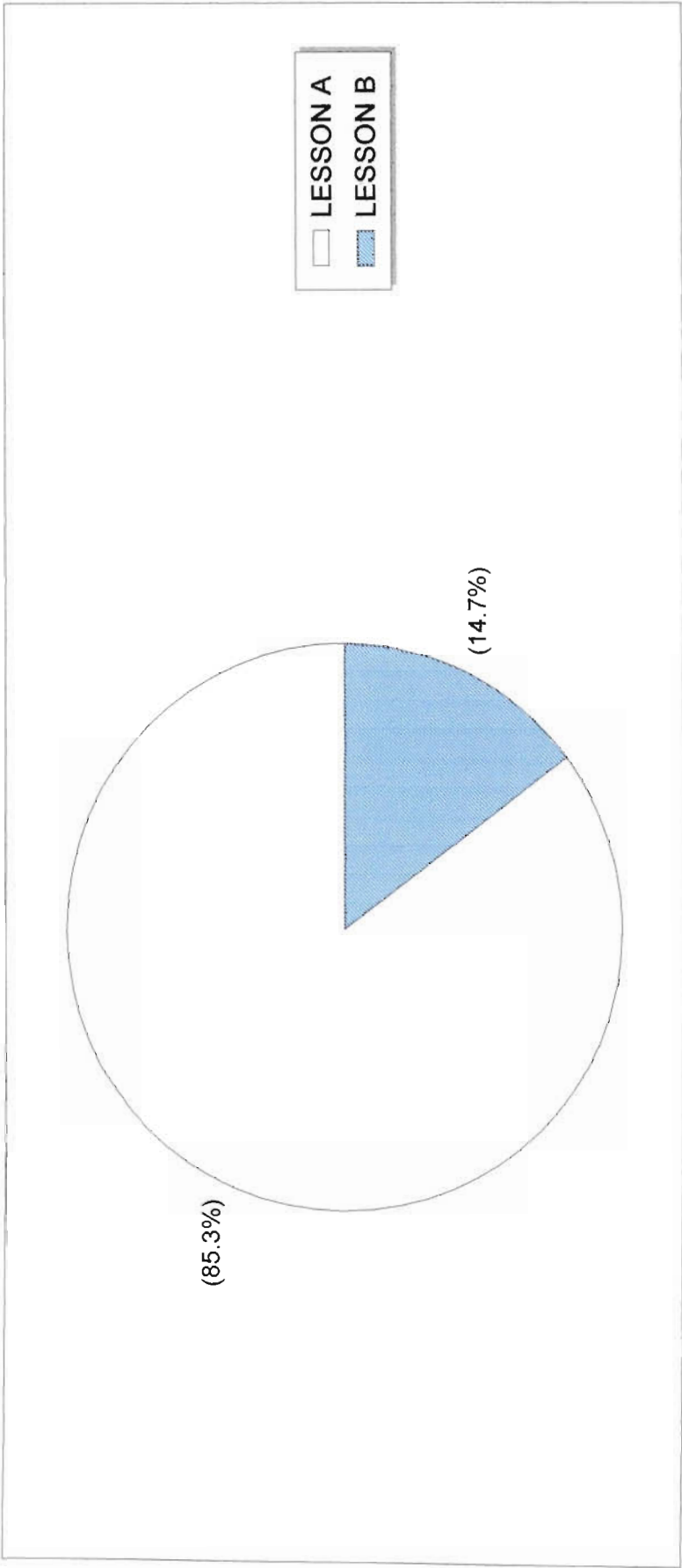


FIGURE 4.23 AEROBIC LESSON STRUCTURE

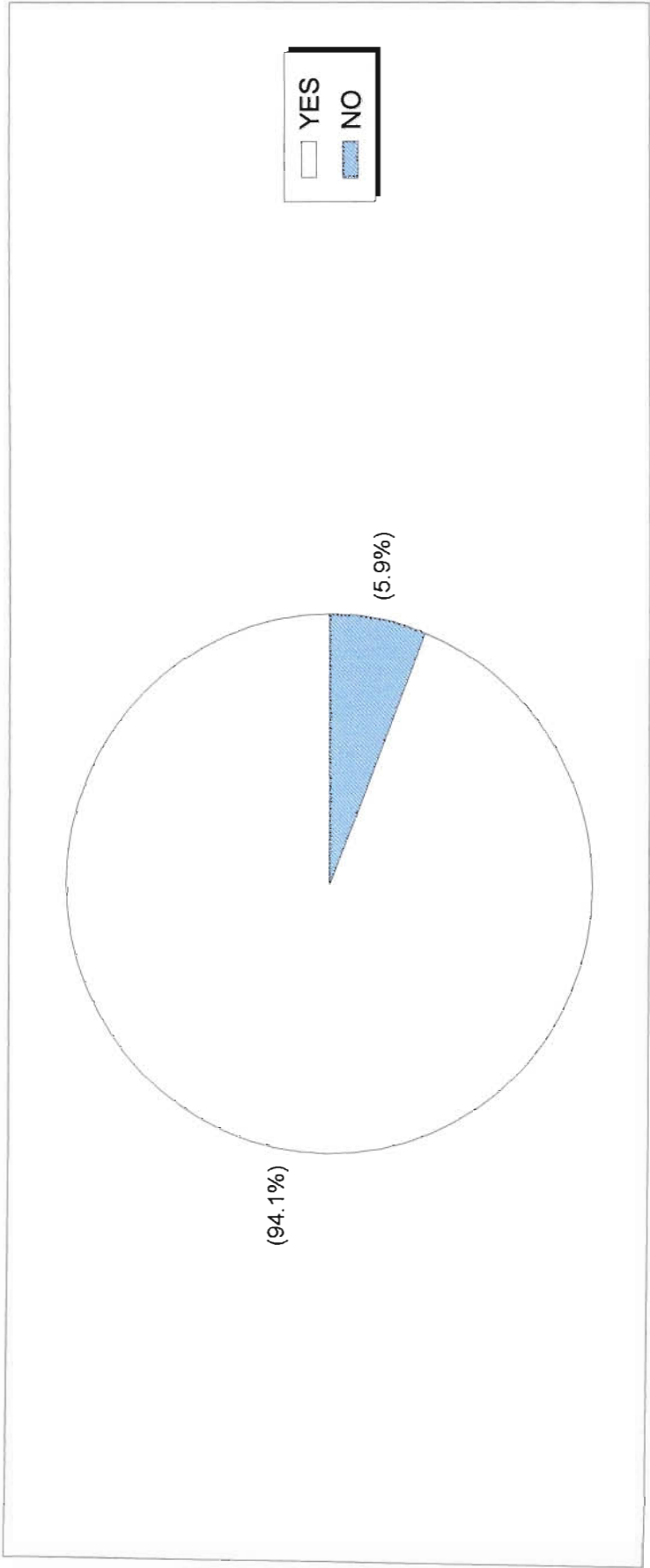


FIGURE 4.24 INCIDENCE OF THE CHANGE IN STRUCTURE

4.3.9 EXTENT AND CONTENT OF EVALUATION

Question 13 of the aerobic instructor's questionnaire (Appendix A) is pertinent to this question.

It was noted that all aspects were evaluated to a greater or lesser degree. In the morphological aspects, body mass was monitored by 74% of the aerobic instructors and waist girth by 62% of the instructors. The aspect that was least evaluated was postural characteristics as only 44% of the aerobic instructors evaluated this aspect (Figure 4.25).

Cardiovascular endurance and body composition received the greatest attention in the evaluation of physical fitness components. This was evaluated by 50% of the instructors (Figure 4.26).

Health related aspects were poorly evaluated. Obesity and shin splints received the greatest attention (Figure 4.27).

The performance related aspects received more attention with correct execution of movement being evaluated by 74% of the aerobic instructors. Over and under exercising was evaluated by 50% of the instructors (Figure 4.28).

It was noted that 27% of the aerobic instructors kept records of all clients, 35% of the instructors kept records on some of the aerobic clientele, while 38% of the instructors kept no records at all (Figure 4.29).



FIGURE 4.25 INCIDENCE OF THE EVALUATION OF MORPHOLOGICAL ASPECTS

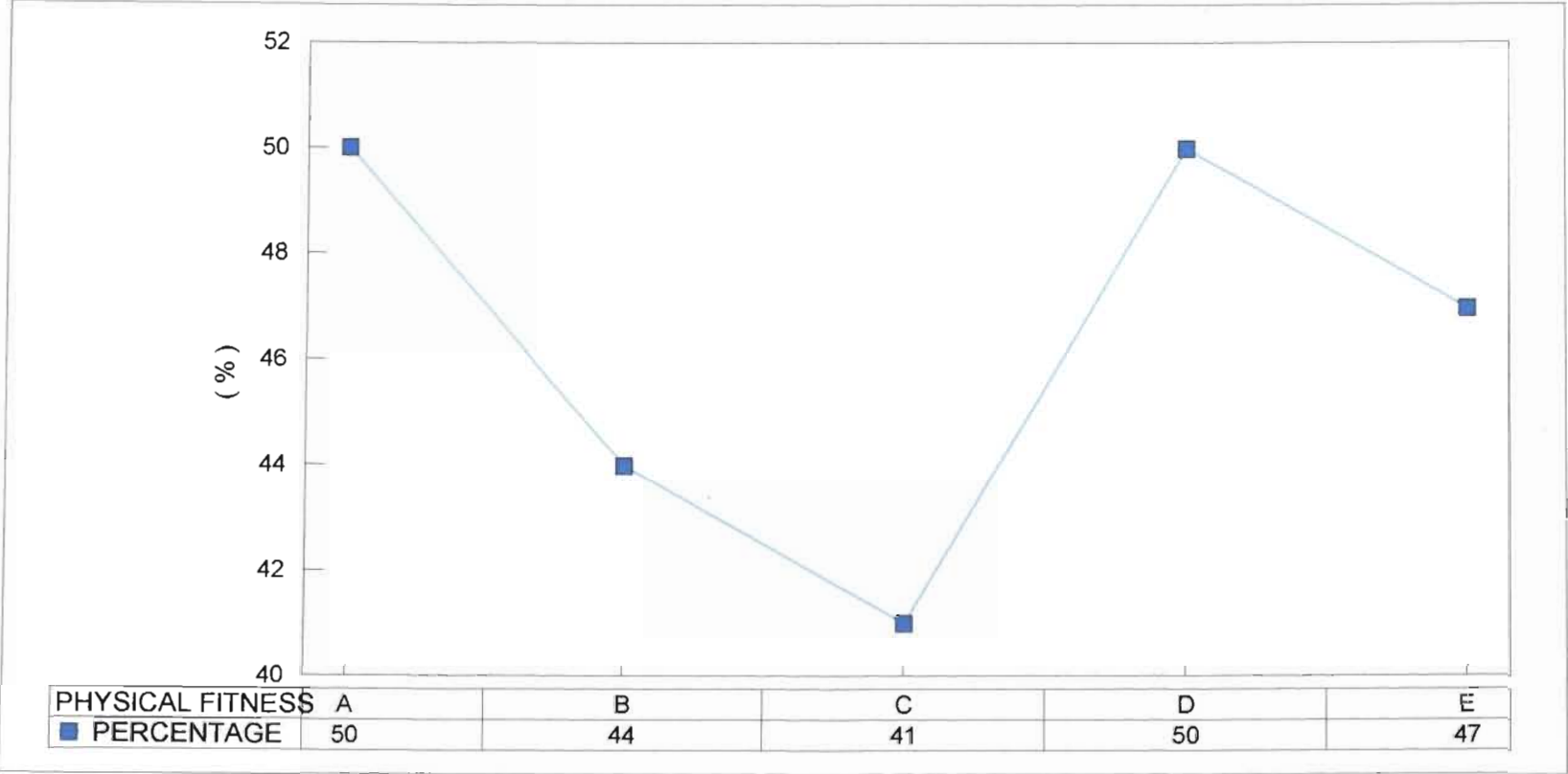


FIGURE 4.26 INCIDENCE OF THE EVALUATION OF PHYSICAL FITNESS COMPONENTS

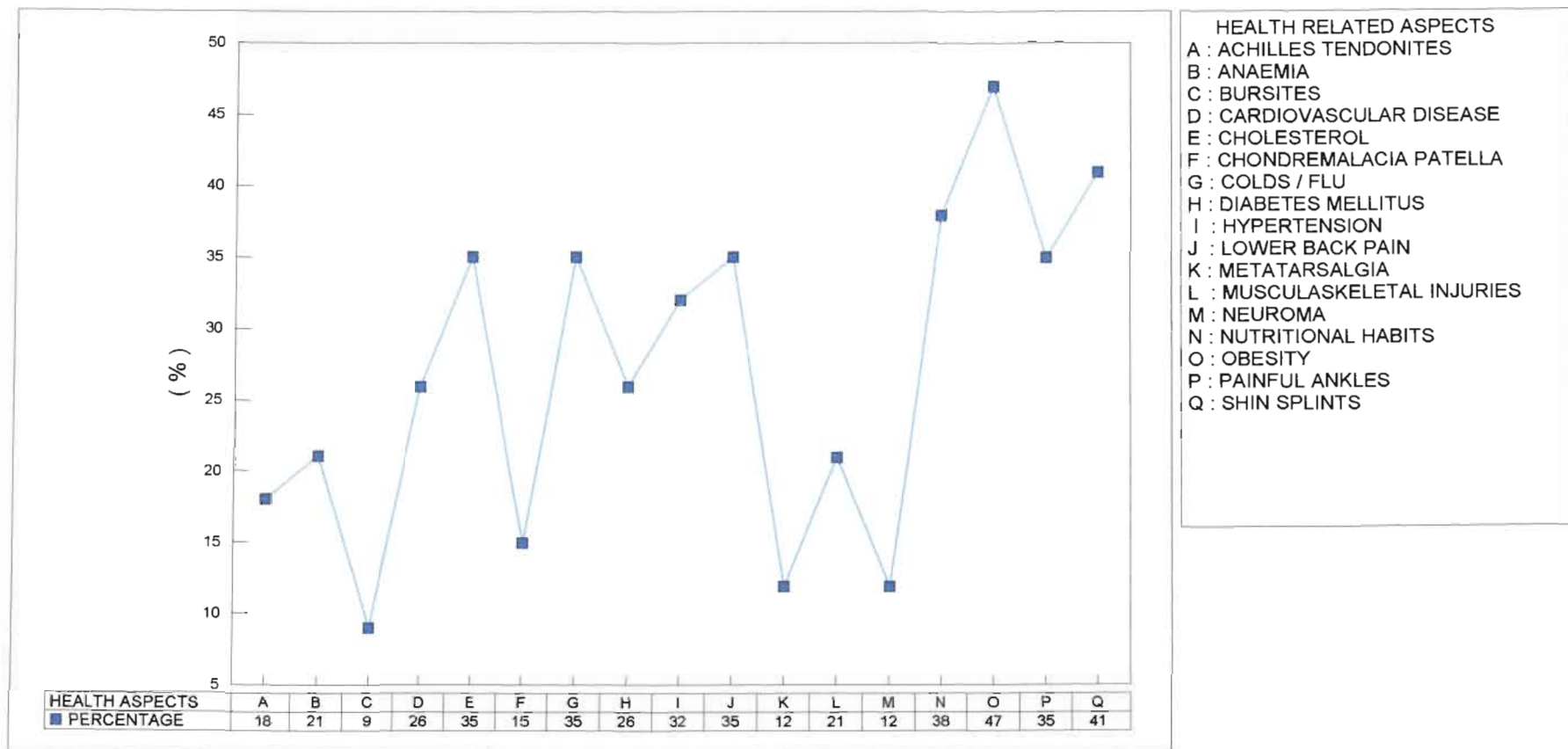


FIGURE 4.27 INCIDENCE OF THE EVALUATION OF HEALTH RELATED ASPECTS

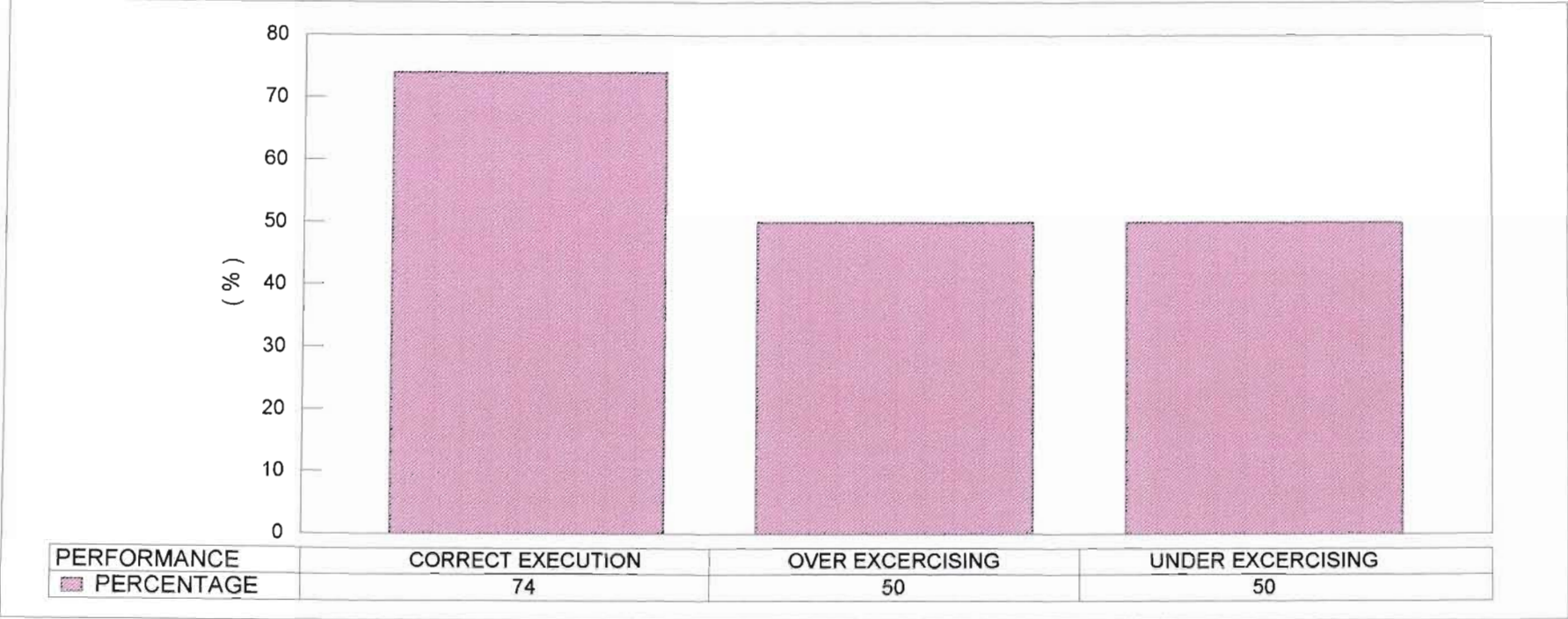


FIGURE 4.28 INCIDENCE OF EVALUATION OF PERFORMANCE RELATED ASPECTS

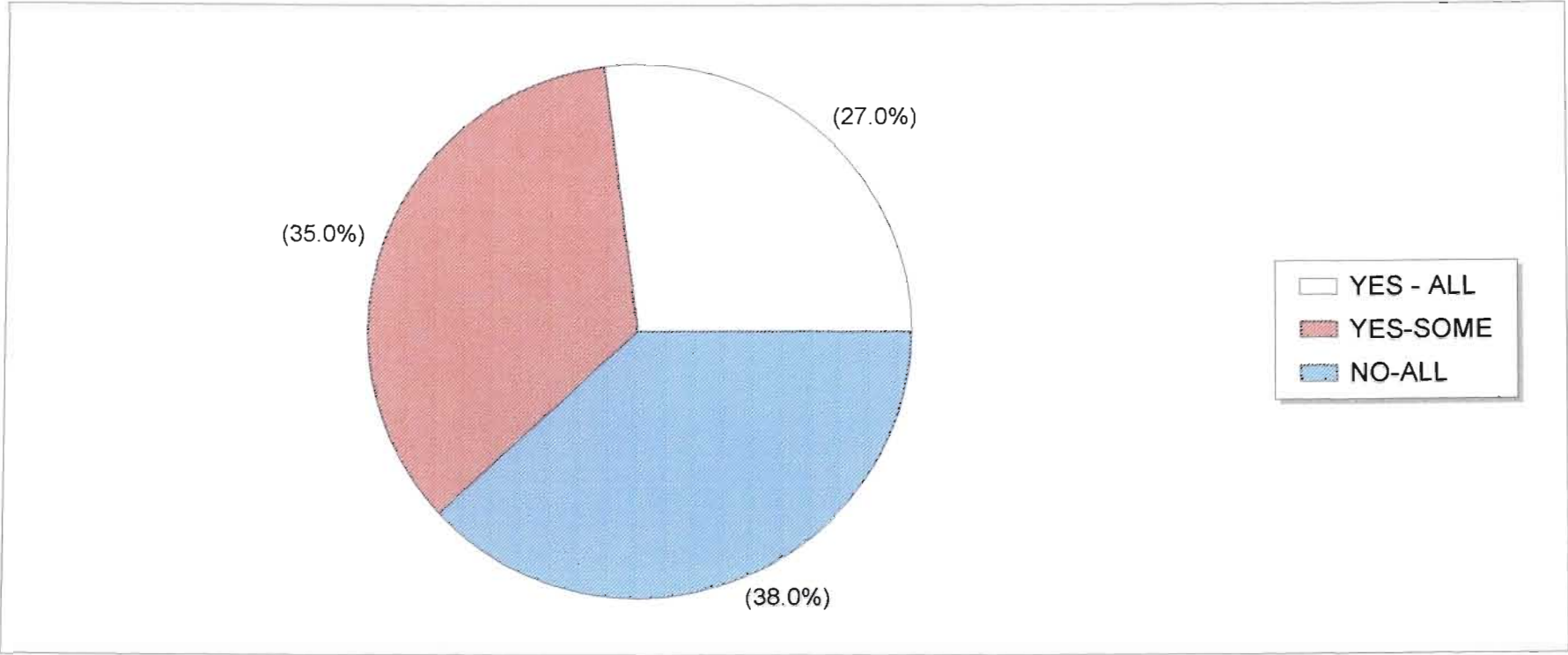


FIGURE 4.29 RECORD KEEPING PERFORMANCE

4.3.10 REASONS FOR AEROBIC INVOLVEMENT

The reader is referred to question 14 in the questionnaire (Appendix A), which is relevant to Figures 4.30, 4.31, 4.32, 4.33, 4.34.

Eighty two percent of the aerobic instructors had become involved in aerobic instruction because they enjoyed exercise. Seventy six percent of the instructors quoted fitness maintenance for their reason for involvement. Forty seven percent of the instructors became involved in order to teach. Health promotion was recorded as a reason for involvement by 26% of the instructors and 6% wanted to earn money (Figure 4.30).

Sixty eight percent of the aerobic instructors felt equipped to serve the gymnasium clientele. Twenty three percent did not feel equipped and 9% were unsure (Figure 4.31). Even (32.4%) instructors felt that further training would help them feel more equipped to serve the aerobic clientele but that high costs of training prevented them gaining further training (Figure 4.32). All instructors felt that there was a need for further training (Figure 4.33).

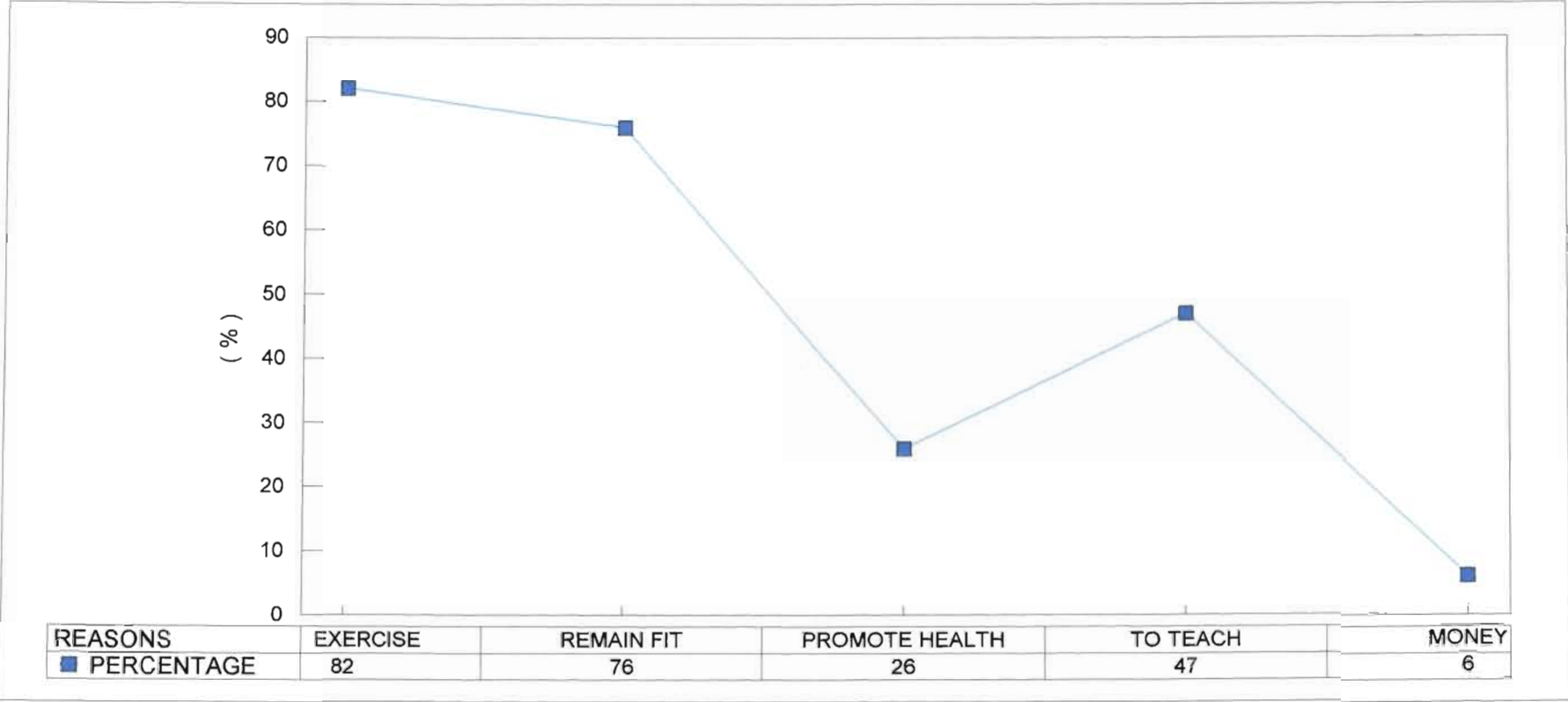


FIGURE 4.30 REASONS FOR BECOMING INVOLVED IN THE FITNESS INDUSTRY

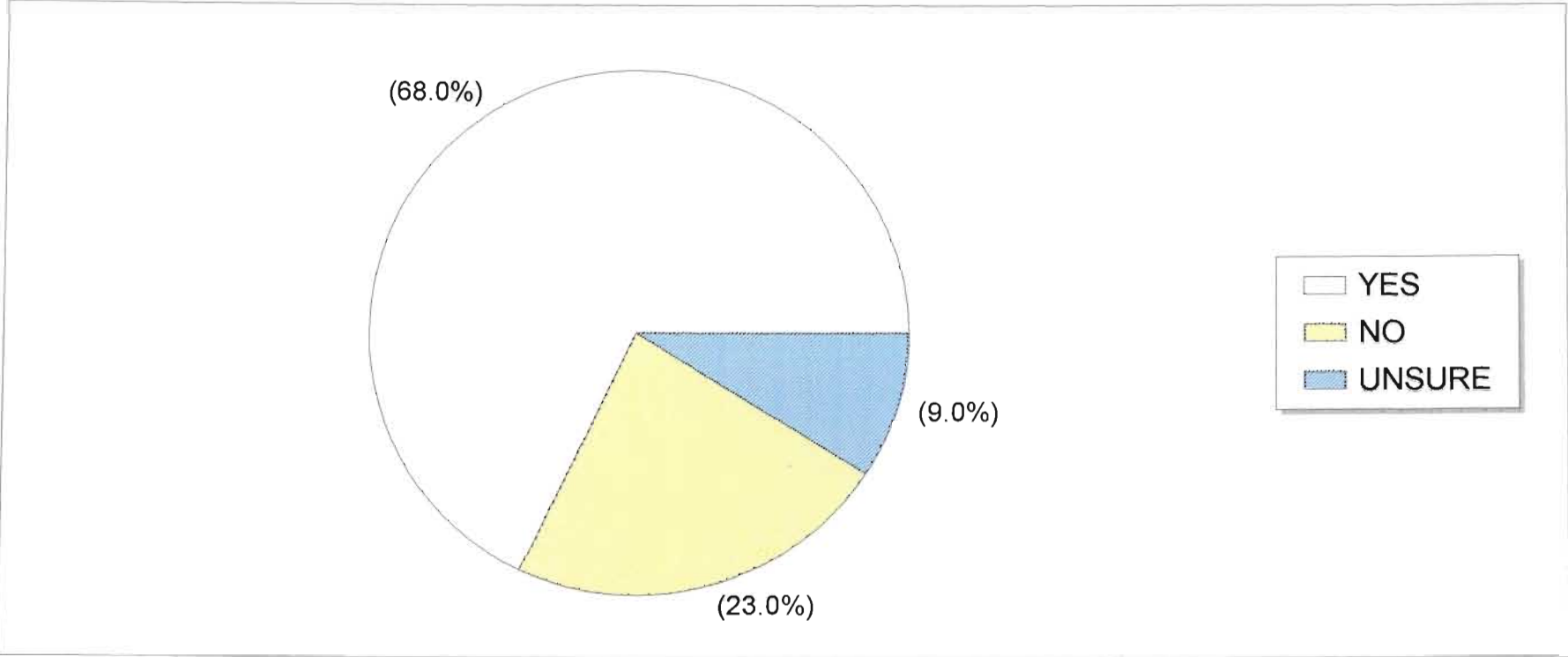


FIGURE 4.31 INSTRUCTORS WHO FEEL COMPLETELY EQUIPPED TO SERVE THE GYMNASIUM CLIENTELE

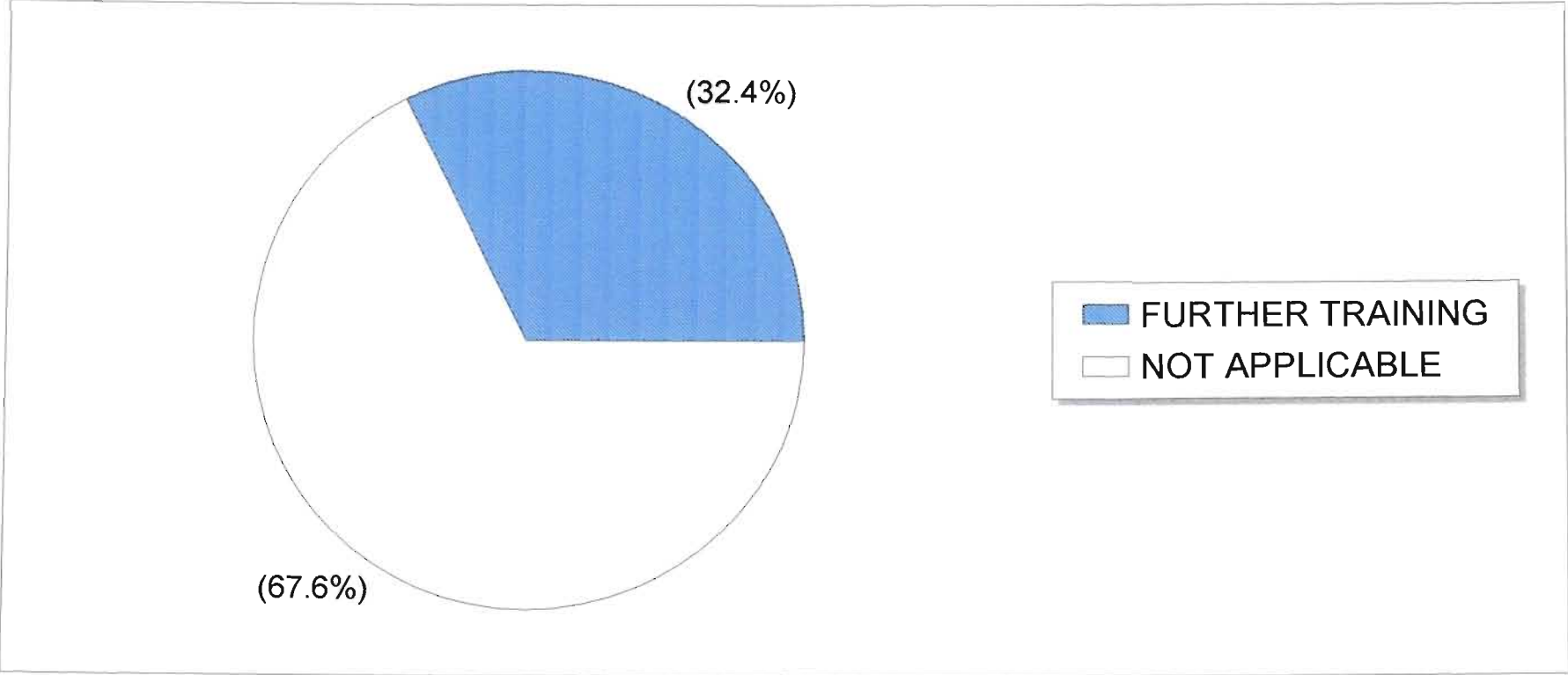


FIGURE 4.32 INCIDENCE OF THE NEED FOR MORE TRAINING

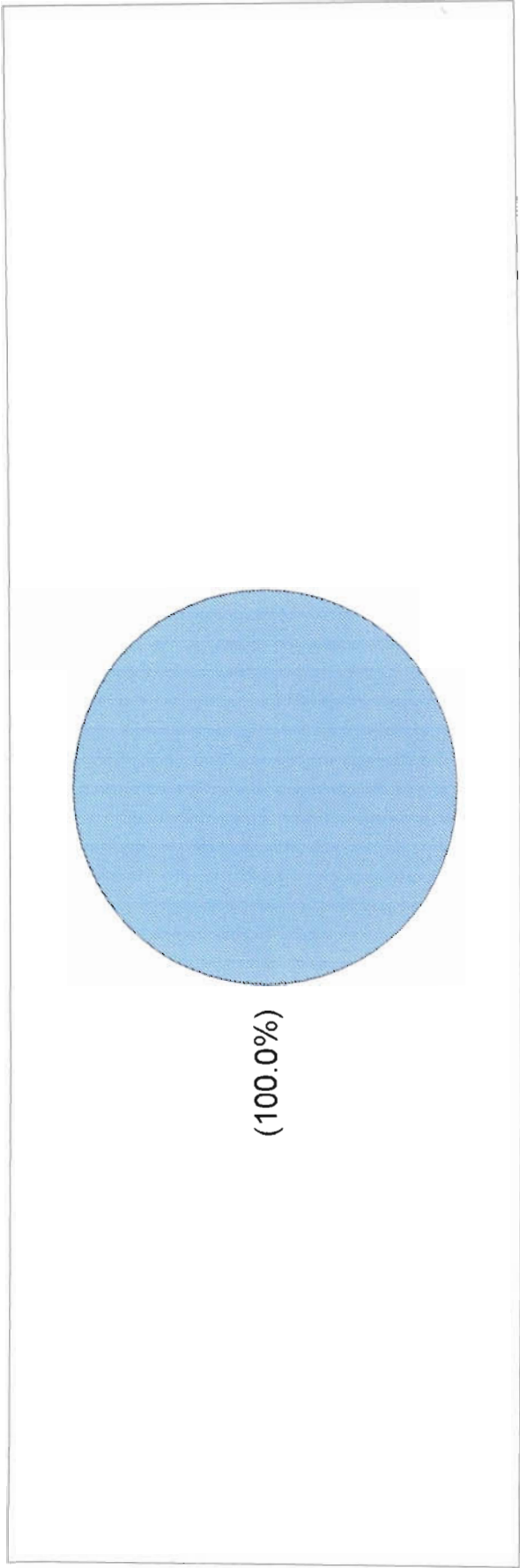


FIGURE 4.33 INCIDENCE OF THE NEED FOR MORE TRAINING

4.3.11 PERCEIVED BENEFITS OF THE AEROBIC CLIENTELE

Forty four percent of the aerobic instructors thought that one of the benefits of training for the aerobic clientele was improvement of their quality of life. Forty one percent thought that stress release and socialisation were another two benefits. Health and fitness improvement were thought to be a benefit by 35% of the aerobic instructors. Twenty one percent of the instructors recorded that weight loss/gain and body sculpturing could be other benefits. Nine percent of the instructors saw rehabilitation as a benefit and 3% considered enjoyment and relaxation to be a benefit (Figure 4.34).

4.4 THE FITNESS INDUSTRY

4.4.1 STRUCTURE

The reader is referred to question 15 in the questionnaire (Appendix A), which is relevant to Figures 4.35 and 4.36.

Fifty three percent of the aerobic instructors thought the structure of the fitness industry, namely, training organisations, fitness centres, owners/managers, instructors, promoters and other personnel was an efficient one. Thirty two percent of the instructors thought it was an inefficient structure and 15% were unsure (Figure 4.35).

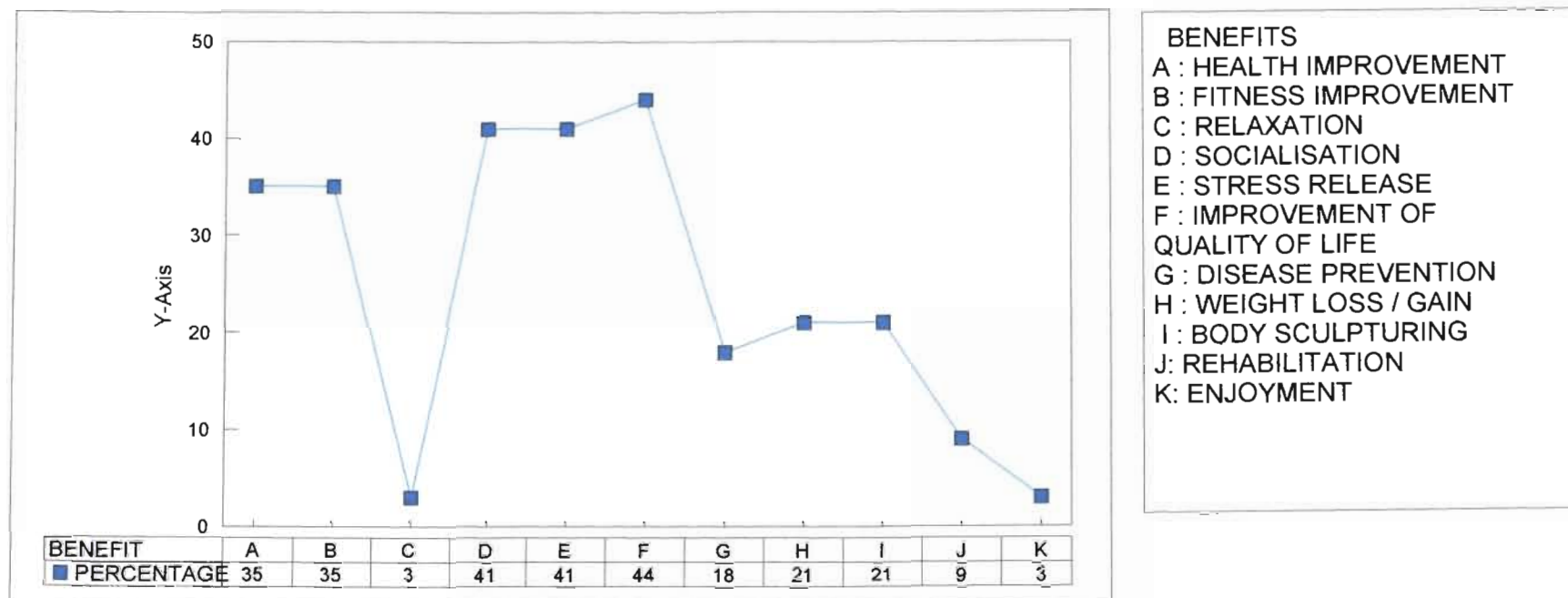


FIGURE 4.34 BENEFITS OF TRAINING FOR THE GYMNASIUM CLIENTELE

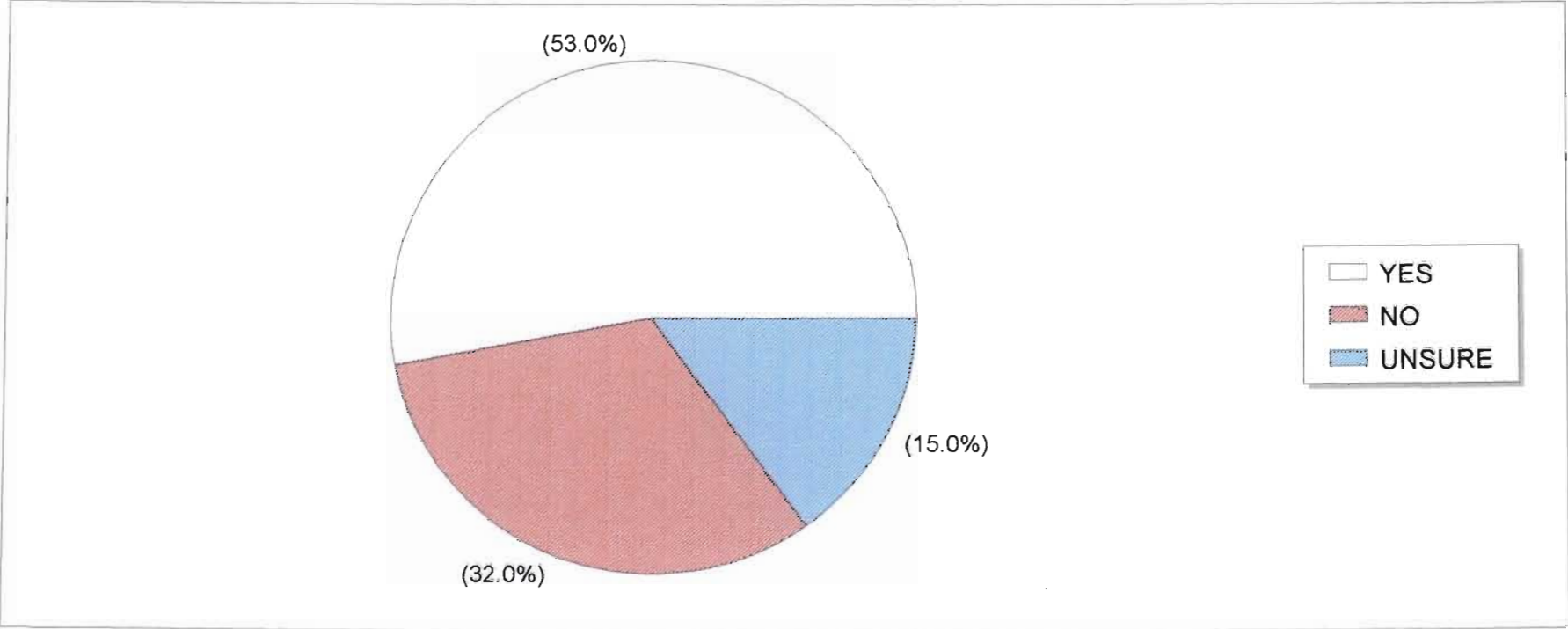


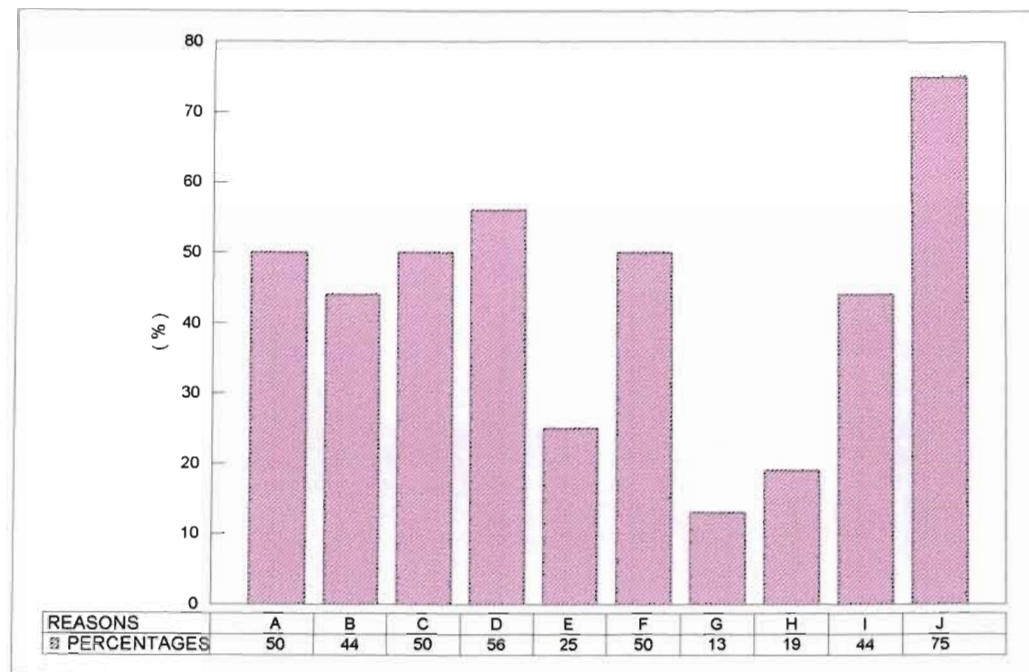
FIGURE 4.35 EFFICIENCY OF THE SOUTH AFRICAN FITNESS INDUSTRY

Ten reasons were perceived to have made the fitness industry inefficient. Seventy five percent of the aerobic instructors thought no standardisation within the industry caused inefficiency. Unqualified fitness centre managers were thought to cause inefficiency by 56 percent of the instructors. Fifty percent of the instructors thought the predominantly profit orientation of the training organisations, competition between the training organisations and unqualified teachers were other reasons for inefficiency within the industry. Too many training organisations and a lack of integration between the various levels of the industry were cited as other two reasons for inefficiency by 44% of the instructors. Twenty five per-cent of the instructors thought that exploitation of aerobic in-structors by the fitness centre owners caused inefficiency. Nineteen percent of the instructors thought that there was a need for a governing body to help the fitness industry become efficient. Egotistical teachers were thought to disrupt the teaching section of the industry. This view was held by 13% of the aerobic instructors (Figure 4.36).

4.4.2 SERVICES

The reader is referred to question 16 in the questionnaire (Appendix A), which is relevant to Figures 4.37 and 4.38.

Sixty-seven percent of the aerobic instructors thought there were inadequacies in the fitness industry. Twenty four percent thought



REASONS FOR INEFFICIENCY

- A : PROFIT THE MAIN AIM OF THE TRAINING ORGANISATION
- B : TOO MANY TRAINING ORGANISATIONS
- C : COMPETITION BETWEEN TRAINING ORGANISATIONS
- D : UNQUALIFIED MANAGERS
- E : EXPLOITATION OF INSTRUCTORS BY GYMNASIUM OWNERS
- F : UNQUALIFIED TEACHERS
- G : EGOTISTICAL TEACHERS
- H : NEED FOR A GOVERNING BODY
- I : LACK OF INTEGRATION BETWEEN THE LEVELS OF THE STRUCTURE
- J : NO STANDARDISATION

FIGURE 4.36 REASONS THAT HAVE MADE THE FITNESS INDUSTRY INEFFICIENT

there were none and 9% were unsure (Figure 4.37).

Six reasons were listed as possible causes for inadequacies in the fitness industry (Figure 4.38). Eighty-seven percent of the instructors were concerned about no standardisation of training courses or certifications in the fitness industry. Standard of training was considered by 74% of the aerobic instructors to cause inadequacies. Sixty-two percent of the instructors thought the training courses were too short. Another inadequacy recorded by 61% of the instructors was insufficient in-service training. Forty-eight percent of the instructors thought the training courses were too expensive. Aerobic instructors salaries were considered to be too low by 9% of the instructors and 4% considered the lack of infrastructure in the form of pensions, medical aids and structured vacation leave to be an inadequacy (Figure 4.38).

4.4.3 PROFESSIONAL ORGANISATIONS

The reader is referred to question 17 in the questionnaire (Appendix A), which is relevant to Figures 4.39, 4.40 and 4.41.

Sixty-five percent of the aerobic instructors belonged to a professional organisation (Figure 4.39). The majority (86%) of the aerobic instructors used the services provided by their organisations (Figure 4.40). The four services that were well used were continuing education credits (86%), training and certification

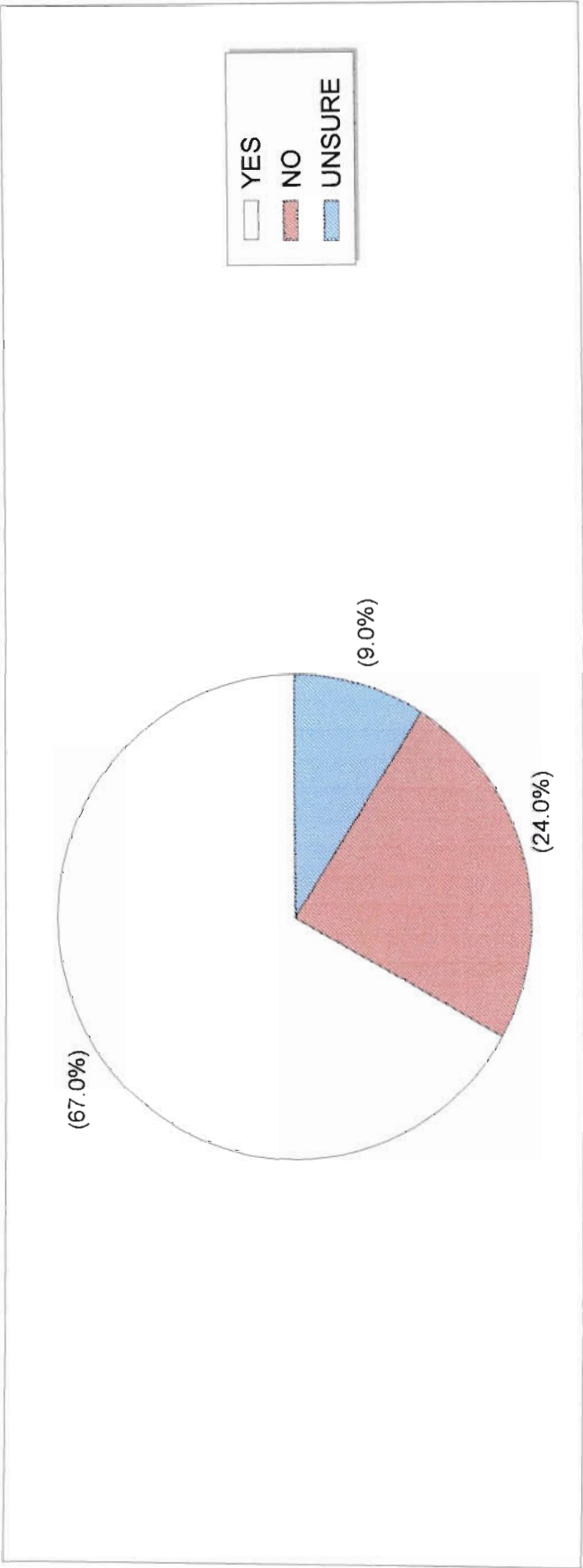
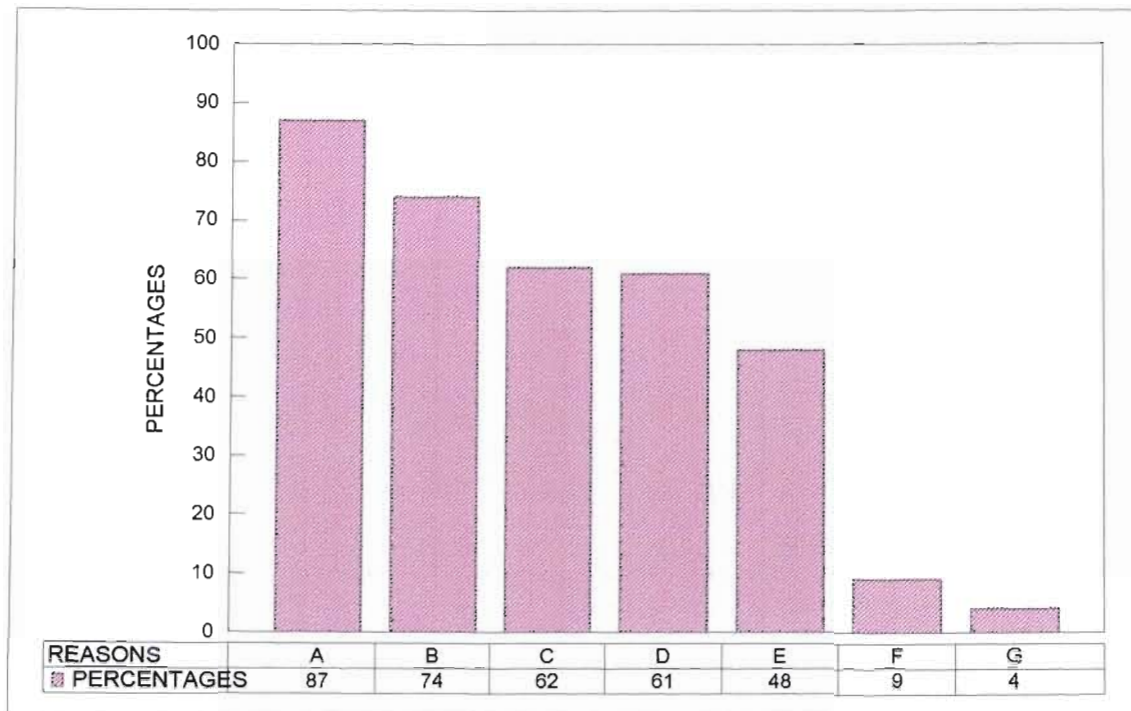


FIGURE 4.37 INADEQUACIES IN THE SERVICES PROVIDED



REASONS
A : NO STANDARDISATION OF TRAINING
B : STANDARD OF TRAINING TOO LOW
C : TRAINING COURSES TOO SHORT
D : INSUFFICIENT IN-SERVICE TRAINING
E : TRAINING COURSES TOO EXPENSIVE
F : SALARIES TOO LOW
G : NO INFRASTRUCTURE

FIGURE 4.38 REASONS FOR CONSIDERING THE FITNESS INDUSTRY INADEQUATE

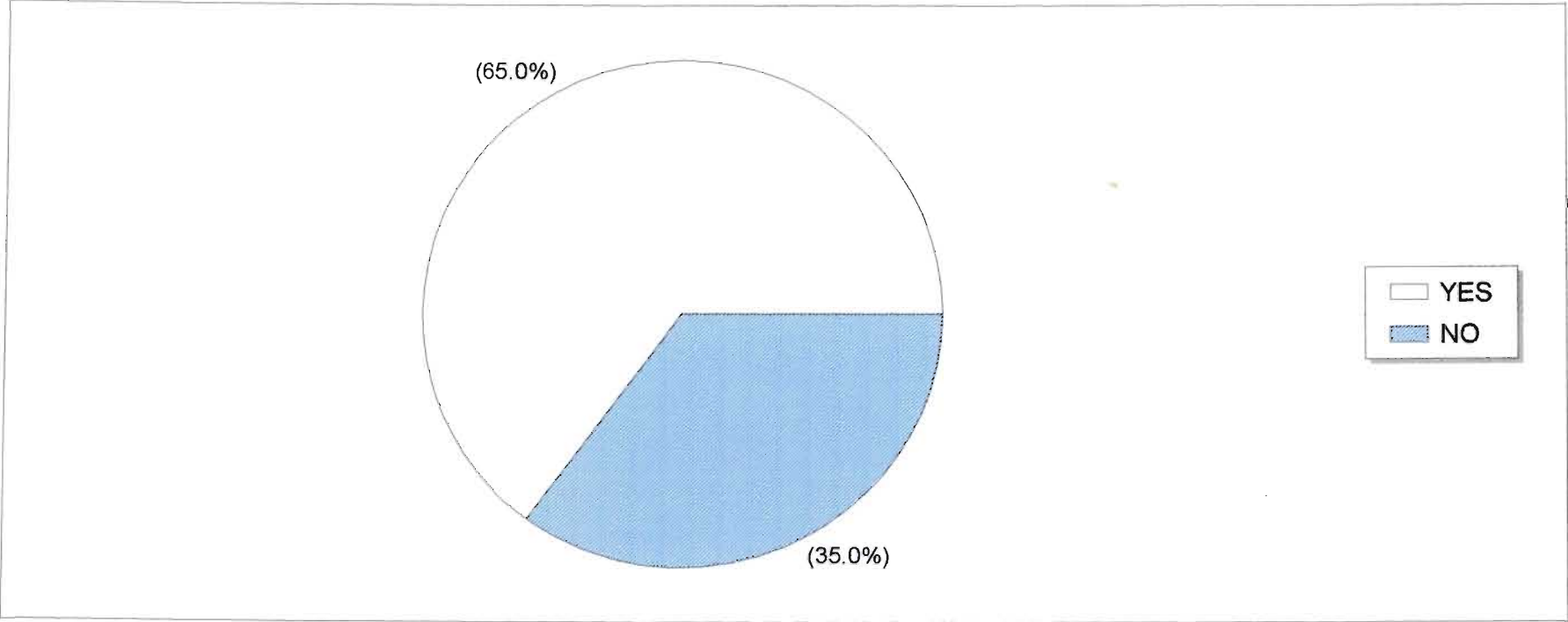


FIGURE 4.39 INCIDENCE OF MEMBERSHIP OF A PROFESSIONAL REPRESENTATIVE ORGANISATION

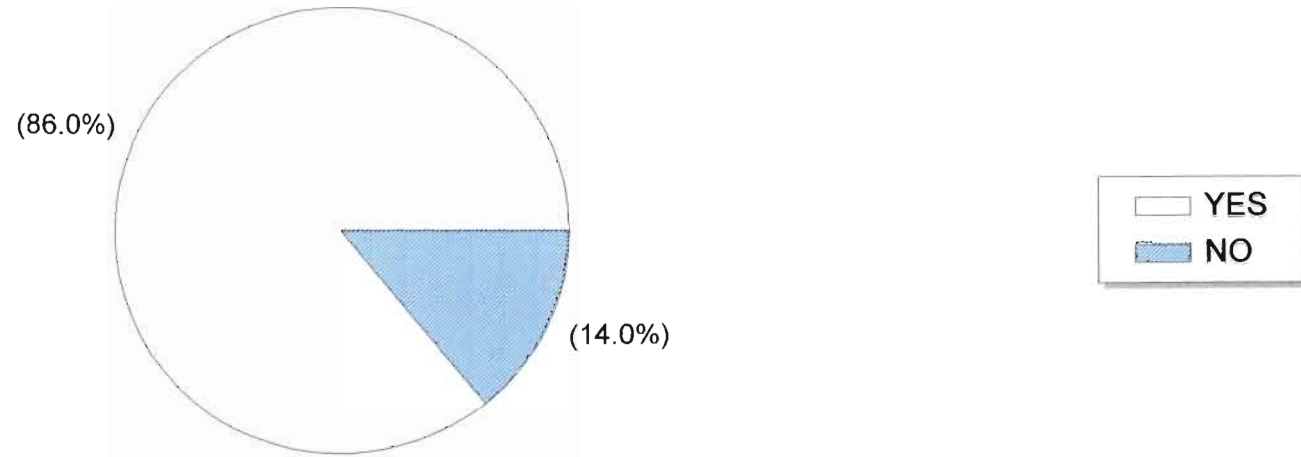


FIGURE 4.40 PERCENTAGE OF INSTRUCTORS WHO USE THE SERVICES PROVIDED BY THEIR RESPECTIVE ORGANISATIONS

(82%), workshops (77%), and conventions (59%). The other services not used so frequently were music licence/pre-recorded tapes (32%), published material (18%) and job placement (14%) (Figure 4.41).

4.4.4 NATIONAL CERTIFICATION

Question 18 in the aerobic instructor's questionnaire (Appendix A) is relevant to this topic.

Seventy-nine percent of the aerobic instructors thought it was necessary to standardise the certification that could be obtained in the fitness industry. This would mean that all candidates would write the same examinations irrespective of the training organisation that trained them. Fifteen percent of instructors were not in favour of this and 6% were unsure (Figure 4.42). Sixty-eight percent of the aerobic instructors thought that an organisation such as the Human Sciences Research Council could achieve this standardisation (Figure 4.43).

Other comments regarding national certification were: too many training organisations (56%); it should be compulsory to obtain a national certification before entering the field of aerobic instruction (56%); that there should be an integration of training/professional organisations (21%) as indicated in Figure 4.44.

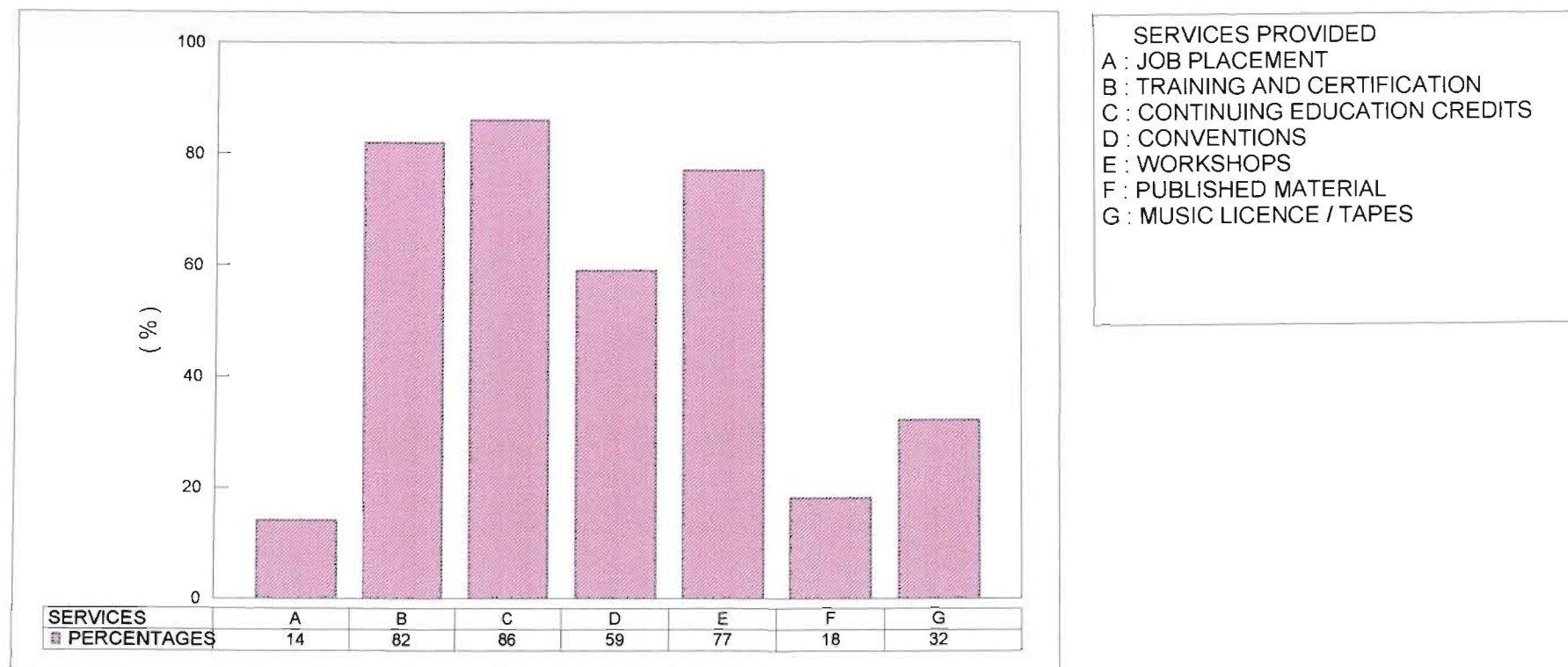


FIGURE 4.41 SERVICES PROVIDED BY THE PROFESSIONAL / REPRESENTATIVE ORGANISATIONS

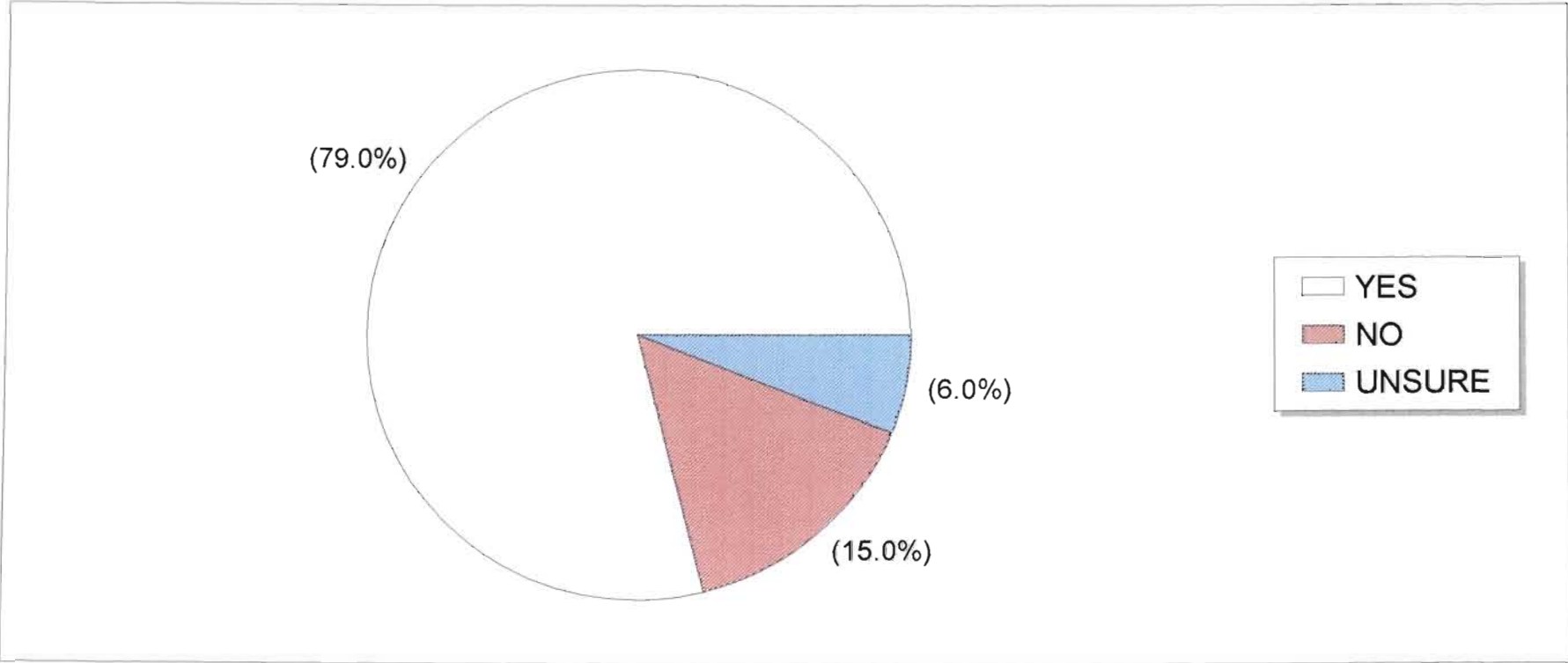


FIGURE 4.42 SUPPORT FOR STANDARDISATION OF CERTIFICATION

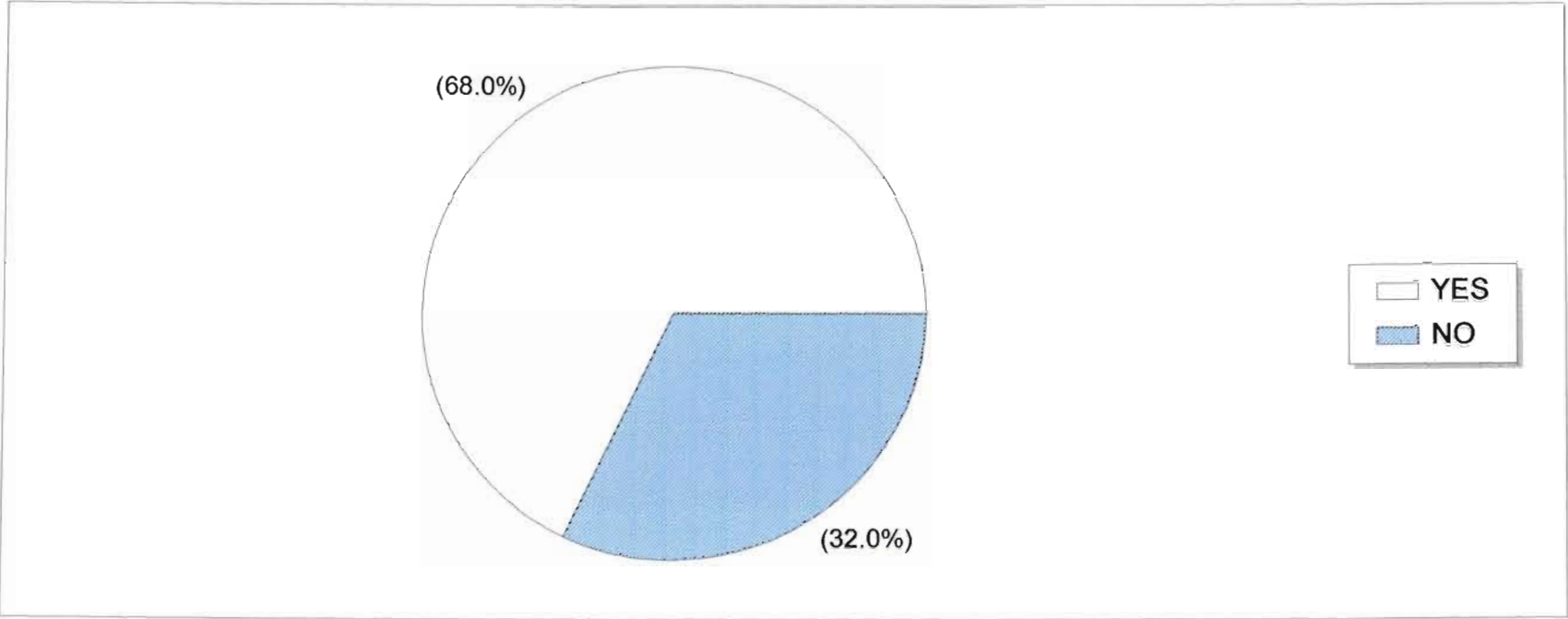
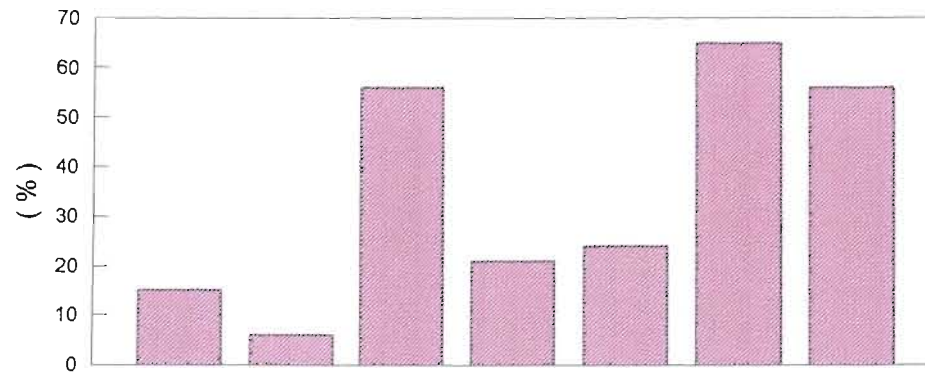


FIGURE 4.43 INSTRUCTORS WHO BELIEVE THAT A BODY SUCH AS THE HUMAN SCIENCE RESEARCH COUNCIL COULD ACHIEVE STANDARDISATION OF TRAINING



CONSENSUS ON COMMENTS
 A : NO INFRASTRUCTURE
 B : FITNESS CENTRES SHOULD BE
 STAR RATED
 C : IN ORDER TO TEACH, A NATIONAL
 QUALIFICATION MUST BE OBTAINED
 D : INTEGRATION OF PROFESSIONAL
 BODIES
 E : ADEQUATE SALARY STRUCTURE
 F : INCREASED PROFESSIONALISM
 G : TOO MANY TRAINING ORGANISATIONS

FIGURE 4.44 CONSENSUS ON OTHER COMMENTS MADE BY THE INSTRUCTORS

Other general comments included a need for increased professionalism (24%), an improved and adequate salary structure (21%), an improved infrastructure for the industry (15%) and that fitness centres should be star rated (6%).

4.5 SUMMARY OF AEROBIC INSTRUCTORS' QUESTIONNAIRE

It was noted that with the exception of two instructors, all instructors had attempted to obtain certification in aerobic instruction.

A wide variety of training institutions/organisations were used by the aerobic instructors. Sixteen percent of the instructors perceived their training to be unsatisfactory, 32% thought their training was satisfactory with reservations, 32% perceived their training to be satisfactory in all respects and 19% evaluated their training to be good.

The length of experience in aerobic instruction ranged from one to thirty years. It was found that 67,65% of the instructors had a total period of teaching aerobics of eight years and less.

The number of classes taught per week ranged from 2 to 13. The mean number of classes taught per week was 8. Forty-four percent of the instructors taught 10 or more classes per week.

Sixty-eight percent of the instructors were dissatisfied with their remuneration which ranged from R30.00 to R100.00. There was a mean

remuneration of R45.29.

Fifty-nine percent of the instructors had another form of employment and 65% of the instructors who did have another form of employment used this to supplement their aerobic instructor's income. Four of the other forms of employment were related to the fitness industry. They were fitness centre managers, weight training instructor/consultant and a personal trainer.

The most used movement areas were low-high impact aerobics/floor work, low impact aerobics/floor work, stretch and tone, step/floor work, aerobics/hand weights, high impact aerobics/floor work, step/aerobics and step/hand weights.

The majority of the instructors (82,35%) were not involved in weight training programmes.

Sixty-eight percent of the instructors did not respond to the question on teaching approaches presumable because they did not know what teaching approaches they used. Ninety-one percent of the instructors who did respond used the command style which is a strongly teacher-centred approach.

Facilities tended to be satisfactory although deficiencies were apparent. The apparatus available for aerobics, floor work, step and aerobic hand weights was evaluated as good. Aerobic bands and apparatus for aquacise was considered insufficient. There was not equipment available for yoga.

The majority (85,29%) of the instructors used the lesson format of a warm up/stretch, aerobic phase, floor work and cool down/stretch. Fewer (14,71%) used the lesson format of warm-up/stretch, aerobic phase, floor work, hand weights and cool down/stretch. Most instructors changed their lesson format to serve the specific needs of the class.

Evaluation did take place to a greater or lesser degree. The aspects that received the most attention were body mass, cardiovascular endurance and correct execution of movement. A minority of aerobic instructors kept records on all of the clients, some instructors kept records on some of the aerobic clientele while others kept no records at all.

Some aerobic instructors (68%) felt equipped to service the aerobic clientele, 23% did not and 9% were unsure about their ability. Thirty-two percent of the instructors felt that further training would help them feel more equipped to serve the aerobic clients but felt that high costs of training was a deterrent. All instructors felt that there was a need for further training.

The aerobic instructors felt that the aerobic clients benefitted from aerobic participation by improving their quality of life, release of stress, socialisation, health and fitness improvement, weight loss and gain, body sculpturing and enjoyment and relaxation.

Thirty-two percent of the aerobic instructors thought that the structure of the fitness industry was an inefficient one. Reasons reported for this inefficiency was no standardisation within the industry, unqualified fitness

centre managers, profit orientation of the training organisations, unqualified teachers, lack of integration between the various levels of the industry, exploitation of the aerobic instructors by the fitness centre owners and egotistical teachers.

Sixty-seven percent of the aerobic instructors thought there were inadequacies in the fitness industry. The reasons given for these inadequacies were no standardisation of training courses or certifications in the fitness industry, the low standard of training, short and expensive training courses, insufficient in-service training, low salaries and the lack of an infrastructure.

Sixty-five percent of the aerobic instructors belonged to a professional organisation and regularly used the services provided by their organisations. The four services that were well used were continuing education credits, training and certification, workshops and conventions.

Sixty-nine percent of the aerobic instructors thought it was necessary to standardise the certification that could be obtained in the fitness industry and 68% thought that an organisation such as the Human Sciences Research Council could achieve this standardisation.

There were three other comments regarding national certification that were important. The selection of a training institution was confusing as there were too many. It should be compulsory to obtain a national certification before entering the field of aerobic instruction and there should be an integration of training/professional organisations.

4.6 THE LIFE-WORLD OF THE AEROBIC CLIENTELE

4.6.1 GENDER

The total number of respondents was 162 of whom 148 (91%) were female and 14 (9%) were male (Figure 4.45).

4.6.2 AGE

The age of the clients ranged from 14-58 years old, 14 (9%) of the clients were 15 years and younger, 60 (37%) were between 16-25 years old, 25 (25%) were aged between 21-30 years old, 11 (7%) were between the ages of 31 and 35 years old, 14 (9%) were between 36 - 40 years old, 13 (8%) were aged between 41-45 years old and 12 (8%) of the respondents were over the age of 46 years old (Figure 4.4.6).

4.6.3 MARITAL STATUS

One hundred and sixty respondents (72%) were single, 38 (23%) were married and eight (5%) were divorced (Figure 4.47).

4.6.4 OCCUPATION

It can be noted in Figure 4.48, 48 (30%) of the respondents were scholars and 31 (19%) were students. Twenty (12%) respondents

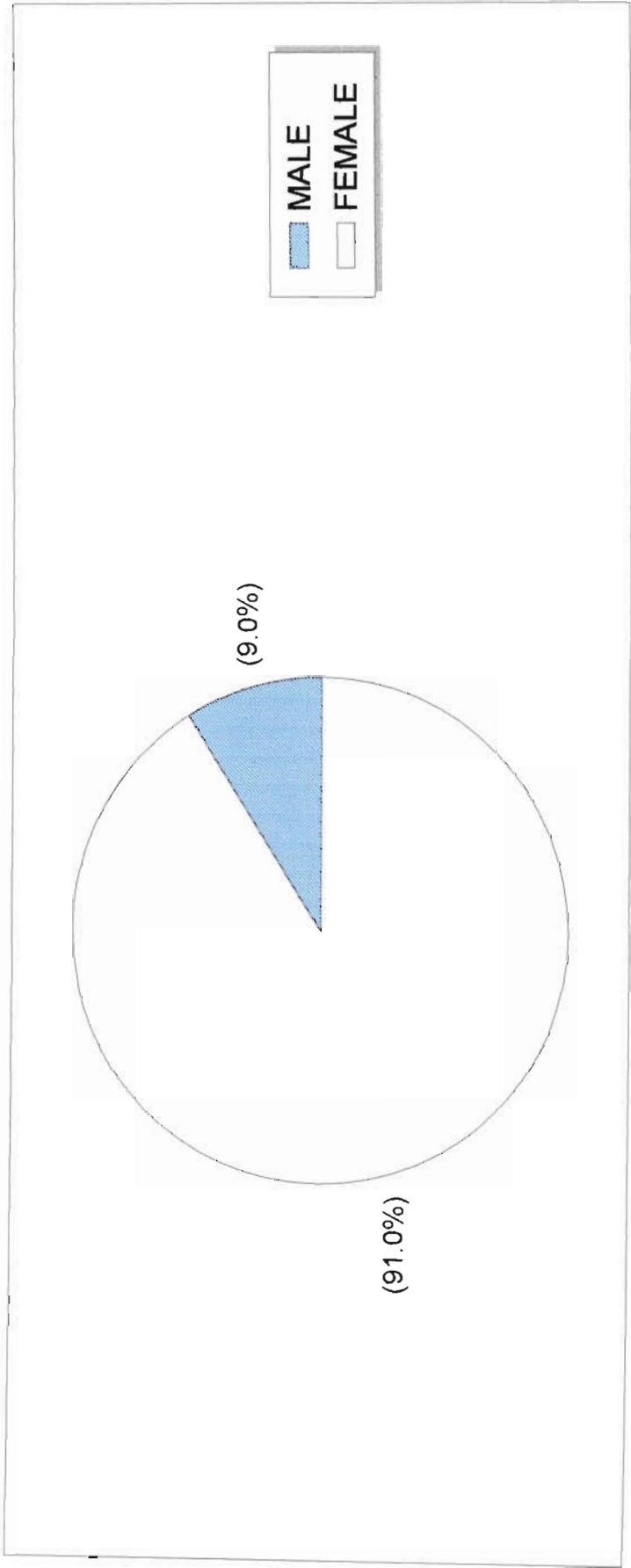


FIGURE 4.45 GENDER OF THE AEROBIC CLIENTELE

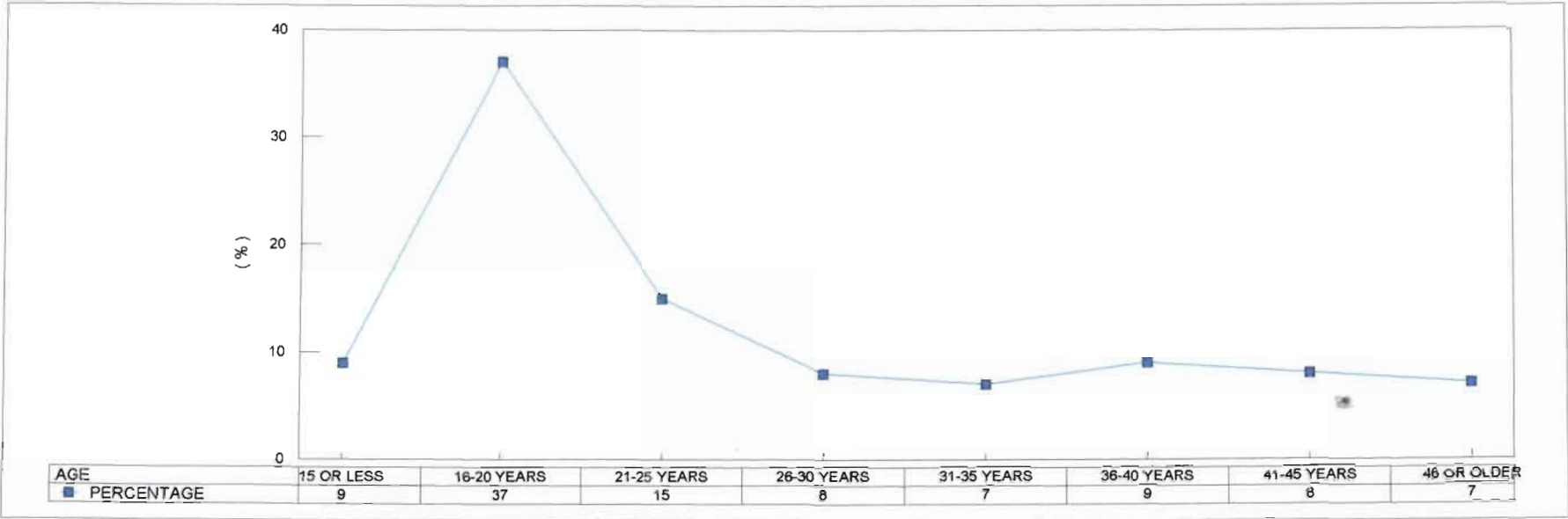


FIGURE 4.46 AGE DISTRIBUTION OF THE AEROBIC CLIENTELE

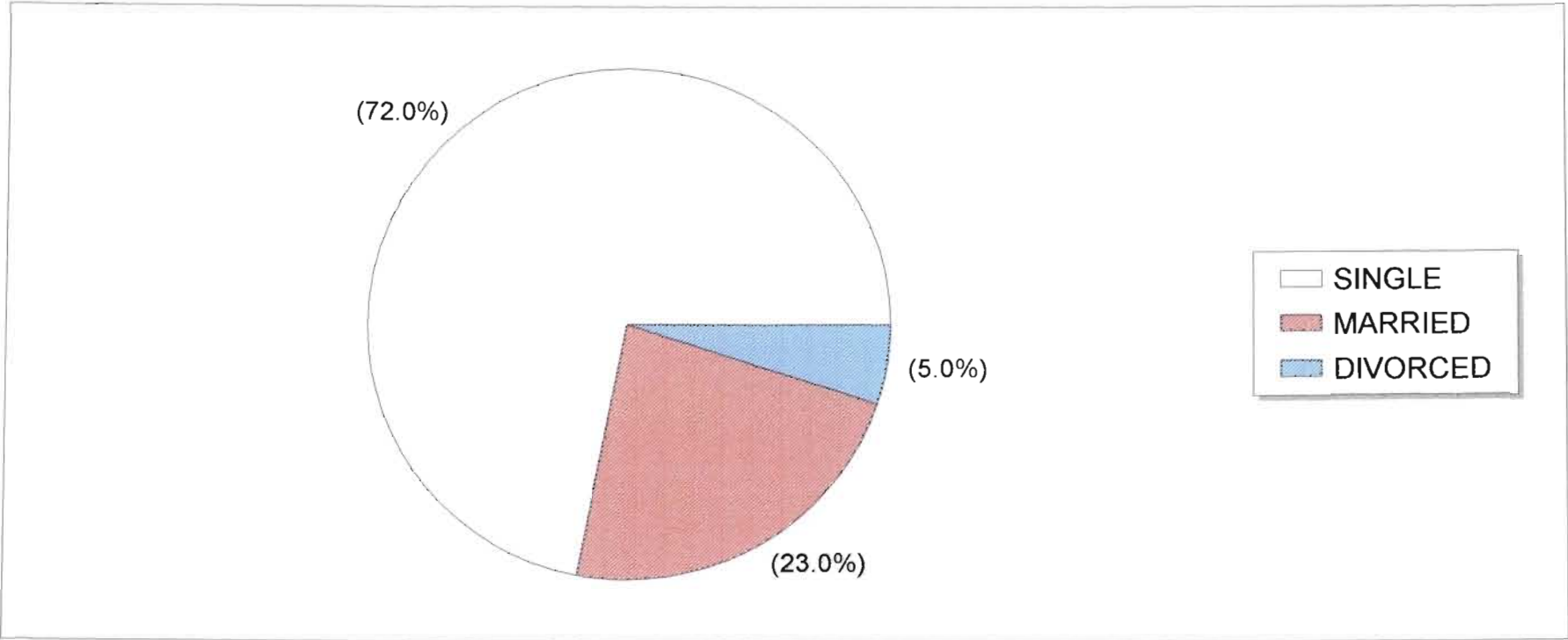


FIGURE 4.47 MARITAL STATUS OF THE AEROBIC CLIENTELE

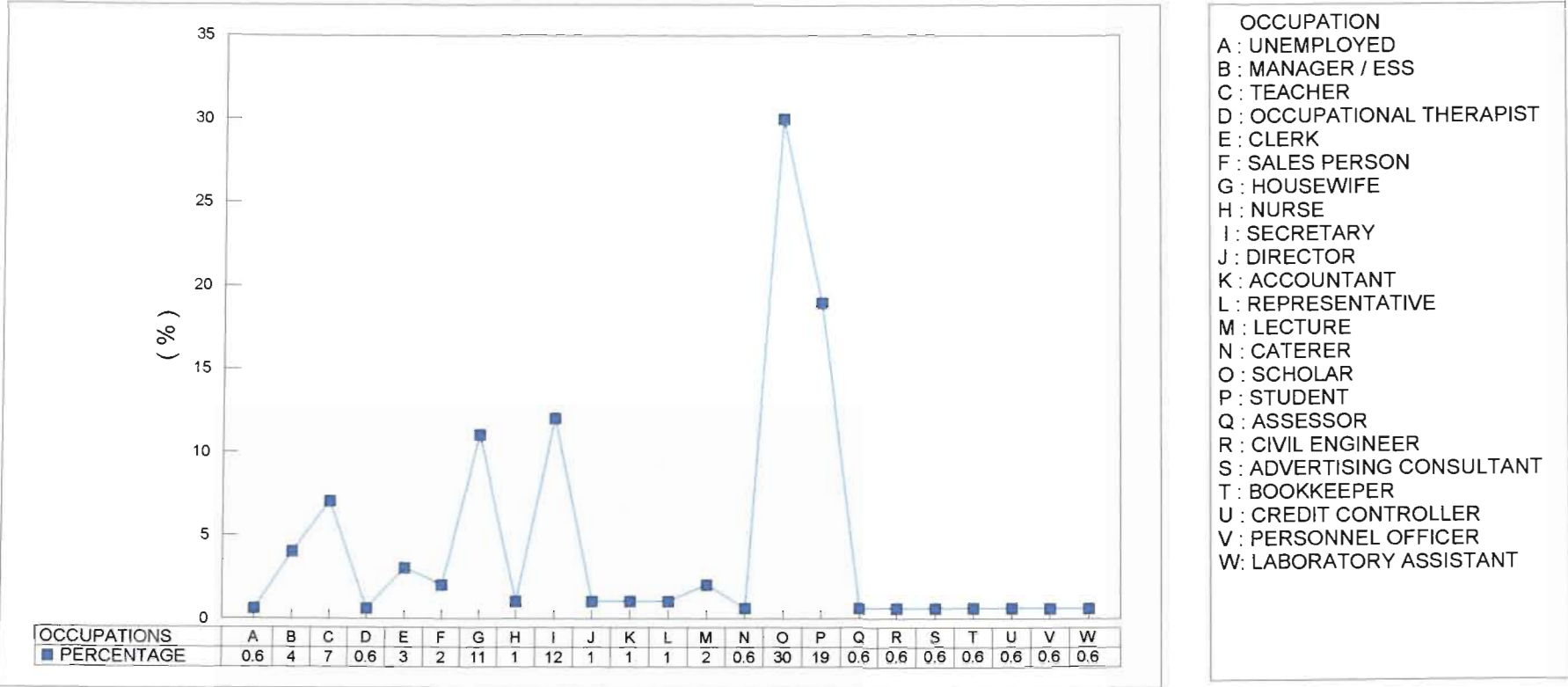


FIGURE 4.48 OCCUPATIONS OF THE AEROBIC CLIENTELE

were secretaries and 18 (11%) were housewives. The other occupations were less well represented.

The tabulation of occupations revealed that 64 (39,51%) of the respondents were employed while 98 ((60,49%) were not. Of the economically non-active respondents 79 (80,61%) were scholars and students and 19 were adults (19,39%) who were employed.

Of the 64 (39,51%) respondents who were economically employed, 28 were in clerical positions, 22 had professional careers, 9 were in managerial positions and 5 were in sales.

4.7 AEROBIC INVOLVEMENT OF CLIENTELE

4.7.1 CERTIFICATIONS IN AEROBIC INSTRUCTION

The reader is referred to question 2 in the clientele's questionnaire (Appendix B).

The majority of the respondents (91%) felt that it was very important for the aerobic instructor to be qualified in aerobic instruction (Figure 4.49). There were 7 reasons cited for preferring qualified instructors. Clientele injury prevention was listed by 66% of the respondents. Forty-three percent thought that qualified instructors would enforce correct techniques during the class. Thirty-six percent of the respondents thought that qualified instructors would

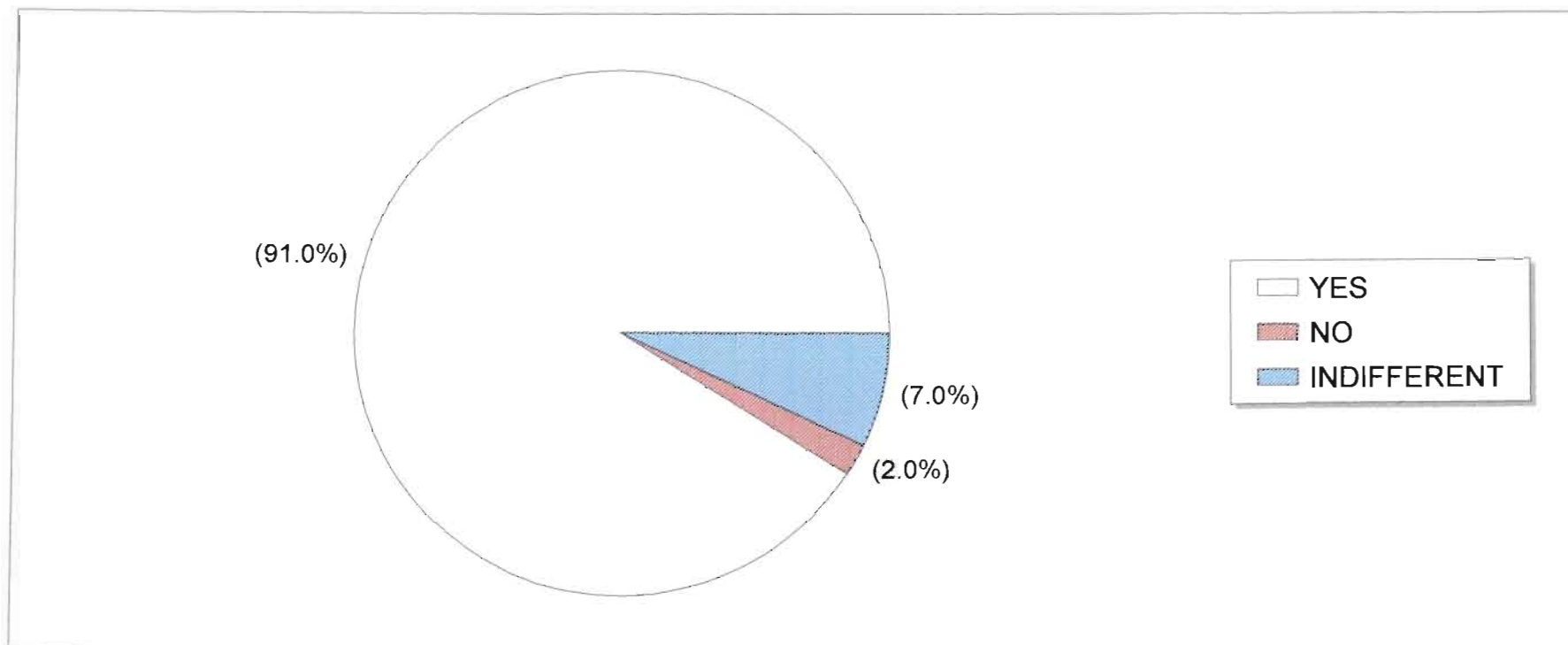


FIGURE 4.49 AEROBIC CLIENTELE'S OPINION ABOUT IMPORTANCE OF QUALIFICATIONS / CERTIFICATIONS IN AEROBIC INSTRUCTION

give a well structured aerobic class. Twenty-five percent of the respondents felt that qualified instructors would be capable of obtaining optimum benefit from exercise which would be to the advantage of the aerobic clientele. Twenty-two percent of the respondents were of the opinion that a qualified instructor would be able to make informed corrections during the class. Informed advice (20%) was another reason given for preferring qualified instructors. It was also felt that qualified instructors would use correct and effective teaching methods. This was the opinion of 16% of the respondents (Figure 4.50).

4.7.2 CLASS ATTENDANCE

Question 3 in the aerobic clientele's questionnaire is pertinent to this topic.

The number of classes attended per week by the aerobic clientele ranged from 1 to 12. The majority (94%) of the clients attended 2 to 6 classes per week (Figure 4.51).

4.7.3 SUPPLEMENTATION OF AEROBIC PROGRAMME

One hundred and twenty one (70%) of the aerobic clientele participated in other forms of exercise (Figure 4.52).

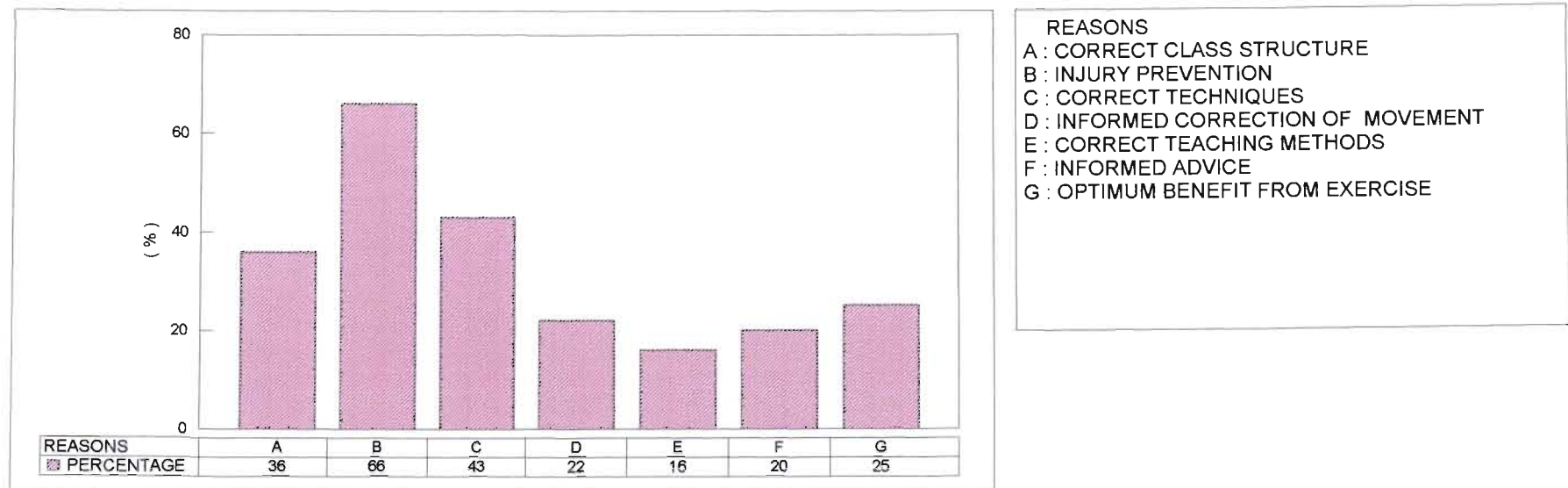


FIGURE 4.50 REASONS FOR PREFERRING QUALIFIED AEROBIC INSTRUCTORS

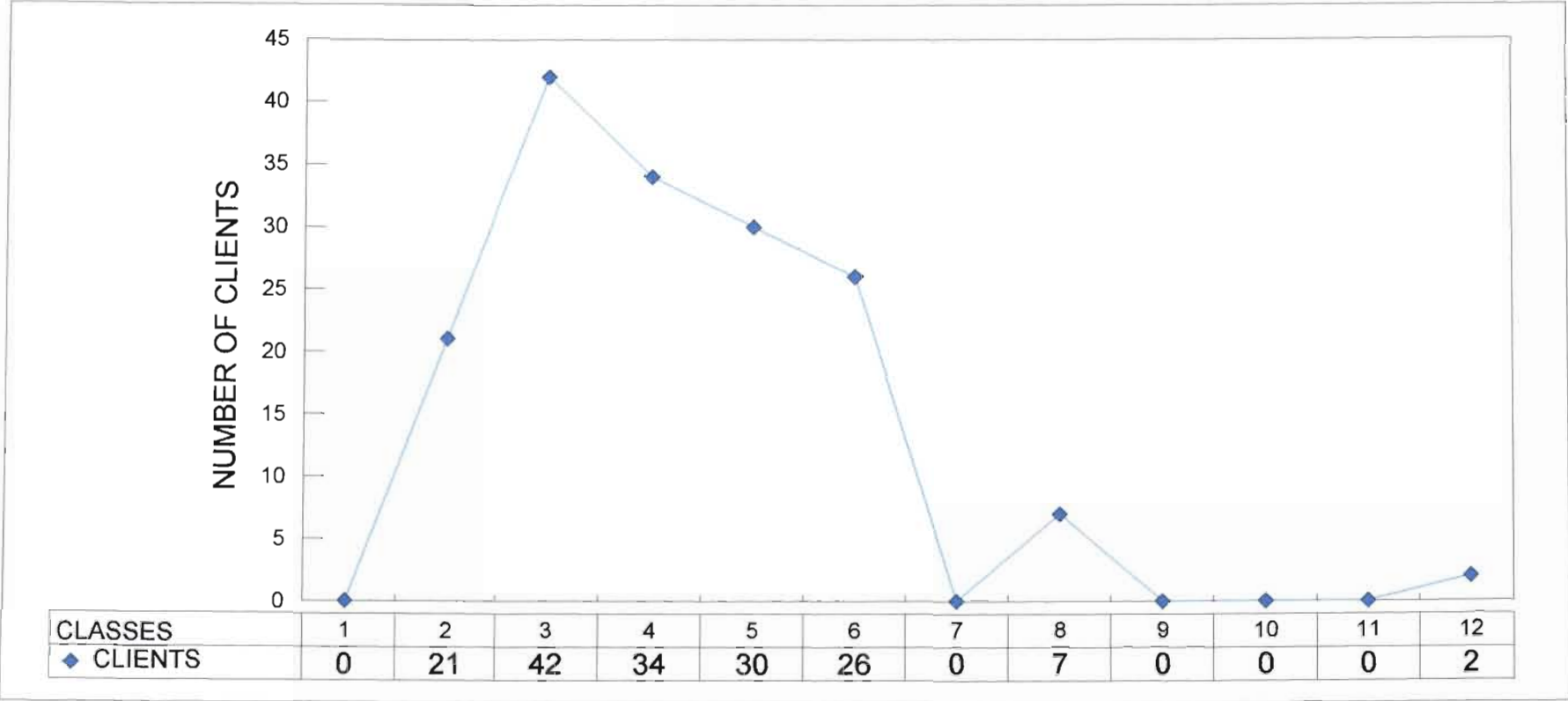


FIGURE 4.51 NUMBER OF AEROBIC CLASSES ATTENDED PER WEEK

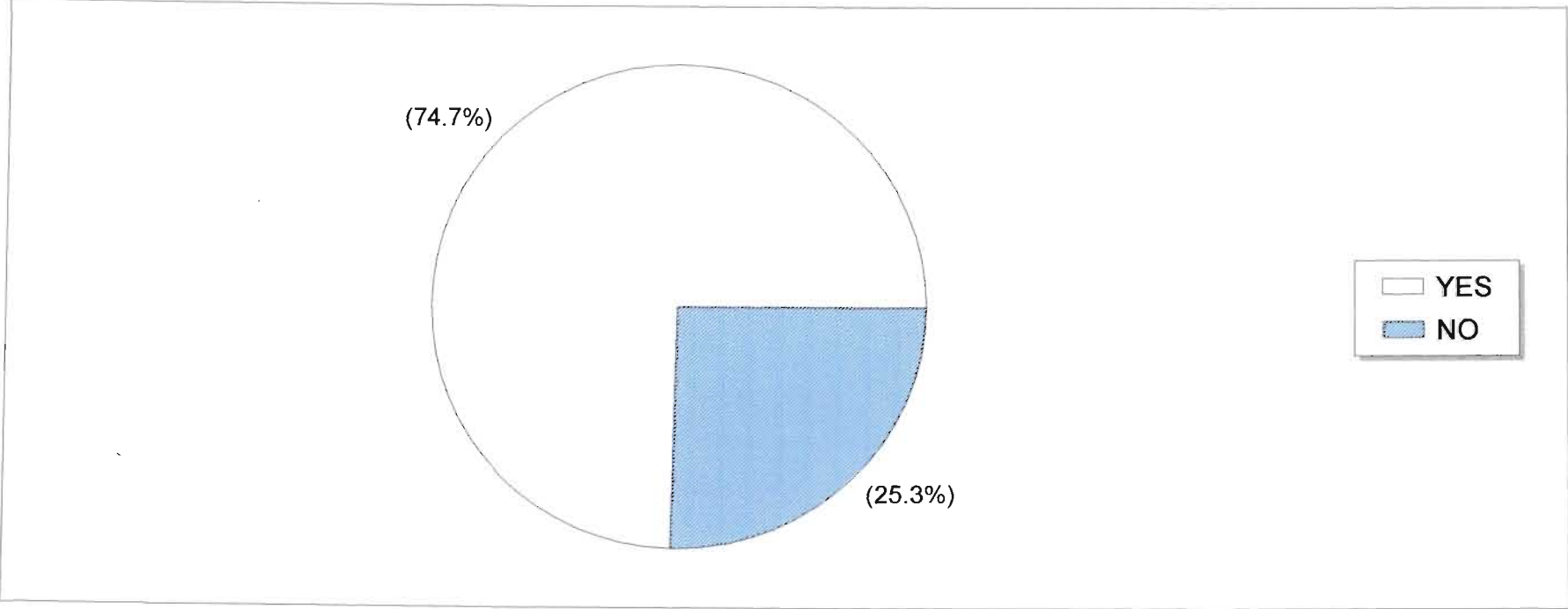


FIGURE 4.52 CLIENTS WHO PARTICIPATE IN OTHER FORMS OF PHYSICAL ACTIVITY

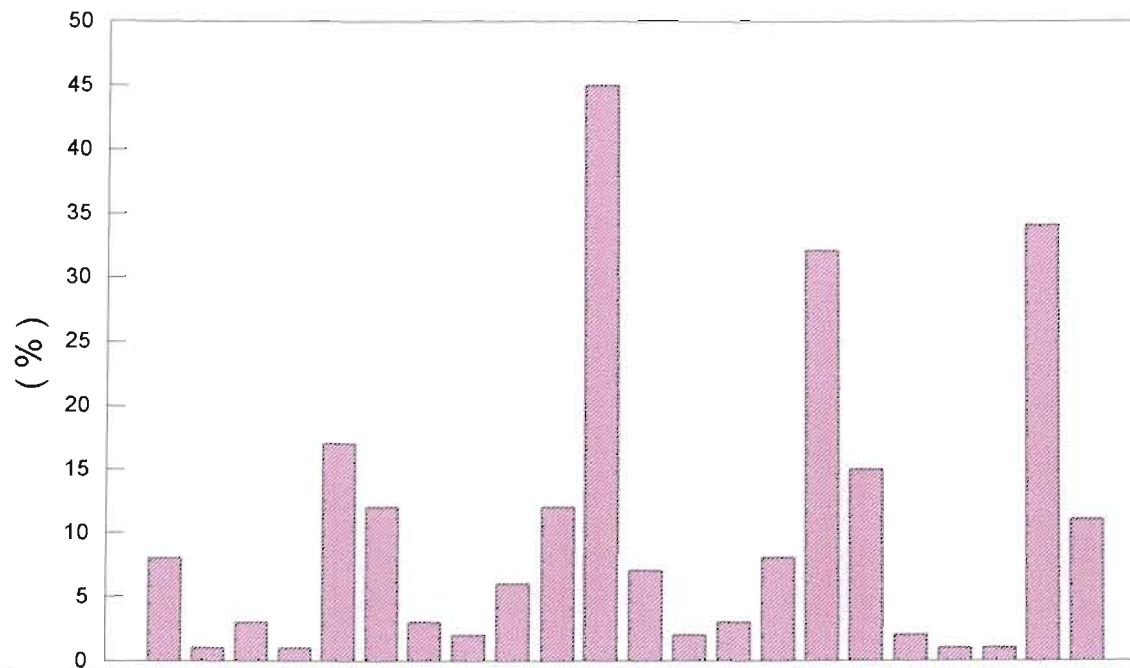
4.7.4 OTHER FORMS OF PHYSICAL ACTIVITY USED BY THE AEROBIC CLIENTELE

Twenty-two other forms of physical activity were used by the aerobic clientele. Jogging (45%) was the most used form of physical activity, followed by weight training (34%), swimming (32%) and cycling (17%). All of these forms of physical activity can be done at most of the fitness centres, leading to the conclusion that a fair amount of cross training is taking place.

It was noted that 30% of the clientele were scholars, consequently there was a fair range of school related extra/mural activities present in the other forms of physical activity used (Figure 4.53).

4.7.5 BENEFITS DERIVED FORM AEROBIC PARTICIPATION

One hundred and ten (91%) of the aerobic clientele reported that their aerobic participation was beneficial for the other forms of exercise they participated in (Figure 4.54). Seven other benefits were cited. The most common benefit recorded was the maintenance and promotion of health and physical fitness (60%). Mental well being was recorded by 28% of the clientele, stress release by 20% of the clientele, enjoyment and relaxation by 18%, socialisation by 12% and 7% of the aerobic clientele reported that weight loss and weight maintenance was another benefit (Figure 4.55).



OTHER ACTIVITIES
 A : ATHLETICS
 B : ACTION CRICKET
 C : BADMINTON
 D : CANOEING
 E : CYCLING
 F : DANCING
 G : FOOTBALL
 H : GYMNASTICS
 I : ACTING
 J : HOCKEY
 K : JOGGING
 L : NETBALL
 M : ROLLERBLADING
 N : SNORKELLING
 O : SQUASH
 P : SWIMMING
 Q : TENNIS
 R : TENPIN BOWLING
 S : VOLLEYBALL
 T : WATER-SKIING
 U : WEIGHT TRAINING
 V : WALKING

FIGURE 4.53 OTHER FORMS OF PHYSICAL ACTIVITY BY THE AEROBIC CLIENTELE

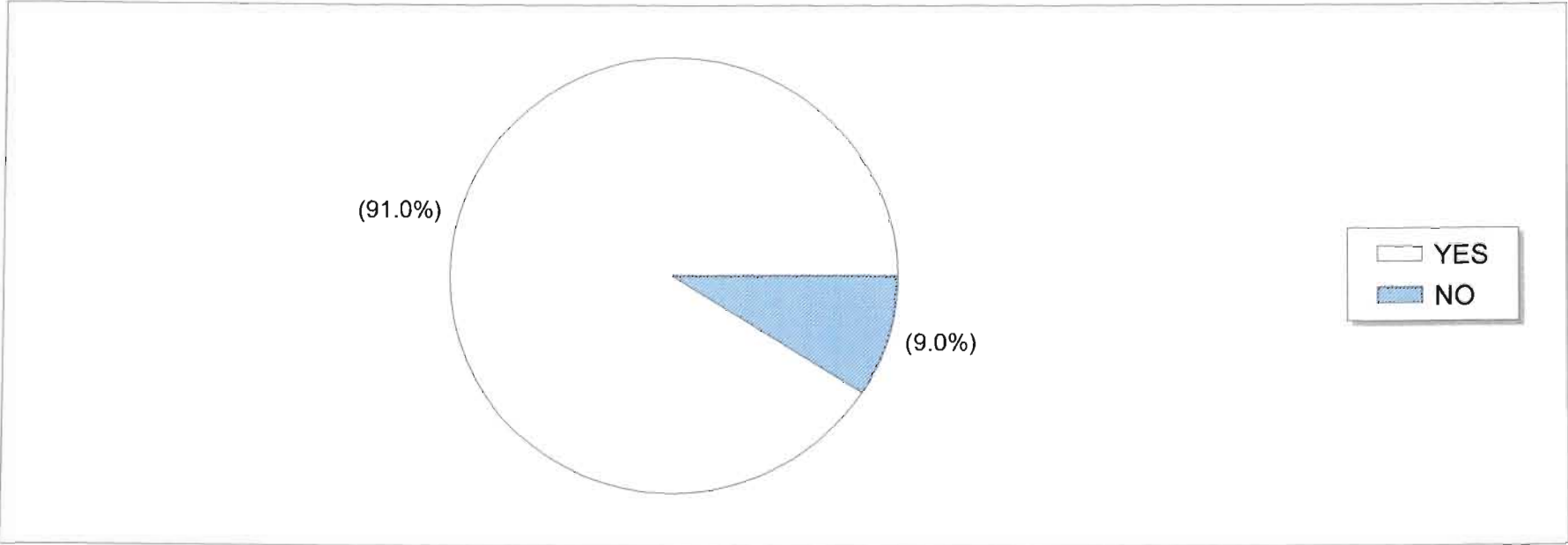
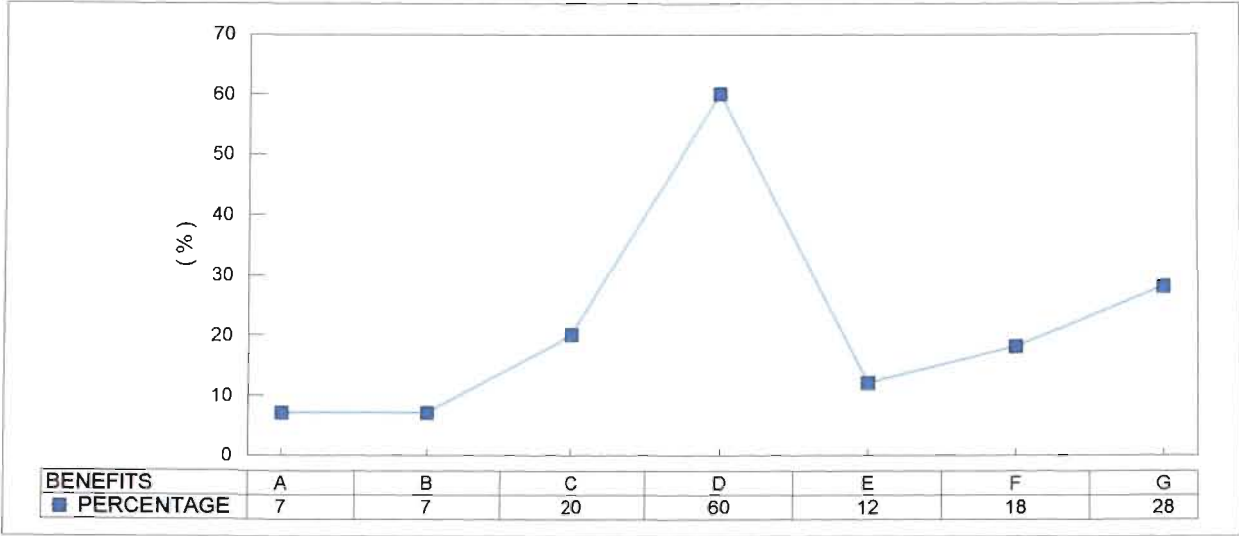


FIGURE 4.54 AEROBIC CLIENTELE WHO FOUND AEROBIC PARTICIPATION BENEFICIAL FOR OTHER FORMS OF PHYSICAL ACTIVITY



BENEFITS
A : WEIGHT LOSS
B : WEIGHT CONTROL
C : STRESS RELEASE
D : HEALTH AND PHYSICAL FITNESS
E : SOCIALISATION
F : ENJOYMENT AND RECREATION
G : MENTAL WELL-BEING

FIGURE 4.55 BENEFITS DERIVED FROM AEROBIC PARTICIPATION

4.7.6 THE DESIRED TIME AND LENGTH OF AEROBIC CLASSES

Evening classes (59% of the clientele) proved to be the most popular, followed by afternoon classes (40%), then morning (18%) and lunch time (5%) classes (Figure 4.56).

One hundred and thirty-two clients (81%) preferred a one hour class, 22 (14%) opted for a 45 minute class as their preference, 5 (3%) preferred a two hour class and three clients (2%) preferred a one and a half hour class (Figure 4.57). One hundred and thirty seven (85%) reported that their preferences were catered for by the fitness centre they belonged to (Figure 4.58).

4.7.7 CLASSES PREFERRED BY THE AEROBIC CLIENTELE

The reader is referred to question 4 in the questionnaire (Appendix B).

Five types of classes were reported to be preferred by more than 50% of the aerobic clientele. A step and floor work class was preferred by 119 (73%) of the aerobic clientele, 91 (56%) clients listed an aerobics and floor work class as desirable, 87 (54%) enjoyed a high impact aerobics and floor work class, 85 (52%) reported to enjoy a low-high impact and floor work class, 84 (52%) aerobic clientele preferred step and aerobic workout (Figure 4.59).

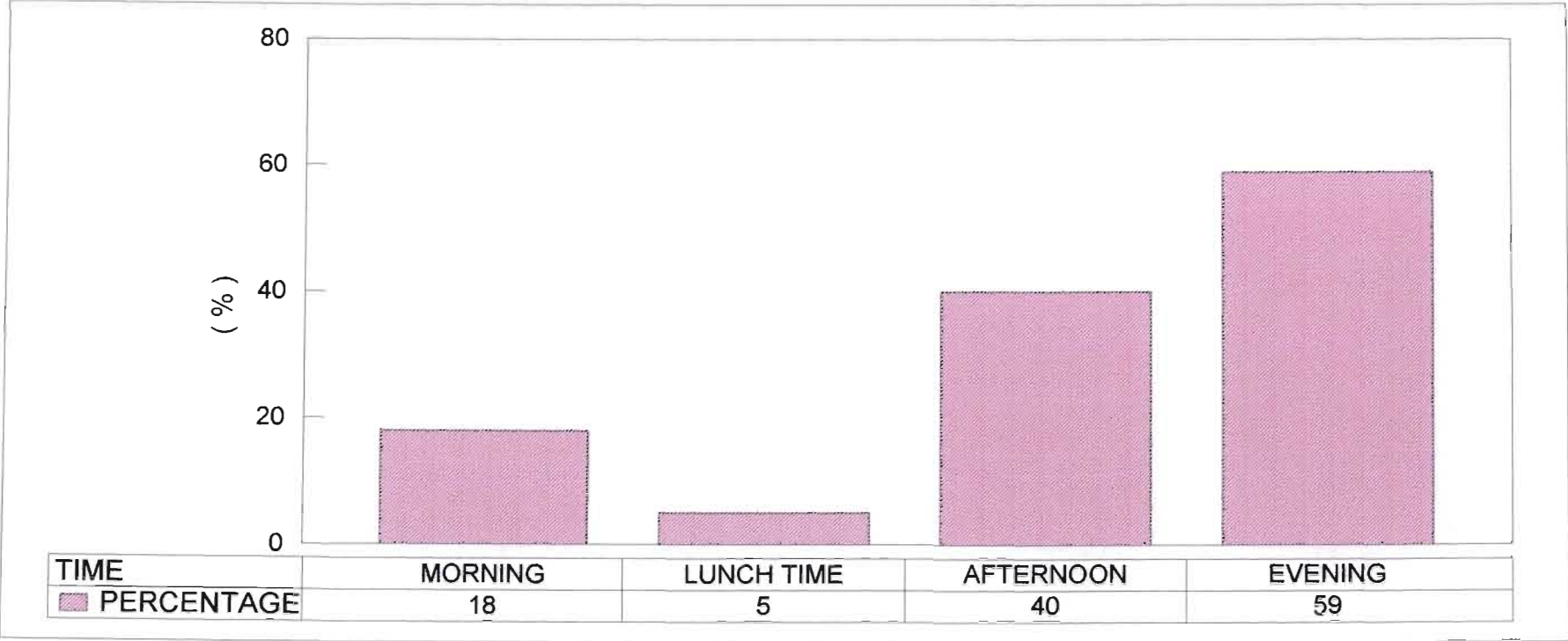


FIGURE 4.56 DESIRED TIME FOR PARTICIPATION IN AEROBIC CLASSES

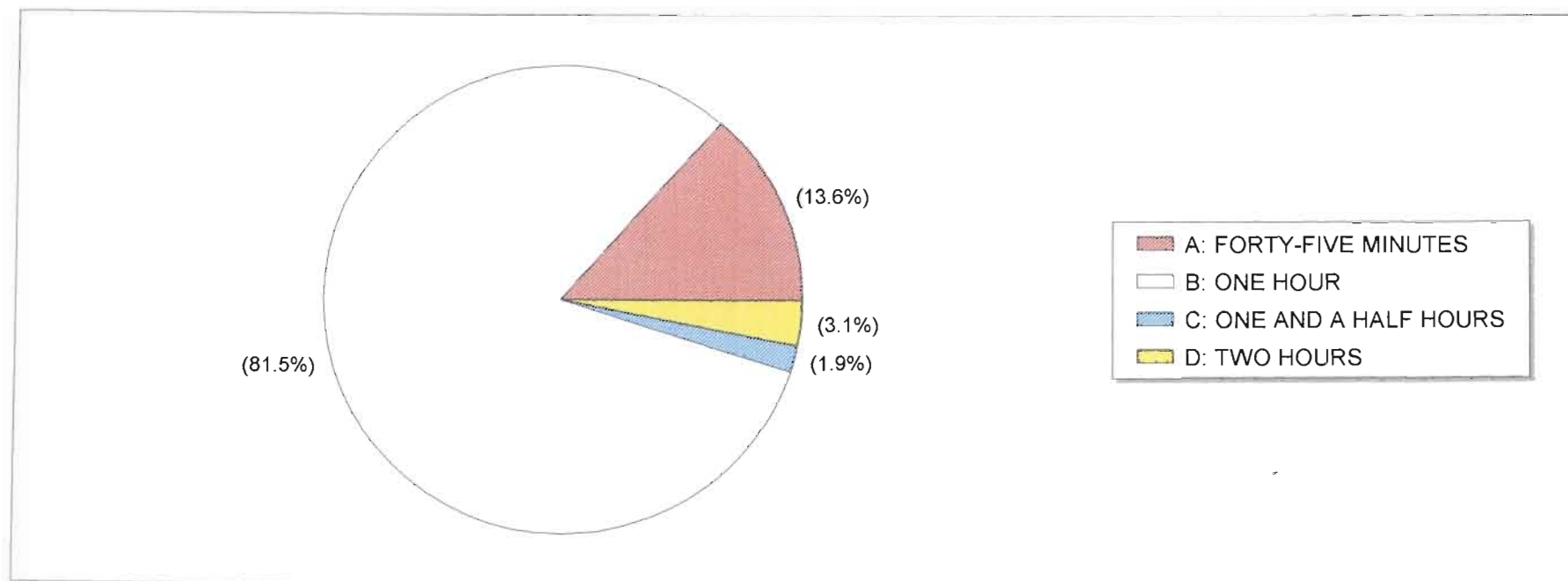


FIGURE 4.57 DESIRED LENGTH OF AEROBIC CLASSES

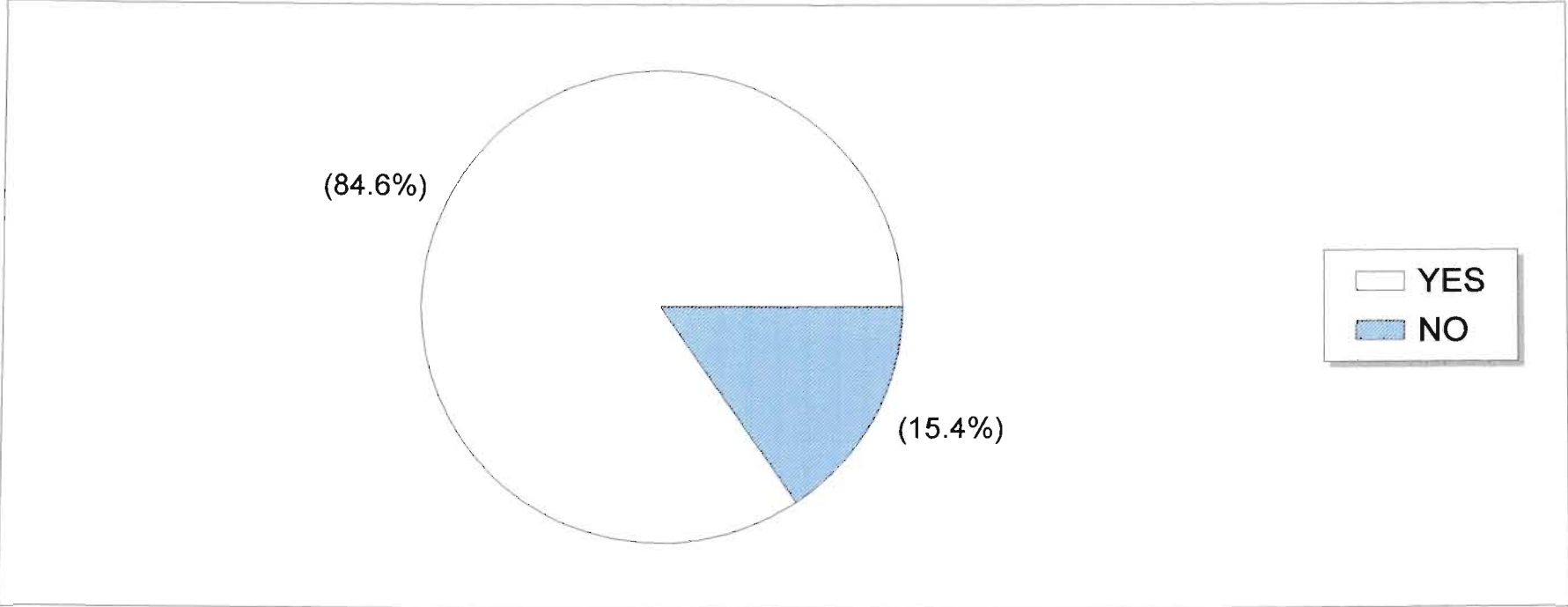


FIGURE 4.58 AVAILABILITY OF PREFERRED TIME FOR AEROBIC CLASS

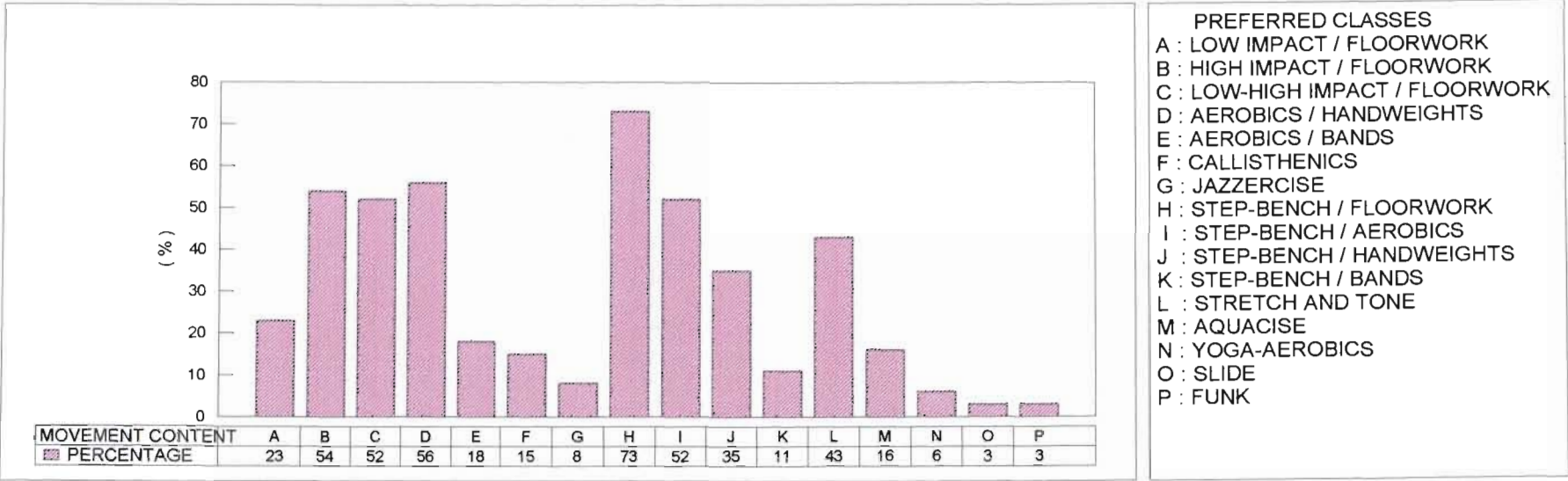


FIGURE 4.59 CLASSES PREFERRED BY THE AEROBIC CLIENTELE

It was noted that the availability of the clientele's preferences regarding different types of aerobic classes varied. Sixty-one (38%) of the clients reported that all the classes they preferred were available at the fitness centres they belong to. Sixty-eight (42%) of the aerobic clients felt that most of their choices were offered while 33 (20%) reported that only a few of their preferences were available (Figure 4.60).

4.8 AEROBIC INSTRUCTORS

Question 5 in the aerobic clientele's questionnaire (Appendix B) refers to this topic.

4.8.1 PREFERENCE REGARDING PERMANENT AEROBIC INSTRUCTION

Eighty-three (51%) of the aerobic clientele felt that they would like their instructors to be permanently based at the fitness centre they belong to. Sixty-six (41%) of the clients were indifferent while 13 thought that the instructors should teach on a free-lance basis (Figure 4.61).

4.8.2 PERSONAL QUALITIES OF AEROBIC INSTRUCTORS

The qualities, in order of preference, that the aerobic clientele would like to see in their instructors were enthusiasm for the work

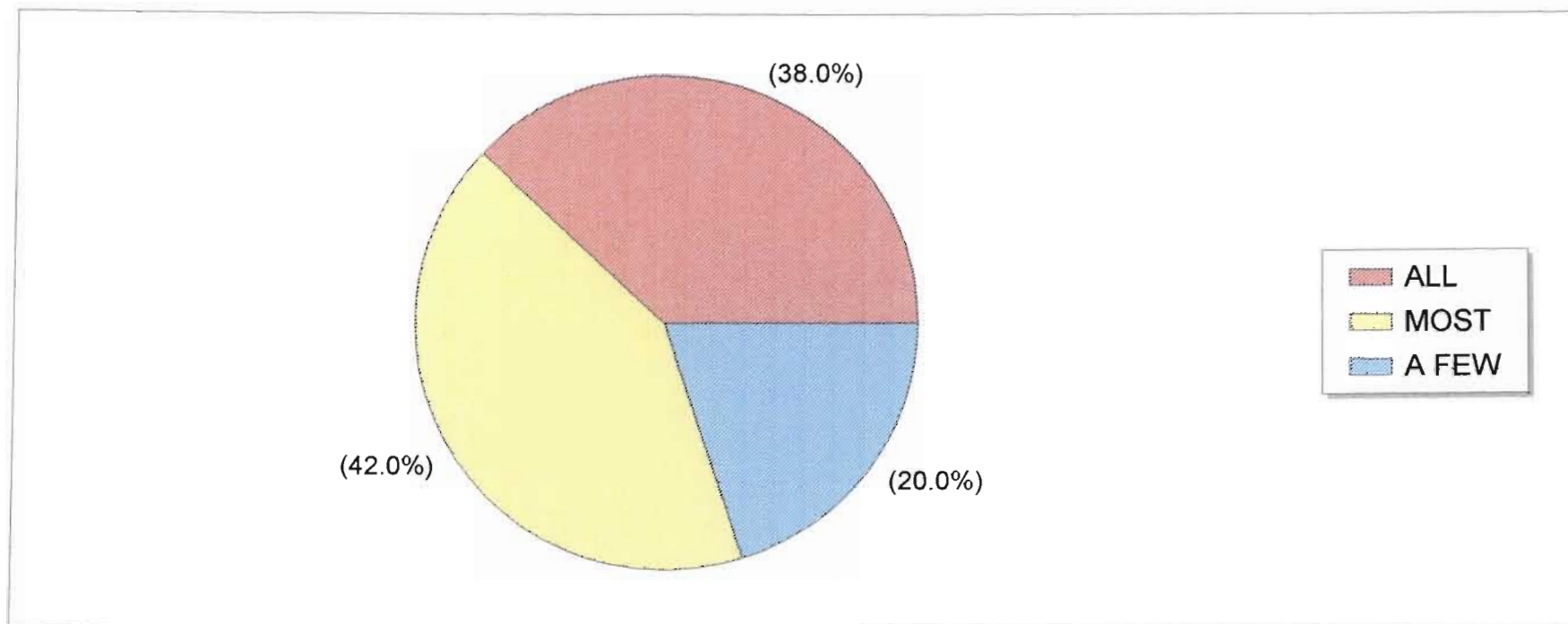


FIGURE 4.60 AVAILABILITY OF THE CLASSES PREFERRED BY THE AEROBIC CLIENTELE

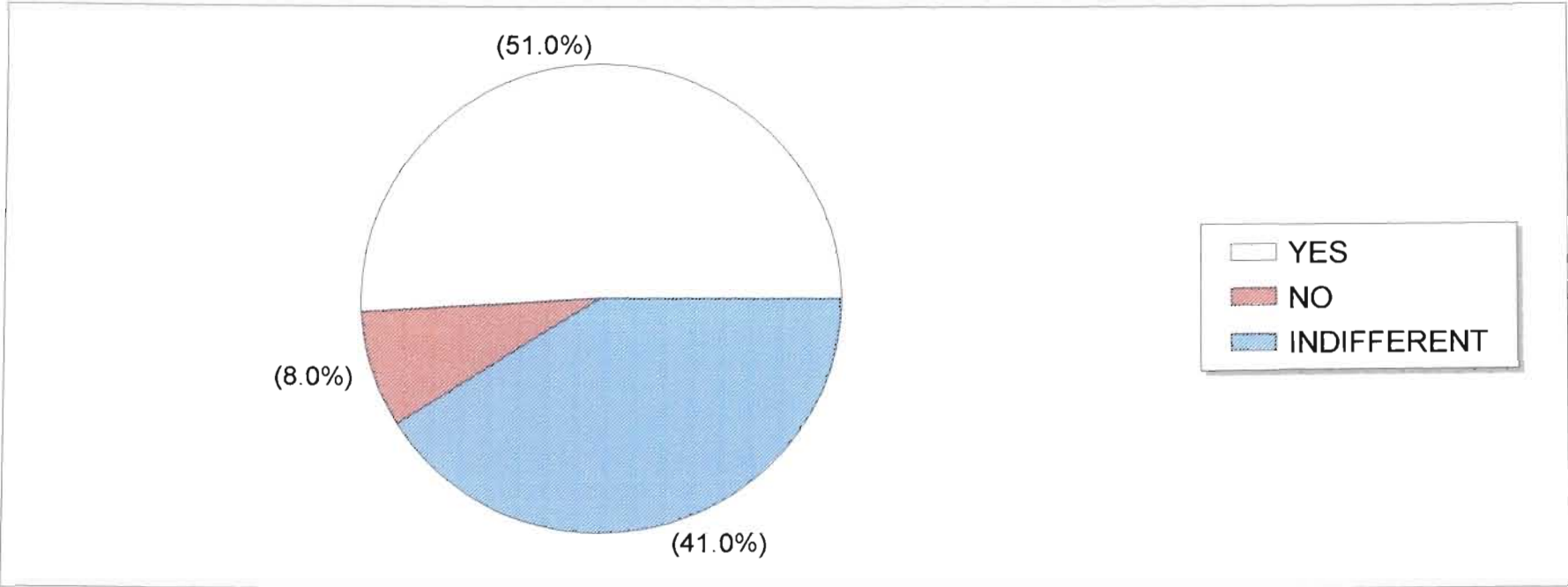


FIGURE 4.61 AEROBIC CLIENTELES' PREFERENCE REGARDING PERMANENT AEROBIC INSTRUCTORS

they are doing, ability to motivate, continual striving and upgrading to be a good teacher, professionalism, confidentiality, accessibility, ability to give informed guidance and to be a good role model (Figure 4.62).

4.8.3 QUALITIES THAT ARE LEAST APPARENT

There were ten qualities that the aerobic clientele felt were not apparent in the instructors that taught them. They were the ability to give informed advice, accessibility, to be a good role model, professionalism, ability to choose appropriate music, ability to motivate, enthusiasm, teach well and a sense of humour (Figure 4.63).

4.8.4 PREFERENCE REGARDING FREE-LANCE INSTRUCTORS

One hundred and six (65,4%) clients enjoyed the classes of free-lance instructors. Thirty-one (19,1%) were indifferent and 25 (15,4%) reported that they did not enjoy the classes of free-lance instructors (Figure 4.64). Two reasons were given by the clientele for not enjoying free-lance instruction. Eighteen (72%) of the 25 clients who did not enjoy free-lance instruction reported that they thought the instructors were exhibitionists while 14 (21%) perceived the instructors to lack enthusiasm (Figure 4.65).

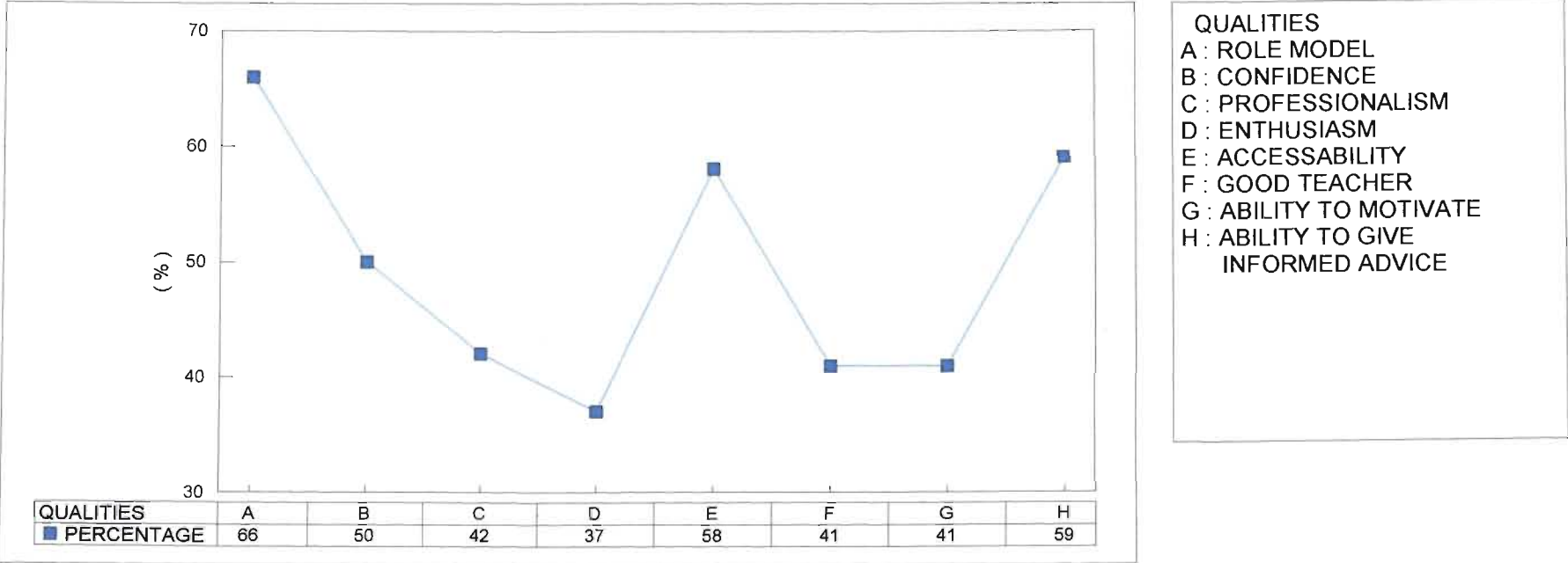
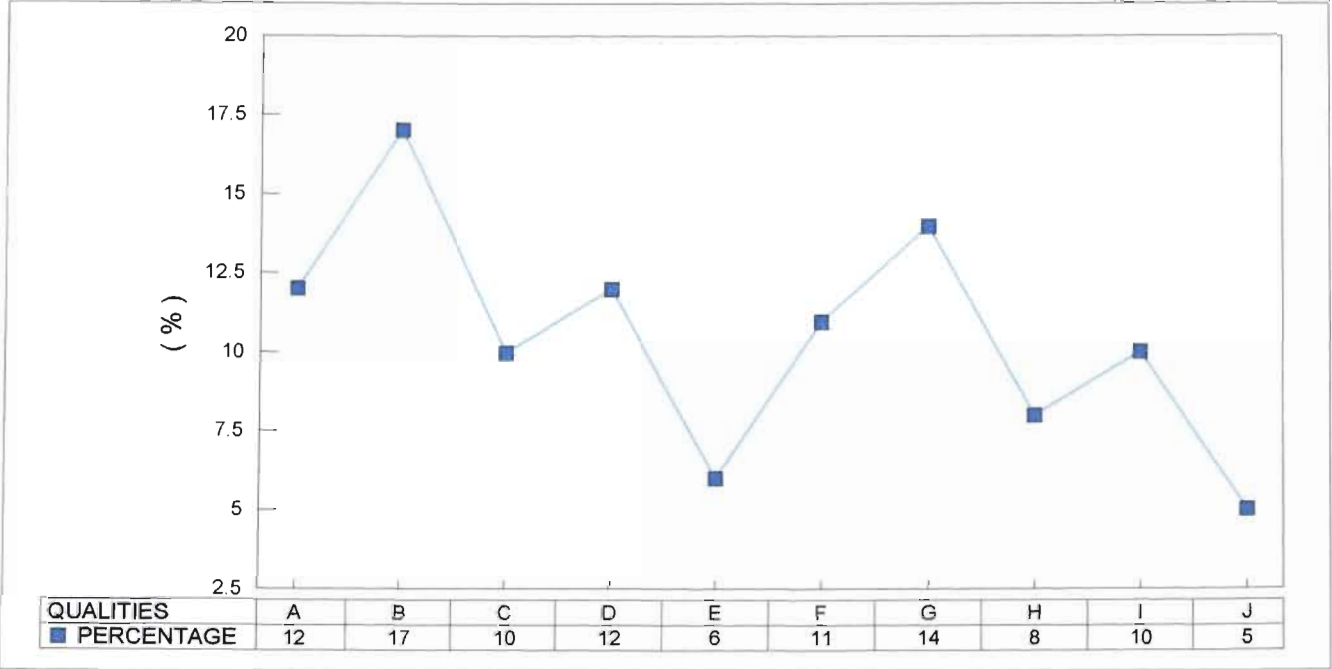


FIGURE 4.62 QUALITIES THAT THE AEROBIC CLIENTELE WOULD LIKE TO SEE IN THE AEROBIC INSTRUCTORS



- QUALITIES
- A : ROLE MODEL
 - B : CONFIDENCE
 - C : PROFESSIONALISM
 - D : ENTHUSIASM
 - E : APPROACHABILITY
 - F : GOOD TEACHER
 - G : ABILITY TO MOTIVATE
 - H : PROVIDE GUIDANCE

FIGURE 4.63 QUALITIES THAT ARE LEAST APPARENT IN THE AEROBIC INSTRUCTOR

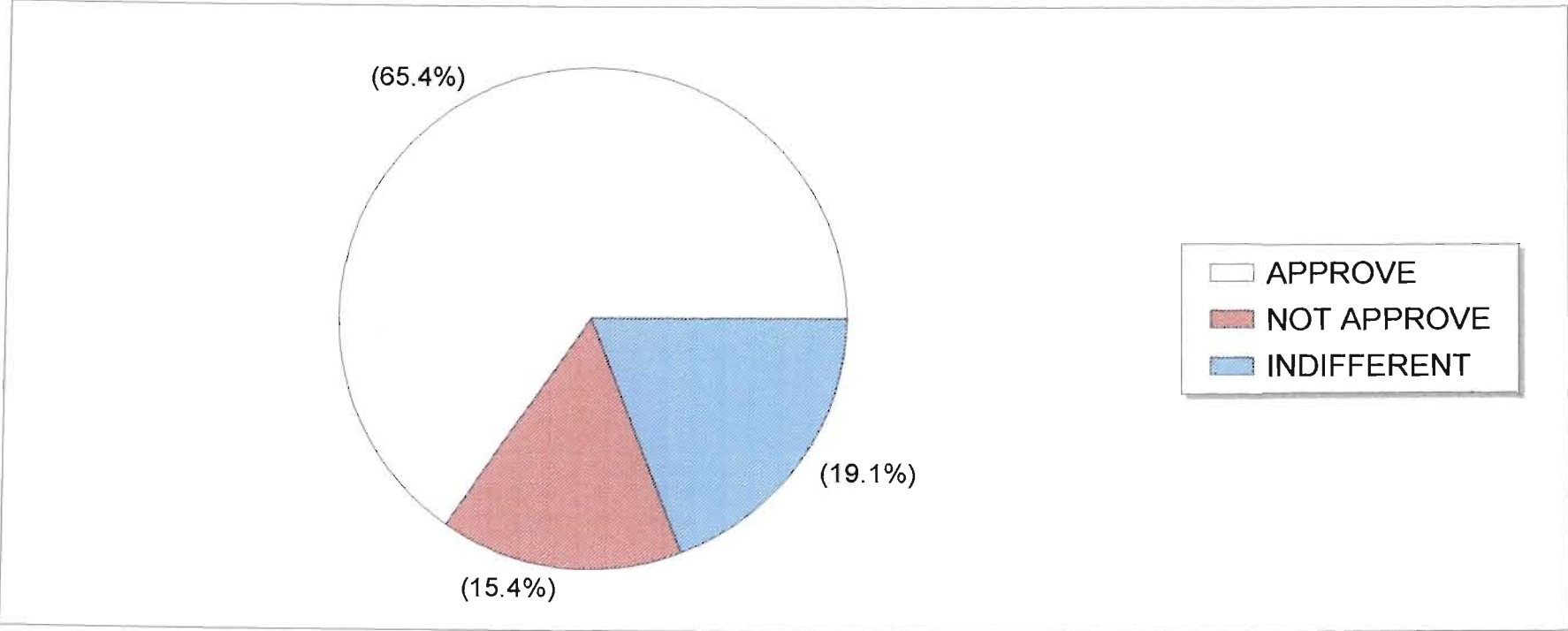


FIGURE 4.64 AEROBIC CLIENTELES' OPINION ON FREE-LANCE INSTRUCTORS

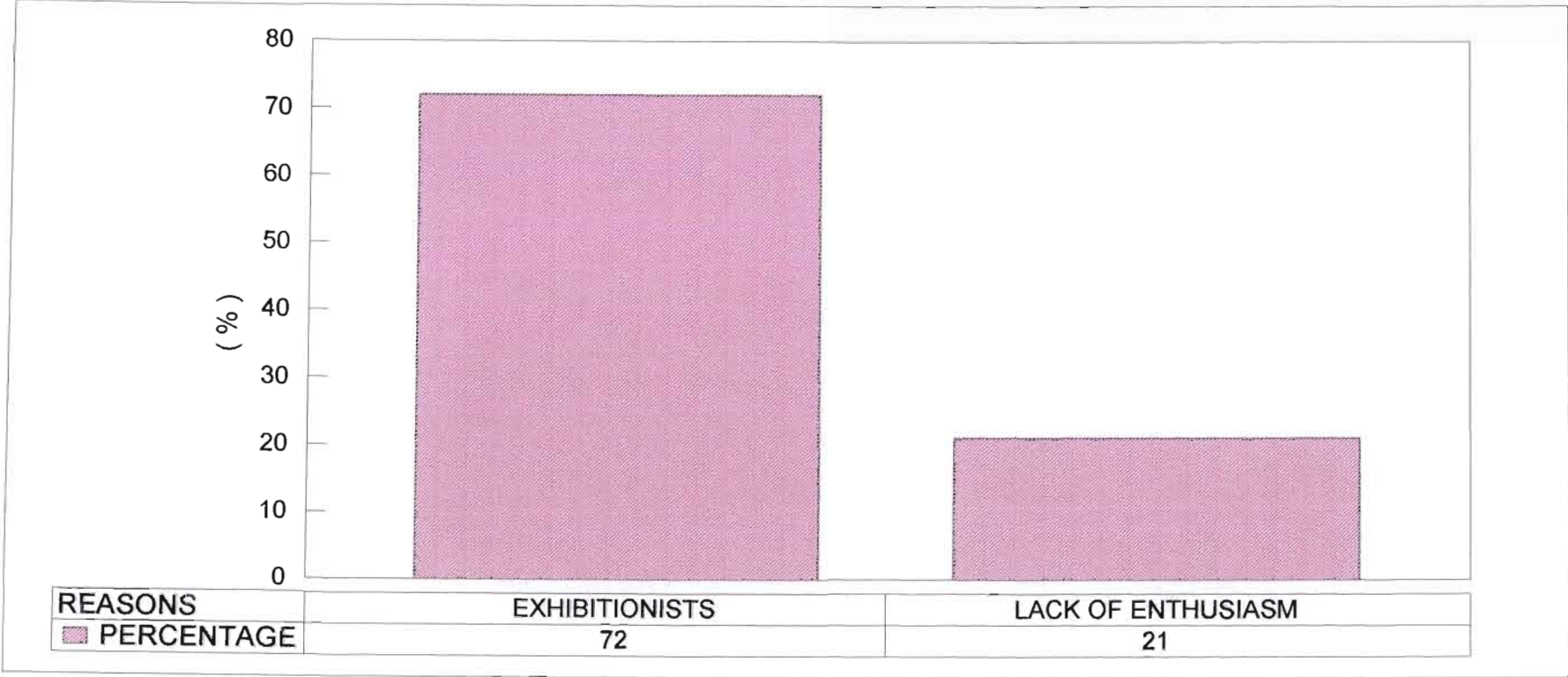


FIGURE 4.65 REASONS FOR NOT ENJOYING FREE-LANCE INSTRUCTION

4.9 CLIENTELE EVALUATION

The reader is referred to question 6 in the questionnaire (Appendix B).

4.9.1 MORPHOLOGICAL ASPECTS

It was noted that all aspects to a lesser or greater degree were being evaluated (Figure 4.66). Clients however, indicated that they would prefer more evaluation to take place (Figure 4.68). It was noted that 45% of the clients would like postural characteristics to be evaluated but that only 19% of the clients perceived this as being evaluated.

4.9.2 PHYSICAL FITNESS ASPECTS

The aerobic clientele perceived these aspects as being poorly evaluated (Figure 4.66) and in all aspects desired a more thorough evaluation to be done (Figure 4.68). The two physical fitness aspects that 64% of the clientele wished to be evaluated were cardiovascular endurance and body composition.

4.9.3 HEALTH RELATED ASPECTS

It was noted that there were two aspects that the clientele perceived to be well monitored. They are anaemia and diabetes mellitus. All other aspects were reported to be poorly evaluated

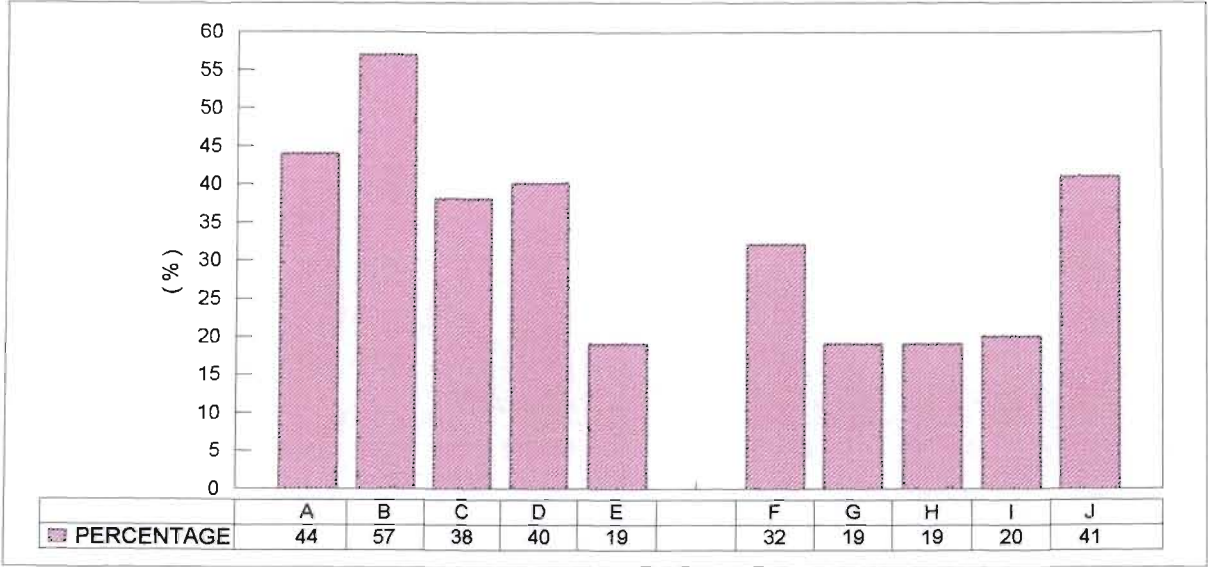
(Figure 4.67). Nutritional habits was one aspect that the clientele (62%) thought should be monitored closely. Other aspects that the clientele reported that they would like monitored were cholesterol, hypertension, low back pain, obesity and painful knees (Figure 4.69).

4.9.4 PERFORMANCE RELATED EVALUATION

Correct execution of movement was perceived to be well evaluated by 92% of the aerobic clientele but over and under-exercising not (Figure 4.67). All aspects were thought to be of importance for evaluation by the aerobic clientele (Figure 4.69).

4.9.5 CLIENTELE RATING OF THEIR FITNESS CENTRES' EVALUATION PROCEDURE

Seventy-three clients (45%) rated their fitness centres as average with regards to their evaluation procedures. Thirty-nine (24%) rated their fitness centre above average and 37 (31%) below average (Figure 4.70).



- MORPHOLOGICAL ASPECTS
- A : HEIGHT
 - B : BODY MASS
 - C : CHEST GIRTH
 - D : WAIST
 - E : POSTURAL CHARACTERISTICS
- PHYSICAL FITNESS ASPECTS
- F : CARDIOVASCULAR ENDURANCE
 - G : MUSCULAR ENDURANCE
 - H : MUSCULAR STRENGTH
 - I : FLEXIBILITY
 - J : BODY COMPOSITION

FIGURE 4.66 MORPHOLOGICAL AND PHYSICAL FITNESS ASPECTS INDICATING WHAT IS BEING DONE AT THE FITNESS CENTRES

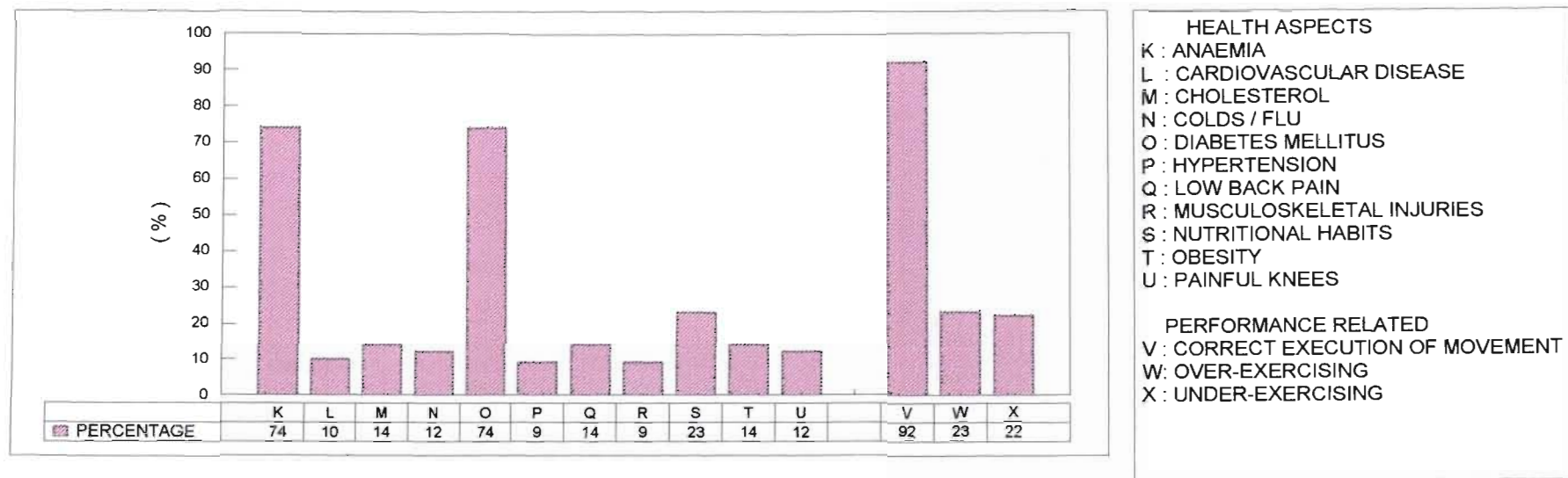


FIGURE 4.67 HEALTH AND PERFORMANCE RELATED ASPECTS INDICATING WHAT EVALUATION AND MONITORING IS BEING DONE AT THE FITNESS CENTRES

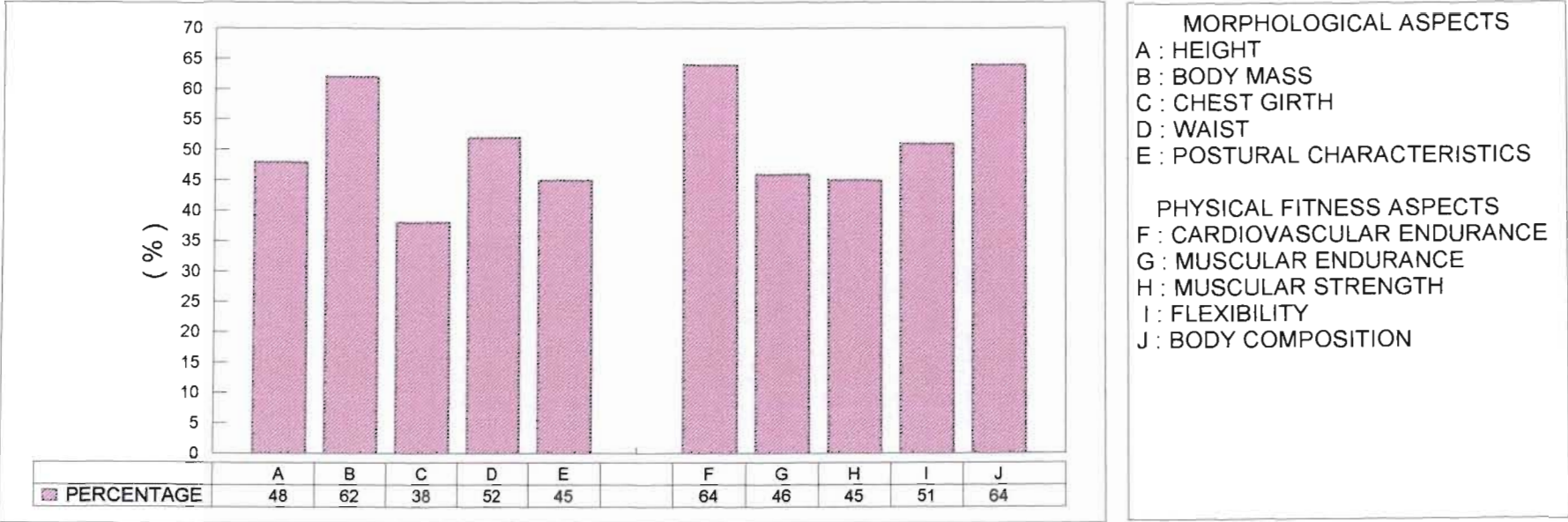
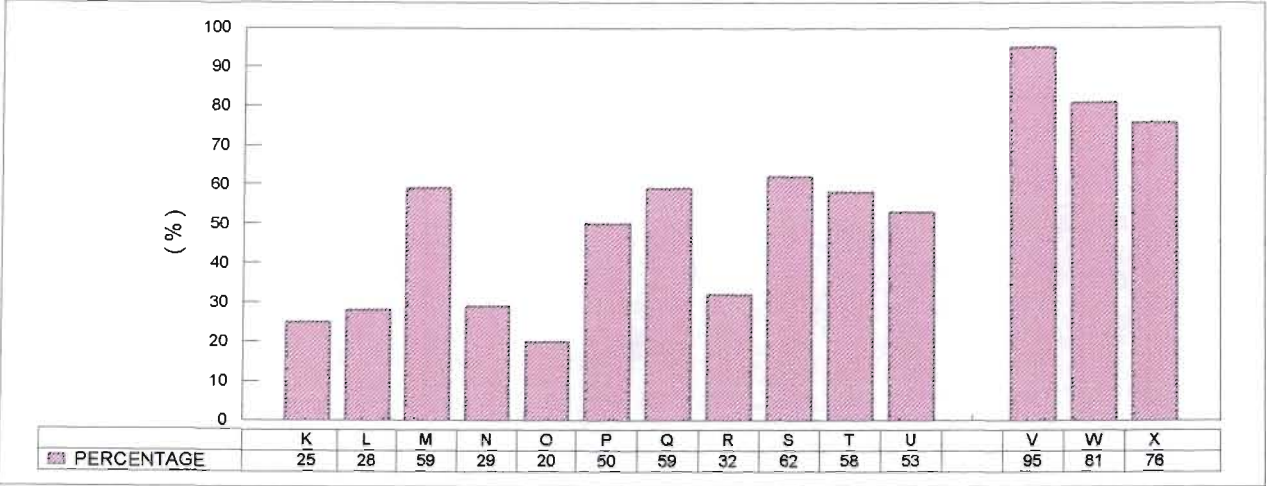


FIGURE 4.68 MORPHOLOGICAL AND PHYSICAL FITNESS ASPECTS WHICH THE CLIENTELE WOULD LIKE EVALUATED



- HEALTH ASPECTS
- K : ANAEMIA
 - L : CARDIOVASCULAR DISEASE
 - M : CHOLESTEROL
 - N : COLDS / FLU
 - O : DIABETES MELLITUS
 - P : HYPERTENSION
 - Q : LOW BACK PAIN
 - R : MUSCULOSKELETAL INJURIES
 - S : NUTRITIONAL HABITS
 - T : OBESITY
 - U : PAINFUL KNEES
- PERFORMANCE RELATED
- V : CORRECT EXECUTION OF MOVEMENT
 - W : OVER-EXERCISING
 - X : UNDER-EXERCISING

FIGURE 4.69 HEALTH AND PERFORMANCE RELATED ASPECTS WHICH THE CLIENTELE WOULD LIKE EVALUATED

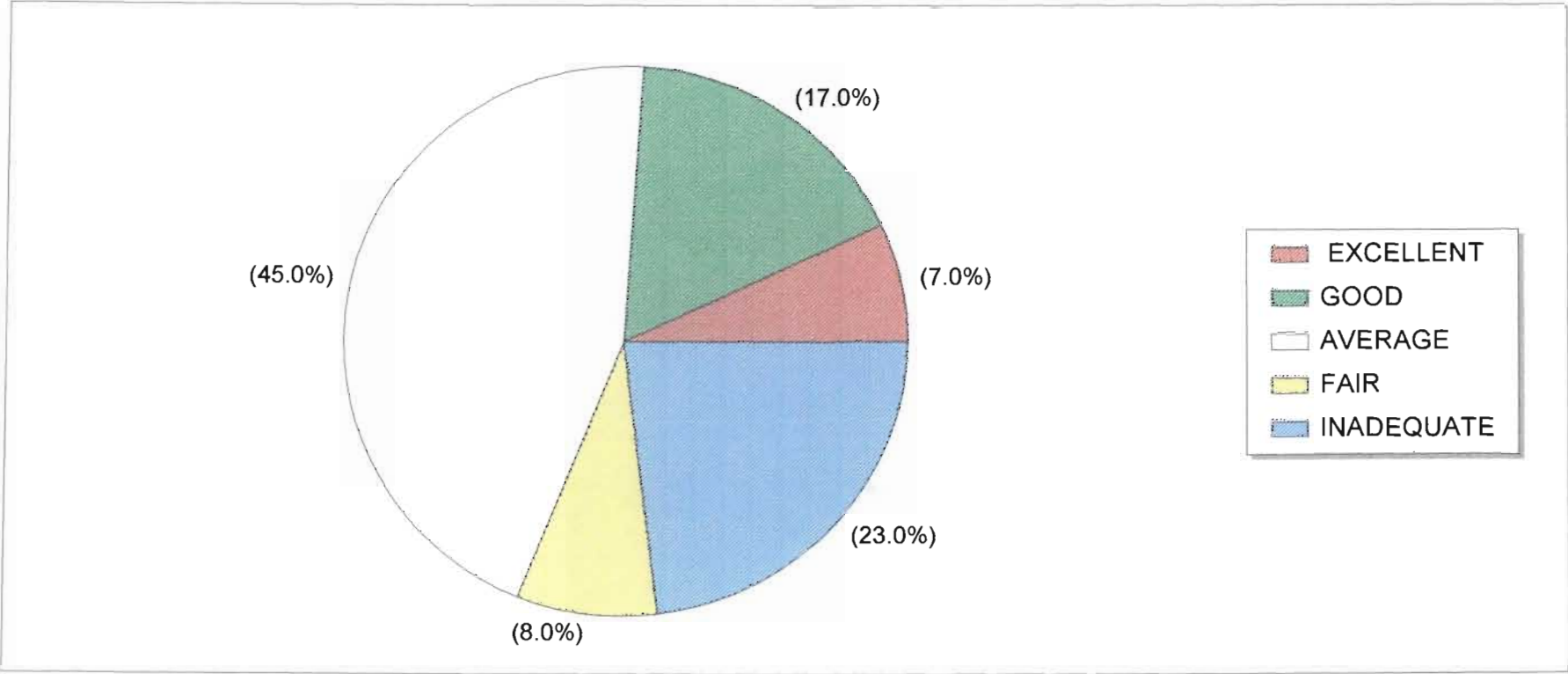


FIGURE 4.70 AEROBIC CLIENTELE RATING OF THEIR FITNESS CENTRES

4.10 FITNESS INDUSTRY

4.10.1 POPULATION GROUPS THAT ARE BEING PROVIDED WITH AN EFFECTIVE SERVICE

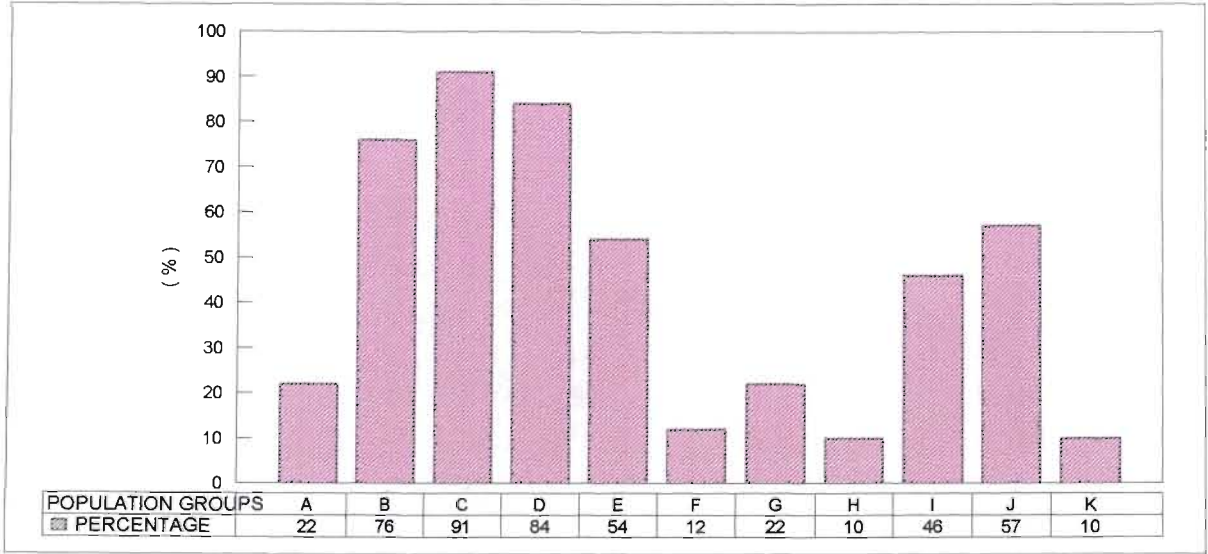
The population groups that were perceived to be best served by the industry were the young adult, the middle aged adult and teenagers. The overweight person, the older adult and the person training for sport specific fitness were perceived to be served but not to the same extent as the other three groups (Figure 4.71).

4.11 SUMMARY OF AEROBIC CLIENTELES' QUESTIONNAIRE

The total number of respondents was 162 of whom 91% were female and 9% male. The age of the majority (62%) of the clients ranged from 16-30 years of age. Seventy-two percent of the clients were single, 23% were married and 5% were divorced.

The study of the occupation of the clients revealed that 39,51% of the clients were employed while 60,49% were not. Of the economically non-active clients 80,16% were scholars and students and 19,39% were adults who were unemployed.

The majority (91%) of the clients felt it was important for the aerobic instructors to be qualified in aerobic instruction. There were seven reasons cited for preferring qualified instructors. They were injury prevention,



- POPULATION GROUP
- A : CHILDREN
 - B : TEENAGERS
 - C : YOUNG ADULTS
 - D : THE MIDDLE AGED ADULT
 - E : THE OLDER ADULT
 - F : MOTHER AND CHILD
 - G : THE PREGNANT WOMAN
 - H : THE HANDICAPPED
 - I : SPORT SPECIFIC TRAINING
 - J : THE OVERWEIGHT PERSON
 - K : THE PERSON WITH EATING DISORDER

FIGURE 4.71 POPULATION GROUPS THAT ARE BEING PROVIDED WITH AN EFFECTIVE SERVICE

enforcement of correct exercising techniques, well structured aerobic classes, the ability to enhance the optimum benefit from exercise, informed correction of movement, ability to give informed advice, the ability to use correct and effective teaching methods.

The majority of the clients attended two to six classes per week. Seventy percent of the clientele participated in other forms of physical exercise. Twenty-two other forms of exercise were used. The most used forms of exercise were jogging (45%), weight training (34%), swimming (32%) and cycling (17%). All these other forms of physical activity can be done at most of the fitness centres indicating that there may be a fair amount of cross training taking place. Ninety-one of the aerobic clientele indicated that their aerobic participation was beneficial for other forms of physical activity they were involved in. The most common benefits recorded were the maintenance and promotion of health and physical fitness, mental well-being, stress release, enjoyment and relaxation, socialisation and weight loss and maintenance.

The evening classes of one hour proved to be the most popular and the most preferred type of class was a step and floor work class. This was followed by an aerobic and floor work class, high impact aerobics and floor work, low impact aerobics and floor work and a step and aerobic workout.

Thirty-eight percent of the clients reported that all the classes they preferred were available at the fitness centres they belonged to. Forty-two percent felt that most of their choices were offered and 20% reported that only a few of their references were available.

Fifty-one percent of the clients reported that they would like their aerobic instructors to be permanently based at the fitness centre they belonged to.

The qualities, in order of preference, the aerobic clientele would like to see in their instructors were enthusiasm for the work they were doing, ability to motivate, continual striving and upgrading to be a better teacher, professionalism, confidentiality, accessibility, ability to give informed guidance and to be a good role model.

The personal qualities the aerobic clientele found to be least apparent in their aerobic instructors were the ability to give informed advice, accessibility, to be a good role model, professionalism, ability to choose suitable music, ability to motivate, enthusiasm, to teach well and have a sense of humour.

Sixty-five percent of the clients enjoyed classes given by free-lance instructors while 15% reported they did not enjoy classes given by free-lance instructors because they were exhibitionists and lacked enthusiasm.

Morphological aspects were evaluated to a greater or lesser degree. The clients indicated that they would prefer more evaluation to take place. The aerobic clients perceived the physical fitness aspects as being poorly evaluated. The clients wanted nutritional habits, cholesterol levels, hypertension, low back pain, obesity and painful knees to be monitored. The clientele wanted all the performance related aspects to be evaluated.

The aspect that was evaluated was correct execution of movement. Forty-five percent of the clients evaluated their fitness centres as average with regard to their evaluation procedures. Twenty four percent rated their fitness centre above average and 31% rated their fitness centre below average.

The population groups that were perceived to be best served by the industry were the young adult, the middle aged adult and teenagers.

CHAPTER FIVE

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CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

In this chapter the major findings of the study are discussed with particular reference to the implications emanating from the study of literature undertaken in chapter two. These discussions form the basis of the conclusions and recommendations which follow. Suggestions regarding possible future areas of research, emanating from the study, are also present, whereafter the hypotheses forming the basis of the study are considered.

5.2 THE PROFESSIONAL LIFE-WORLD OF THE AEROBIC INSTRUCTOR

5.2.1 QUALIFICATIONS/CERTIFICATIONS

5.2.1.1 DISCUSSION

The study of the literature in chapter two revealed the need for the aerobic instructor to possess adequate qualifications in aerobic instruction, in view of the frequently complex and demanding nature of the work.

Several sound arguments support the insistence on the need for the possession of good qualifications by the

aerobic instructor. Amongst these are the very real responsibility inherent in the teacher's role, the obligations to society and the education of the aerobic clientele. Bucher (1975:503-504) was correct when he maintained that athletic ability alone was not a sufficient qualification for the teacher of physical education. This could be applied very aptly to the aerobic instructor. Bucher in particular laid great stress on intelligence, scholarship, technical knowledge and erudition.

The aerobic instructor's task of educating the aerobic clientele entrusted to his/her care demanded a great variety of abilities. The popular stereotype of the physical educator in Great Britain as a muscular, dominant, stable, not overly bright individual (Whiting, et al., 1973:23) was not very reassuring. This stereotype is often associated with the aerobic instructor. The role played by the aerobic instructor called for a considerable development of intellect, a sufficiency of tact, organising ability, the ability to demonstrate movement and skills reasonably well, a sound knowledge of a variety of sciences, an understanding of psychology as well as great commitment to the principle if the aerobic instruction was to be successful. Vannier et al. (1973:81) reported that in order to carry out the many tasks, the movement

instructor, like any good teacher, needed technical skills, personality, integrity and good health. The aerobic instructor shared the need of all teachers to have the necessary academic and professional training for teaching their particular subject (van Vuuren et al., 1976:350). The number of certifications obtained by the aerobic instructor in this study ranged from none to nine. There was a mean of three certifications per instructor. This may be re-garded as a cause of great concern as the duration of training could have been as short as eight hours per certification. This concern was further compounded by the fact that two instructors had received no training at all.

The nature of the certification programme that was available to the aerobic instructor was an exercise leader programme that qualified the instructor to lead exercise on the floor. Some of the programmes did include exercise testing, prescription and leadership in preventative programmes.

5.2.1.2 CONCLUSIONS

Aerobic instructors are clearly obliged to make every effort to acquire the necessary knowledge and skills by means of reading, attending aerobic instructor courses and becoming involved with continuing education. It

would also be an advantage to belong to a professional organisation.

It is strongly urged that the problem of untrained teachers be resolved by the establishment of a programme of regular in-service courses. Such courses could be undertaken during holiday and over weekends.

5.2.1.3 RECOMMENDATIONS

It is recommended that aerobic instructors take responsibility for their training in order to acquire the necessary knowledge and skills needed by an aerobic instructor.

It is also recommended that universities and colleges devise courses pertinent to the fitness industry to run concurrently with their Human Movement Studies/Science courses.

A further recommendation is that in-service courses be run by local universities and colleges as well as courses emanating from the industry itself to up-grade the teachers already in the field of aerobic instruction.

5.2.2 TRAINING ORGANISATIONS AND EVALUATION OF TRAINING

5.2.2.1 DISCUSSION

Another cause for concern was the aerobic instructors' evaluation of their training. A high percentage (48,39%) perceived their training to be either unsatisfactory or satisfactory with reservations. Another criticism that was evident was the fact that there were too many training organisations and that this was considered to be confusing particularly when organisations were considered to have profit as their main objective. Another criticism with regard to the training organisations was the competition that existed between them. Instructors perceived that some organisations offered softer courses to attract potential learners to their organisation. Eight seven percent of the instructors were concerned about the fact that there was no standardisation of training courses and certification in the fitness industry. The standard of training was considered to be inadequate by 74% of the instructors. Sixty two percent of the instructors thought the training courses were too short. Sixty one percent of the instructors thought that there was insufficient in-service training and 48% of the instructors perceived the training courses to be too expensive. All instructors were in favour of in-service training. Twenty three

percent of the instructors did not feel equipped to serve the needs of the aerobic clientele and one solution was reported to be further training but the high cost of training was one reason that prevented many instructors from gaining further qualifications.

5.2.2.2 CONCLUSION

In addressing the standard of training in the fitness industry it was concluded that improvement in the quality of training offered to the aerobic instructor needs to be addressed. The variety of certifications should also be addressed. The majority of the programmes offered by the training institutions are exercise leaders qualifying them to lead an aerobic class. There are also other certifications related to unique aspects of exercise leadership, such as step courses. However, other certification programmes need to be developed as there are many areas that have not been addressed.

5.2.2.3 RECOMMENDATIONS

It is recommended that improvement in the quality of training offered to the aerobic instructors should be addressed by the organisation directors, course leaders and organisers. It is also recommended that other certification programmes be developed for the fitness industry. Certification in health fitness instruction is

one. This certification would qualify the instructor in exercise testing, prescription, and leadership in preventive programmes. The health and fitness director needs to be a qualified health fitness instructor and also a person who is responsible for administration of preventive programmes. The exercise test technologist is qualified in exercise testing in preventive and rehabilitative programmes. The preventive/rehabilitative exercise specialist is qualified in exercise testing, prescription and leadership for all populations and the preventive/rehabilitative programme director is qualified as an exercise specialist and is responsible for administration, community education programmes, research and development in preventive and rehabilitative programmes (Howley, 1992:259).

Further studies should be undertaken with regards to the possibility of establishing a diploma and degree for the fitness industry. It was reported that, all too often, seasoned fitness consumers asked whether a particular facility employed fitness professionals with at least a Bachelor of Science degree in physical education/-exercise science (in Institute for Aerobic Research, 1987:3).

It is also recommended that further research be

undertaken in order to ascertain the need for further programmes in the fitness industry.

A further recommendation is that further studies be undertaken regarding the possibility of standardising the training of teachers for aerobic instruction at a national level.

5.2.3 YEARS IN WHICH TRAINING OCCURRED

5.2.3.1 DISCUSSION

The fieldwork for this study was completed in 1992 therefore there is no recorded year in which training occurred after this date. The majority (80.91%) of the qualifications/certifications were received between 1986 and 1992. This finding linked up with the finding that 67.65% of the aerobic instructors had eight years of teaching experience or less. It also linked up with the finding that all (100%) of the instructors thought that continuing education credits were a good idea and necessary for continued development and growth.

5.2.3.2 CONCLUSIONS

It was concluded that the availability of training appeared to be adequate as 89 of the 110 certifications were obtained between 1986 and 1992. It also

appeared that there was a growing awareness about the necessity to be qualified in order to teach effectively.

5.2.3.3 RECOMMENDATIONS

It is recommended that aerobic instructors be encouraged by their respective organisations and the fitness centre owners to continue attending training courses. In order to facilitate an increase in certifications, the fitness centre owners could either subsidise or pay for a certain number of courses per year as part of the benefit package for aerobic instructors.

5.2.4 DURATION OF TRAINING AND CONTINUING EDUCATION CREDITS

5.2.4.1 DISCUSSION

The duration of training for those instructors who had qualifications/certifications ranged from eight hours to three years and thirty five hours. One instructor had a Diploma in Teacher Education. This was the only formal qualification in the study with an extended period of preparation. One instructor had six certifications and had spent 11 hours in training for all six certifications. The mean duration for each certification would therefore be 1.8 hours. Two instructors had received no

certifications and therefore had spent no time in preparation for aerobic instruction. It is doubtful that specialised skills obtained in a body of knowledge of an academic discipline could be achieved with such a short preparation time.

5.2.4.2 CONCLUSION

With training of such a short duration it is not possible for the fitness industry to be classified as a profession. A profession as indicated in chapter two should have a group of people who provide a unique social service to humankind. This service should be marked by specialised skills obtained in a body of knowledge of an academic discipline acquired by its members during a period of extended preparation and conducted according to the standards of moral behaviour and ethical practices.

5.2.4.3 RECOMMENDATIONS

It is recommended that the inadequacy of short training courses be addressed by the training organisations, course organisers and course leaders.

5.2.5 TEACHING EXPERIENCE

5.2.5.1 DISCUSSION

It was calculated that 67.65% of the instructors had eight years of teaching experience or less. Although writers such as Voltmer et al. (1967:159-165) regarded professional preparation as more important to success than experience, this latter attribute is important to any professional community. The relatively brief period of aerobic instruction tended to mitigate against consistency, continuity and knowledge based on experience within the profession. While youth was an advantage in fulfilling the vigorous demands of such teaching, it tended to mitigate against the accumulation of a body of experience that could be shared, with consequent benefit accruing to others engaged in the discipline. Van Zyl et al. (1979:100) pointed out that a teacher needed to be prepared to continue the pursuit of new knowledge, improve his/her teaching strategy and find new approaches. Bucher (1978:214) advocated personal development by continued study and in-service training. Coutts (1981:15) supported this when he reported that a generous span of teaching experience was necessary for this personal development to take place. He also wrote that it was detrimental for any subject to have so many teachers spending so little time in their particular field of endeavour.

There was concern regarding unqualified managers-owners, exploitation of aerobic instructors by fitness centre owners, low salaries, profit orientation of fitness centre owners/managers, unqualified teachers, egotistical teachers, insufficient in-service training and profit orientation of training organisations. Such factors tended to mitigate against a long period of service in aerobic instruction. This jeopardised the professional growth of the aerobic instructor. Bailey et al. (1976:76) regarded professional growth as mandatory if a teacher was to be most effective.

5.2.5.2 CONCLUSIONS

The movement of aerobic instructors from aerobic instruction to other forms of employment was a cause for concern as it necessitated a constant re-supply of aerobic instructors. This mitigated against the continuity of aerobic instruction.

In order to persuade greater numbers of aerobic instructors to remain in aerobic instruction, it is imperative that all their concerns be addressed.

5.2.5.3 RECOMMENDATIONS

It is recommended that the aerobic instructors' concerns be addressed by the owner/manager at the various

fitness centres. A Code of Practice for all levels of the Fitness Industry also needs to be developed. With reference to the Code of Practice established for the American Fitness Industry discussed in chapter two, this could be developed by the South African Consumer Affairs Bureau.

5.3 TEACHING AEROBICS

5.3.1 NUMBER OF CLASSES TAUGHT PER WEEK

5.3.1.1 DISCUSSION

The mean number of classes taught per week was found to be eight. It was calculated that 44.12% of the aerobic instructors taught ten or more classes per week. It had been reported that this could very easily lead to aerobic instructor burnout syndrome (AIBS). Shelton (in Institute of Aerobic Research, 1987:33) suggested that most instructors did not realise that their teaching and workout schedule might be the cause of the many problems they were experiencing. This realisation could be devastating particularly if the instructor had always enjoyed teaching and had reaped the rewards that come from being in a service orientated profession. She reported the symptoms of aerobic instructor burnout syndrome in some detail.

5.3.1.2 CONCLUSION

It was found that 44.12% of the aerobic instructors taught ten or more classes per week. These results suggested that on many days aerobic instructors were teaching two classes per day. This together with the result that the most widely used teaching method was the command style lead to the conclusion that ten or more classes taught per week was excessive. Over a period of six months this practice could very easily lead to instructor burnout.

5.3.1.3 RECOMMENDATIONS

It is recommended that the number of classes taught be limited to a maximum of seven classes per week. Further recommendations are that the workout levels as well as the type of classes the instructor teaches be addressed. At least one day per week should be allocated as a rest day for the instructor. This prevention of instructor burnout would help instructors continue to enjoy their profession and protect their ability to teach effectively for a long time.

5.3.2 REMUNERATION

5.3.2.1 DISCUSSION

It was found that the majority of the aerobic instructors were dissatisfied with the remuneration they received. Nineteen (55.88%) of the instructors received R40.00 or less for an hour of aerobic instruction. If this instructor taught ten classes per week he / she would earn R1 600.00 per month. This would be a very sparse monthly income if the aerobic instructor did not supplement his/her income with some other form of employment. This single fact could lead to aerobic instructors opting to teach too many classes per week, thereby risking injury and illness. This low salary could also have other ramifications in the form of the inability to pay for expensive training courses, in-service courses to stay abreast with the latest developments in movement science, and a shortened service experience. All these factors influence the profession as a whole.

Twenty (58.82%) of the instructors did have another form of employment. An interesting phenomenon was that only 20% of the instructors chose employment that was related to the fitness industry. This could have been a direct result of the low salaries associated with the fitness industry.

5.3.2.2 CONCLUSION

The result of this study suggested that instructors

should receive adequate remuneration. An inadequate remuneration could cause aerobic instructors to teach more classes than they could cope with, particularly if they did not have any other form of employment. Howley et al. (1992:32) reported that the biggest part of the budget involved salary and benefits for the staff. They suggested that relatively high base salaries and benefits, with regular increments based on evaluations, could assist in employing people with better qualifications. An attractive salary and benefit package would result in higher job satisfaction, higher quality performance, and a lower turnover rate.

A clear job description that was mutually understood provided a basis for periodic evaluations. The main purpose of the evaluation was to assist the staff member in improving himself or herself. However, if the evaluation was also used to determine whether or not employees were retained in that position, merit raises would have to be awarded.

5.3.2.3 RECOMMENDATIONS

It is recommended that a Code of Practice be established for all levels of the fitness industry. One of the issues that would have to be addressed would be the salary structure, benefit package and merit raises

that are relevant and pertinent to the industry.

5.3.3 MOVEMENT CONTENT TAUGHT

5.3.3.1 DISCUSSION

It appeared that a wide range of movement areas were used in aerobic instruction. The movement areas that were used most often were low/high impact aerobic and floor work (88%), low impact aerobic and floor work (82%), stretch and tone (82%), step bench and floor work (79%) and aerobic and hand weights (76%). The aerobic clientele on the other hand far preferred step and floor work (73%), followed by aerobics and hand weights (56%), high impact aerobics (54%), low high impact aerobics and floor work (52%) and step bench aerobics (52%).

Stretch and tone was taught by 82% of the aerobic instructors although only 43% of the aerobic clientele preferred it as a movement area. There appeared to be a discrepancy in what the aerobic instructor taught and what the aerobic clientele preferred.

5.3.3.2 CONCLUSIONS

In order to keep abreast of the needs of the aerobic clientele it appears necessary for the fitness centres to

survey their clients. The movement content taught should also include new movement areas that are being developed. Here the slide, upper body strength with body bars and bands are good examples.

5.3.3.3 RECOMMENDATIONS

It is recommended that the clientele surveys should be done on a regular basis and the aerobic instructors encouraged to participate in education seminars and workshops on a regular basis.

5.3.4 WEIGHT TRAINING INVOLVEMENT

5.3.4.1 DISCUSSION

It was found that there was a low (17.6%) cross over from aerobic instruction to weight training involvement. This could have been a direct result of low salaries and the structure of many of the training courses which frequently omitted weight training as part of the course.

5.3.4.2 CONCLUSION

In order to encourage more involvement in weight training, existing courses need to include a component of weight training in their course structure. Also the development of other certifications catering for all aspects of the fitness industry would possibly encourage

more involvement.

5.3.4.3 RECOMMENDATIONS

It is recommended that more attention be given to weight training during the preparation period for aerobic instruction. It is also recommended that courses be constructed specifically for weight training instruction for the fitness industry.

5.3.5 RANGE OF TEACHING APPROACHES

5.3.5.1 DISCUSSION

The standard lesson structure was a sufficiently flexible instrument in the hands of a competent instructor, and accommodated a variety of teaching approaches. The instructors were asked to indicate the teaching styles they used, and if they did not know what teaching style they used, they were asked to leave the question blank. Consequently 67.65% of the instructors did not answer the question. Of the instructors who were able to answer the question, 90.91% used the command style and 72.73% used the practice style. These were predominantly teacher-centred approaches and tended to facilitate the acquisition of skill and the development of physical fitness. Since these are particularly suited to aerobic instruction, such an emphasis is

understandable.

The low incidence of the use of reciprocal, self check, and inclusion styles is of concern. It is clear that the development of any higher cognitive capacities was relegated to the background. It was possible that aerobic instructors adhered to the more direct modes of instruction due to their experience of firm control that is characteristic of these approaches.

5.3.4.1 CONCLUSIONS

Although Griesel (1978:47) has warned against the use of too many styles in one lesson, the use by teachers of a wide range of teaching approaches should be encouraged. Their use would facilitate the achievement of wide range of outcomes for the aerobic clientele. At the lower end of the spectrum of teaching approaches, teaching by command and practice focus largely on the development in the psycho-motor development, with emphasis on efficient teaching of the content. It should be noted that when a single, limited approach, or combination of approaches dominates the instructor's horizon, the effectiveness is likely to be limited.

5.3.5.3 RECOMMENDATIONS

Courses in aerobic instruction should emphasise a wide

range of teaching approaches. The relationship of each approach to a particular outcome should be stressed.

5.3.6 FACILITIES AND EQUIPMENT FOR AEROBIC INSTRUCTION

5.3.6.1 DISCUSSION

The limited availability of facilities and equipment can greatly curtail the movement areas offered in aerobic instruction.

The adequate provision of halls, aerobic studios, change rooms and offices from which to conduct clerical work was promising. However, there was inadequate provision of swimming pools from which to conduct aquacise. Nurseries or play areas for children did also not cater adequately for the very large percentage (91%) of the female population in the study. Of these women, 30% probably needed a facility such as a nursery or play area. This barrier has been well documented as one of the reasons for the lack of physical recreation amongst women (Beashel et al., 1992:222).

The perceived adequacy of equipment for aerobics, floor work, step/bench and aerobic hand weights was evident, while the perceived lack of equipment for

aquacise correlated to the lack of facilities for aquacise. The reported non-existence of other equipment that could offer diversity to the lesson and enhance creativity, was of concern. There was no reported use of body bars, bands and slides for example.

The spiralling cost of sporting equipment was also a source of concern as this could exacerbate the problem of insufficient equipment.

5.3.6.2 CONCLUSIONS

It is not possible to conclude from the results of this study that facilities and equipment were generally inadequate. There is a regular and ongoing expense of insurance, maintenance and repair of facilities. People are often tempted to ignore regular maintenance and repair, but keeping the facilities in good shape is more efficient than incurring major expense as a result of not having done so.

Equipment should be available so that participants may accomplish their goals, and this equipment should be kept in good condition.

5.3.6.3 RECOMMENDATIONS

It is recommended that aerobic instructors undertake a

careful re-appraisal of the environment they have created for aerobic instruction on a regular basis and that they stay abreast of the latest developments in aerobic instruction.

5.3.7 AEROBIC CLASS STRUCTURE

5.3.7.1 DISCUSSION

Purposeful teaching should focus on the achievement of particular outcomes and emanate from the implementation of sound pedagogical principles and a good understanding of the subject matter on the part of the aerobic instructor. A good understanding of pedagogics and didactics was therefore an essential pre-requisite for effective teaching (Coutts, 1981:180).

The most widely used lesson structure comprised warm-up/stretch, an aerobic phase, floor work and cool down/stretch. From this it would appear that the aerobic clientele were involved in planned and systematic exercise. The majority (94.12%) of instructors reported that they changed their format where necessary. Reasons given for the change in format were the age of the clientele, fitness level of the clientele, stretch and tone classes, calisthenics, pre-natal classes, weight reduction classes, weather, level of enthusiasm of the

clientele, time of the class and gender. It would appear that physiological development was well catered for in aerobic instruction.

5.3.7.2 CONCLUSIONS

Purposeful teaching focussed on achievement of particular outcomes and, emanating from the implementation of sound pedagogical principles, implied a good understanding of these components on the part of the aerobic instructor. A good understanding of pedagogics and didactics appears to be an essential pre-requisite for effective teaching. It is clear that aerobic lessons should be structured to permit the major channels of aerobics to be constantly reinforced. This implies that major facets of the psycho-motor domain should be developed systematically during the lesson. Provision should be made for the achievement of the essential biological outcomes of aerobics as well as the development of skills.

From this study it would appear that the aerobic instructors were involved in planned and systematic instruction.

5.3.7.3 RECOMMENDATIONS

It is recommended that the courses for aerobic

instruction continue to focus on the didactic and pedagogical implications of the lesson in aerobic instruction.

5.3.8 EXTENT AND CONTENT OF EVALUATION

5.3.8.1 DISCUSSION

Mathews (1978:1) was of the opinion that evaluation was an inextricable component of the teaching and educative process. Although in the execution of his/her every day activities the aerobic instructor was involved in decision making, planning, assessment and revision of his/her work, these actions were often unsystematic and haphazard. In order to diagnose problems, motivate, reveal potential and ability and aid in the progressive process of exercise, a systematic application of evaluative procedures was demanded.

The evaluation of individual development was regarded as imperative. The evaluation of the aerobic clientele's present status, with regards to the achievement of particular outcomes, could reveal the client's readiness for further development. According to Hill (1974:27) it was a process of orientation for both the instructor and the client. Vannier et al. (1975:502) stressed the

importance of indicating the extent of the progress made. This he reported was a major factor in motivation and could enable the client to perceive any discrepancy between the present status and that to which the client aspires.

The measurement of each major anthropomorphic dimension could be used as a record of improvement and a means of motivation. The confidentiality of such data should be respected and high ethical standards applied, if the relationship of trust was to be maintained.

There are many tests available for measuring physical fitness components. Coutts (1981:306) listed a comprehensive array of factors amenable to evaluation:

the performance factors include strength, speed, power, agility, balance, flexibility, co-ordination, kinaesthetic sense, hand-eye-foot-eye co-ordination, motor educability, fitness, sport skill and posture.

The value for the individual being tested could be the highlighting of strengths or weaknesses in order to determine which specific fitness areas needed

improvement, to calculate the current work capacity that was needed, to assess how much of the components of fitness have been lost following injury, illness or lack of training and to reveal symptoms related to fatigue and over training (Beashel et al., 1992:70).

In view of the close relationship between health and physical fitness, tests of the latter could very well provide some evidence of the status of the former (de Wet Theron, 1965:209). It must be understood that the evaluation of certain aspects of the aerobic clientele's physical or physiological development was probably beyond the aerobic instructor's competence. Coutts (1977:54) pointed out that medical fitness, which he equated with health was largely outside the scope of the evaluation procedures but was rather the proper concern of a medical doctor. Exceptions could be made in the case of evaluating colds/flu, nutritional habits, obesity and certain muscle injuries. All other health aspect problems should be recorded, acknowledged and monitored by the aerobic instructors.

The evaluation of performance-related aspects must be the concern of the aerobic instructor. It is imperative that the correct execution of movement be monitored in all aerobic lessons. This would obviously prevent injury.

Over-exercising should be constantly guarded against as this could lead to aerobic injuries and aerobic burnout syndrome. Many of the aerobic clientele have set goals for themselves therefore it is important that under-exercising be monitored in order to help the client achieve his/her goal. Under-exercising could have health related implications, such as anaemia, therefore this should be closely monitored.

5.3.8.2 CONCLUSIONS

Evaluation must be regarded as an integral feature of aerobic instruction. Despite the many problems inherent in evaluation, the possibility of evaluation of a wide variety of factors does exist. This implies that a sound programme of evaluation is possible and indeed necessary in aerobic instruction.

The morphological evaluations that were most evident were body mass and waist girth. Among physiological aspects, cardiovascular endurance and body composition were most commonly measured. Obesity and shin splints among the health related aspects were also evident.

In this study only 27% of the instructors kept records on all of their aerobic clients, 35% kept records on some

and 38% kept no records at all, indicating the degree of evaluation that was undertaken. The percentage who did not evaluate systematically was considerable.

5.3.8.3 RECOMMENDATIONS

It is recommended that training institutions ensure that the aerobic instructors they train have the necessary skills and knowledge required for the implementation of a programme of evaluation in aerobics.

5.3.9 REASONS FOR AEROBIC INVOLVEMENT

5.3.9.1 DISCUSSION

Jones (in Institute for Aerobic Research, 1987:12) described a quality instructor. She reported that an instructor should exhibit good movement skills, good rhythm, effective group control and people skills. The instructor should be genuine when communicating and be a caring person. Alan (in Institute for Aerobic Research, 1987:34) emphasised further qualities when he wrote that an outstanding instructor should maintain a positive attitude and an atmosphere of vitality in every class, make sure that personal needs are fulfilled, establish realistic and obtainable goals, be industrious and creative and have an inherent love of teaching and exercise.

The reasons that were given by the instructors in this study for becoming involved in the fitness industry, were the enjoyment of exercise, to remain fit, to promote health, to teach and to earn a salary. Two of the five reasons were personal while the promotion of health, the desire to teach and the enjoyment of exercise were goals of the fitness industry. It was of concern that only 47% of the instructors recorded the desire to teach as one of the reasons for becoming involved in aerobic instruction, while 26% of the instructors were in aerobic instruction to promote health and wellness in their clients.

Henry Kissinger (in Peters et al., 1982) was cited as saying that a leader was one who could take people from where they were to where they had not been. Howley et al. (1992:258) agreed with this when they wrote that Kissinger's statement was very true for the exercise leader as they were the people who had to counter the negative influences bearing on the portion of the population most in need of physical activity. The duties of the aerobic instructor are to screen the health status of clients, evaluate various fitness components, prescribe activities at the appropriate intensity, duration and frequency consistent with test results and personal goals, lead individual and groups in appropriate

activities, monitor participant's responses within the exercise session, modify activities depending on environmental and other facts, record progress and problems, respond to emergencies and refer problems to appropriate health professionals (Howley et al., 1992:258). Howley (1992:259) maintained that good instruction did not simply mean taking a class. He said there was a need to make participants feel welcome, to generate motivation within the individual or group and to be a friend. To do all this the instructor must develop interpersonal skills.

It is doubtful whether the reasons given in this study for choosing to be involved in aerobic instruction are sufficient when the qualities of a good aerobic instructor are analysed.

5.3.9.2 CONCLUSIONS

One of the most important elements of an aerobic programme is the establishment of procedures to try to ensure a high standard of information, personal contact and activities that are conducted as part of the fitness programme. Howley et al. (1992:326) were of the opinion that one way of establishing high standards was to ensure accessibility to the programme. All people should feel welcome in the programme regardless of

gender, ethnic background or social class. A critical aspect of any programme is the quality of the staff. Rogers-Gould (in Institute for Aerobic Research, 1987:26) supported this when she wrote that the instructor plays an important role in exercise adherence. Patton et al. (1986:214) reported that the most important element in any health/fitness programme was leadership. With so much depending on the aerobic instructor, it is imperative that effective training takes place to promote the instructor as a vital link in exercise adherence of the aerobic clientele. The aerobic instructor plays a very important role because many individuals need help in exercising safely and in achieving higher fitness levels.

5.3.9.3 RECOMMENDATIONS

It is recommended that training institutions ensure training of the highest quality in order to produce instructors who will in turn give service of the highest quality.

5.3.10 PERCEIVED BENEFITS OF THE AEROBIC CLIENTELE

5.3.10.1 DISCUSSION

The aerobic instructors perceived the benefits of exercise for the aerobic clientele to be health and

fitness improvement, relaxation, socialisation, stress release; enhanced quality of life, prevention of disease, weight loss/gain and body sculpturing. The literature in chapter two revealed that there were many benefits to be derived from a fitness programme. These benefits could be divided into individual and industrial benefits. For the individual there could be an enhanced quality of life. This could mean feeling better, elevation of mood, increased range of experiences, improvement of personal appearance, self-image and health. There could be a lower risk of major health problems and a potential increased life-span. For industry the benefits of a fitness programme could mean the improvement of corporate image, worker satisfaction, productivity, a decrease in absenteeism and employer turnover and reduced injury rate and medical costs.

5.3.10.2 CONCLUSIONS

The benefits of an exercise programme were discussed fully in chapter two. The United States Public Health Service (in Beashel et al., 1992) set health objectives for the year 2000. These included specific goals for improved health status, reduced risk factors, increased public awareness, improved services and protection and improved surveillance and evaluation services. It would appear that the aerobic instructors in this study

formulated a good assessment of the benefits of a fitness programme for the individual, but had no comprehension of the benefits for industry.

5.3.10.3 RECOMMENDATIONS

Patton et al. (1986:83) prescribed a generic health/ fitness delivery system involving needs assessment which had educational and service components, goal setting, planning, programme implementation and evaluations as necessary competences. In order to accomplish these responsibilities it is recommended that the health and fitness instructor possess these competencies and provide a good role model for the clientele.

5.4 THE FITNESS INDUSTRY

5.4.1 STRUCTURE, SERVICES, PROFESSIONAL ORGANISATIONS AND NATIONAL CERTIFICATION

5.4.1.1 DISCUSSION

Fifty three percent of the instructors perceived the fitness industry in South Africa to be efficient, while the remainder were unsure about the efficiency or did not

think the industry was an efficient structure. When asked if there were any inadequacies in the industry, 67% of the instructors thought there were. The reasons given for these inadequacies were no standardisation of training courses or certifications, too many training organisations, the low standard of training, short and inexpensive training courses, insufficient in-service training, low salaries, lack of infrastructure of the industry and the need for increased professionalism within the industry. All of these inadequacies perceived by the aerobic instructors were cause of major concern, and it would appear that controlling bodies were absolutely essential to promote continuity, productivity and efficiency.

5.4.1.2 CONCLUSIONS

It was concluded that a Fitness Industry Federation should be formed. Each section of the Federation could have their particular Association similar to the Fitness Industry Trade Association (FITA). This industry was formed in December 1993. Membership of the industry is open to all suppliers of fitness clothing, footwear and equipment to the retail market (Fitness Industry Trade Association, 1997). Fitness Industry Associations (FIA) exist in Britain and the Aerobic and Fitness Association exists in the United States of America (AFAA).

5.4.1.3 RECOMMENDATIONS

It is recommended that the main objectives of the Fitness Industry Federation should be to raise the level of awareness and profile of the fitness industry. This should provide a strong voice and an industry forum for members in their dealings with other sections of the sports industry, sports bodies, government and other authorities. It should also provide information to members on new regulations and other official developments and to make the necessary representations concerning them. It should run seminars and arrange other training to enable members to run their section of the industry effectively, provide cost-effective services for its members and work with other groups and members within the Federation to promote professionalism and quality.

The sub-sections of the Federation that could have their own associations include fitness training organisations, fitness centre owners/managers as well as aerobic and fitness instructors. This Federation, should establish a code of practice which could vastly improve all the services provided by the fitness industry. One example of good service found on InterNet was the Health/Fitness Industry Calendar of Educational Events in the United States of America (FitnessWorld, 1997).

This calendar information was provided by sponsoring organisations and updated on a monthly basis. From March 1997 to March 1998, 476 educational events were listed. This provides transparency within the industry. Training organisations, for example, are able to assess over marketing in any one regional area or in a particular course and gaps in the market can also be assessed. This could lead to greater productivity and effectiveness.

A further development in the United States of America is the development of FitLinxx Interactive Fitness Network. As developers of club management software they have linked up with Karch International to allow for the sharing of common information and the streamlining of fitness operations across the country. The benefits of FitLinxx are tracking workout information making exercise easier and more enjoyable, and increasing motivation. It also makes available critical data that is central to successful and profitable club management. Their mission is to improve health and wellness through fitness and technology (FitLinxx, 1997). It is recommended that further research be conducted into the market for such a service in South Africa. The need for such service will obviously give an indication of the profit associated with such a venture.

5.5 THE LIFE-WORLD OF THE AEROBIC CLIENTELE

5.5.1 GENDER, AGE AND MARITAL STATUS

5.5.1.1 DISCUSSION

The majority (91%) of the aerobic clients were female and 72% were single. Of this sample 30% were scholars and 19% were students. The greater portion of the sample (62%) were from the age range of 16-30 years. It is noteworthy that such a large number of aerobic participants were female indicating that fitness centres are catering for the needs of women thus attracting them to the centres. This may be recognition that barriers to female participation in physical recreation are decreasing. Factors such as a welcoming atmosphere where facilities are attractive, clean, bright and well sign-posted, and a staff that is helpful and less intimidating, are necessary to break down such barriers.

Other issues such as sessions attracting women with different lifestyles should be carefully timetabled. Sessions for women who tend to doubt their physical capabilities, women instructors particularly when women are beginning or learning new material, and a social area all help to break down barriers and make aerobics

attractive. Child care facilities were reported to be inadequate. It is obvious that women with responsibility for young children have a need for changing, baby feeding and creche facilities. Cleanliness in all these areas is vital. Most issues appear to be adequately addressed by the owners and managers of fitness centres.

Beachel et al. (1992:192) reported a link between participation in sport and different types of work. Semi and unskilled workers were less likely to take part in sport than professional, non-manual and skilled workers. No occupation in the sample was semi or unskilled, thus confirming previous research. It was found the socio-economic status and educational levels had a major impact on patterns of physical activity and these variables were thus likely to influence aerobic fitness status. Poorer and less well-educated individuals were less active, in part because of social conditioning and in part because of physical barriers such as the lack of transport, baby-sitter, or funds for club membership, clothing and equipment. These factors restricted their participation in fitness programmes.

5.5.1.2 CONCLUSIONS

Historically sport was developed by men for men. The male dominated sport club or sporting facility does not fit the culture of women (Beashel, 1992:224). In recent years the development of many non-competitive, movement based activities has increased female participation and interest. Aerobic dance is one such area of movement that has obviously attracted many women. At first aerobic dance was written off by physical educators and health professionals as a fad, but the fact that women in great numbers stuck with an exercise programme for the first time finally provoked attention (Pearl, 1993:2). Although female participation in physical activity has increased over the last 20 years there is still much room for improvement. It was concluded that there needs to be increased public awareness, knowledge and positive attitudes as Pearl (1993:8) reported that women still faced prejudice against their participation in physical activity, and that time was a major obstacle preventing women from regular participation in physical activity.

5.5.1.3 RECOMMENDATIONS

Since the search for an improved body shape as well as health benefits had prompted a large number of women to become physically active in their forties and fifties, it is recommended that further research be conducted in

order to obtain more information about the impact of exercise on this age group.

5.6 AEROBIC INVOLVEMENT

5.6.1 CERTIFICATION IN AEROBIC INSTRUCTION

5.6.1.1 DISCUSSION

The majority (91%) of the aerobic clientele felt that it was necessary and important for the aerobic instructor to be qualified in aerobic instruction. There were seven reasons cited for preferring qualified instructors: injury prevention, enforcement of correct techniques, well structured classes, attainment of the maximum benefit of exercise, informed correction of movement during the class, informed advice at all times and the use of correct and effective teaching methods.

Gardener (in Institute for Aerobic Research, 1987:22) was of the opinion that every person who came to a fitness centre wanted to become competent in an exercise programme. She reported that finding the right combination of incentives to help the client adopt and adhere to an exercise programme was not always an

easy task. She also reported that it was imperative that an aerobic instructor strived to create a warm, non-competitive, enjoyable environment and that he/she developed in him/herself enthusiasm, competence and caring. Williams (in Institute for Aerobic Research, 1987:25) pointed out that it was imperative for an aerobic instructor to be certified and that the instructors ensure that they are properly trained.

5.6.1.2 CONCLUSIONS

Williams (in Institute of Aerobic Research, 1987:25), in addressing ways to remain motivated, mentioned amongst other things the necessity for the aerobic instructor to seek proper training by subscribing to professional magazines and newsletters, attending lectures and training sessions, reading books and listening to tapes, taking classes and networking with other professionals.

5.6.1.3 RECOMMENDATIONS

It is recommended that all aerobic instructors receive a national certification before being allowed to enter into the field of aerobic instruction. After this basic certification instructors should be encouraged to continue education and upgrading through the various channels already mentioned.

5.6.2 CLASS ATTENDANCE

5.6.2.1 DISCUSSION

There appeared to be a sensible approach to exercise among the aerobic clientele with regard to the frequency of exercise in that the majority (94%) of the clientele attended two to six classes of aerobics per week. With reference to chapter two it was well documented that exercise and fitness involve the risk of injury, cardiovascular problems, or death.

5.6.2.2 CONCLUSIONS

It is concluded that the aerobic clients appear to be following a healthy exercise programme in order to achieve a good fitness level. There does not appear to be an overuse of aerobic dance as a form of physical exercise.

5.6.2.3 RECOMMENDATIONS

It is recommended that aerobic instructors be aware of the overuse of aerobic dance as a form of physical exercise, and they should encourage the aerobic clients to exercise sensibly by varying the type of classes they attend and encouraging cross training.

5.6.3 OTHER FORMS OF PHYSICAL ACTIVITY

5.6.3.1 DISCUSSION

Seventy percent of the aerobic clients participated in other forms of exercise. The most common forms of alternative exercise were jogging, weight training, swimming and cycling. As all of these forms of exercise can be done at most fitness centres it would appear that a fair amount of cross training was taking place. This has the advantage of enhancing aerobic clientele motivation and exercise adherence. Ninety one percent of the aerobic clientele reported that their aerobic participation was beneficial to the other forms of exercise in which they participated.

5.6.3.2 CONCLUSIONS

Johnson (in Institute of Aerobic Research, 1988:13) reported that total body conditioning could be achieved through cross training as it involved developing the four major components: aerobic capacity, muscular strength, muscular endurance and flexibility. The emphasis was on comprehensive conditioning in all major muscle groups. Cross training could also be used to improve a single component of fitness, by participating in a number of cardiovascular activities. Other benefits of cross training include the following: it provides variety thus motivating the exerciser to adhere to their exercise programme; it could help prevent injuries and overuse

as cross training reduced total impact forces and spread the stress of work to a variety of muscle groups and anatomical structure; it developed higher levels of fitness as participation in a variety of activities caused the exerciser to recruit new muscle fibres and developed new neuromuscular pathways formerly left untapped; it developed muscle symmetry thus eliminating some risk of certain types of injury, and cross training enhanced weight loss as the exerciser could exercise at moderate intensities for longer periods of time.

5.6.3.3 RECOMMENDATIONS

For all of the previously mentioned reasons it is recommended that the aerobic clients be encouraged to participate in other forms of exercise as well as aerobic dance.

5.6.4 BENEFITS DERIVED FROM AEROBIC PARTICIPATION

5.6.4.1 DISCUSSION

Other benefits that the aerobic clientele cited were: mental well-being, stress release, enjoyment and relaxation, socialisation, weight loss and weight maintenance. This supported the goals of physical fitness as reported by Howley et al. (1992:8). These were to have a positive health base with low risk of

health problems, characterised by favourable inherited characteristics and healthy levels of serum cholesterol, blood pressure, body fat, cardiorespiratory fitness, flexibility, strength and endurance, and the ability to cope with stress.

5.6.4.2 CONCLUSIONS

Howley (1992:6) wrote that the many health problems that were responsible for premature death could be prevented through screening and preventive action. In more affluent sectors of societies, where preventive health care was routine, another set of health problems has emerged, causing premature death or disability. The health problems were related to characteristics that could be modified with one's lifestyle. They included angina, atherosclerosis, back pain, cancer, diabetes, hypertension, poor mental health, obesity, osteoporosis and stroke.

Many of the same characteristics which reduce the risk factors for developing serious health problems also provide a higher quality of life. Having high levels of functional capacity and optimal levels of body fat and stress helped one feel good and have energy to do things which enrich our lives. In addition, having good cardiovascular endurance, muscular strength and

endurance, flexibility and the ability to cope with stress would further enhance one's quality of life. Thus it is concluded that the health and fitness benefits of exercise cannot be overlooked. Howley et al. (1992) reported that one should exercise at low intensity for health, moderate intensity for physical fitness and at a high intensity for performance. The status of the individual might include being alive without disease (health), striving for optimal quality of life (fitness), and possessing the ability to compete in sport at a desired level (performance).

5.6.4.3 RECOMMENDATIONS

If the benefits of physical activity are to be realised in South Africa it is imperative that a subject such as physical education remain part of the core curriculum. Wood (1948:6) remarked on the slow growth of recognition of physical education in South Africa. Two decades later Percival (1967:11-18) wrote pessimistically of its uncertain role in education in Great Britain. More recently Groves (1979:5) referred to the lack of universal recognition of the subject.

In addition to physical education being offered in school from Pre-Primary to Grade 12, the South African Sport Council could follow the example of the British Sports

Council's policy of 1982. The Council published its plan, *Sport in the Community: The Next Ten Years*. The aims included an increase in participation, more and better facilities and improved coaching. In 1988 progress was reviewed and a new plan produced, *Sport in the Community: Into the Nineties*. Again this aimed at improving facilities and participation. However, it also wanted to target young people and women, especially any who were unemployed, from ethnic minorities or disabled (Beashel, 1992:164).

5.6.5 DESIRED TIME AND LENGTH OF AEROBIC CLASSES

5.6.5.1 DISCUSSION

Gardiner (in Institute for Aerobic Research 1987:22) wrote that the scheduling of programmes was very important as inconvenient scheduling was one of the major reasons for dropout cited in the literature on adherence. She suggested that classes should be available early in the morning, during lunch hour and in the early evenings and over the weekends. In the survey, evening classes proved to be the most popular, followed by afternoon classes, then morning and lunch time classes.

The American College of Sports Medicine (1990, 1991)

recommended that aerobic training be practised on 3 to 5 days a week at 50% to 85% of maximum oxygen uptake. Because of musculoskeletal injuries and possible cardiac emergencies, the lower end of the intensity range is recommended for subjects who have a low initial level of fitness. The suggested duration of training is 20 to 60 minutes a session, with longer sessions being adopted for the low intensity programmes. They also recommended that aerobic activities be supplemented by sufficient strength training to maintain the individual's fat free weight. The majority (81%) of the aerobic clientele preferred a one hour class that included both aerobic fitness and strength training. Eighty five percent of the clients reported that their preference was catered for by the fitness centre they belonged to.

5.6.5.2 CONCLUSIONS

It is concluded that the time and length of classes were adequately catered for in the fitness centres involved in this study. Eighty five percent of the clients reported that their preferences were being catered for by the fitness centre they belonged to.

5.6.5.3 RECOMMENDATIONS

It is recommended that in order to cater for all the needs

of the aerobic clientele, forty five minute classes be offered as this was preferred by 14% of the clients in this study. A further recommendation is that afternoon classes be offered as this was preferred by 40% of the clients in the study.

5.6.6 CLASSES PREFERRED BY THE AEROBIC CLIENTELE

5.6.6.1 DISCUSSION

Injury is a potential risk in fitness programmes and aerobic dance is no different. Howley (1992:271) reported that a recent review found that about 44% of the students and 76% of the instructors reported injuries resulting from aerobic dance, with the injury rate being one injury per 100 hours of activity for students and 0.22 to 1.6 injuries per hour for the instructors. Low intensity to moderate intensity workouts could serve to prevent injury. This may be one of the reasons why the majority (73%) of the aerobic clientele preferred a step and floor work class. Another reason may be that it is a relatively new form of workout in the aerobic studio.

5.6.6.2 CONCLUSIONS

It was concluded that there was a low incidence (38%) of all the aerobic clientele's preferences being met. There appeared to be a need for the aerobic instructors

to offer a greater variety of classes as well as offering the type of class preferred by the aerobic client.

5.6.6.3 RECOMMENDATIONS

It is recommended that the training organisations introduce their students to a wide variety of aerobic classes and that aerobic instructors continually address, through surveys, the preferences of their clients.

5.7 AEROBIC INSTRUCTORS

5.7.1 PREFERENCE REGARDING PERMANENT AEROBIC INSTRUCTION

5.7.1.1 DISCUSSION

Eighty three (51%) of the aerobic clientele felt that they would like their instructors to be permanently based at the fitness centre they belonged to. The reason for this appeared to be greater contact with the instructors therefore the instructors would know the clients better.

5.7.1.2 CONCLUSIONS

Many instructors cannot afford financially to teach at one fitness centre as salaries are too low. It is financially more viable to teach at three or four fitness centres.

5.7.1.3 RECOMMENDATIONS

The salary structure in the fitness industry needs to be addressed so that if an instructor wished to teach at a fitness centre on a permanent basis it would be possible. It is also recommended that free-lance instructors make very effort to know their clients.

5.7.2 QUALITIES THAT ARE PRESENT AND QUALITIES THAT ARE LEAST APPARENT

5.7.2.1 DISCUSSION

To obtain and maintain cardiorespiratory fitness a person must participate regularly in some form of dynamic, aerobic and physical activity. Howley (1992:257) reported that the problem was that over 50% of those who began a fitness programme drop out, and that at present only 20% of Americans were involved in regular vigorous physical activity.

In general, better educated, self-motivated individuals who enjoy physical activity and believe in the health outcomes associated with physical activity were more likely to exercise on a regular basis. In contrast, individuals with a high risk of coronary heart disease and who held blue collar jobs were less likely to be involved. It would appear that the ones that need to

exercise were the least likely to become involved (Howley 1992:258).

Personal characteristics are also involved in the decision to exercise. Support from one's family, spouse, peers and physician seems to encourage involvement. Availability of facilities and signing of contracts could be some of the other variables that encourage a person to continue to exercise.

Howley et al. (1992:25) said aerobic leadership meant more than simply taking a class through its paces. There was a need to make the participant feel welcome, generate motivation within the group, and be a friend. To do all these things the instructor must develop interpersonal skills as well as leadership skills.

In the survey the aerobic clientele reported that they would like to see the following qualities in their aerobic instructors: enthusiasm, ability to motivate, striving and upgrading to be a good teacher, professionalism, confidentiality, accessibility, ability to give informed advice and being a good role model. The qualities that the aerobic clientele felt were not apparent in their instructors were: the ability to give informed guidance and advice, accessibility, being a good role model,

professionalism, ability to choose appropriate music, ability to motivate, enthusiasm, to teach well and a sense of humour. This was a cause of great concern as relationship orientated abilities associated with effective leadership are absolutely essential.

5.7.2.2 CONCLUSIONS

Oldridge (in Blair et al., 1988:240) reported that relationship orientated abilities were essential if leadership was to be effective. They included listening skills, attention to individual needs, concern regarding integration of new participants, acceptance of individual differences, attention to group interaction, educational skills, motivational skills with participants and staff, rapport and empathy leading to sensitivity, consistency, honesty, tactfulness and avenues of communication between participants and staff. This study confirmed the need for these qualities among aerobic instructors.

5.7.2.3 RECOMMENDATIONS

It is therefore recommended that these skills and abilities be introduced and developed during the course of training. It is the responsibility of the training organisations and leaders to ensure that potential instructors are introduced to relationship orientated abilities.

5.7.3 PREFERENCE REGARDING FREE-LANCE INSTRUCTION

5.7.3.1 DISCUSSION

The majority (65.4%) of the aerobic clients enjoyed the classes given by free-lance instructors. This free-lance instruction offered variety to the clientele and probably helped with exercise adherence. Twenty five (15.4%) of the clients reported that they did not enjoy free-lance instruction and eighteen of the 25 clients reported that the instructors were exhibitionists while 14 of the clients perceived the instructors to lack enthusiasm.

5.7.3.2 CONCLUSIONS

It is imperative the aerobic instructors conduct themselves professionally at all times. This quality needs to be stressed during the instruction training period.

5.7.3.3 RECOMMENDATIONS

Fitness centre owners should conduct surveys at regular intervals to ensure the needs of their aerobic clientele are being met.

5.8 CLIENTELE EVALUATION

5.8.1 EVALUATION OF MORPHOLOGICAL, PHYSICAL FITNESS AND HEALTH-RELATED ASPECTS

5.8.1.1 DISCUSSION

An important responsibility of the aerobic instructor is to help the potential aerobic participants to determine their current health status before embarking on a fitness programme. This information can be used to refer potential participants to appropriate professional, low- or-moderate intensity exercise programmes, or additional testing. The evaluation of all aspects, namely, morphological, physical fitness, health-related and performance-related aspects have to be addressed as all are related to aerobic instruction. In the survey the aerobic clientele requested more evaluation in the morphological aspects. The clientele perceived the physical aspects to be poorly evaluated and requested more evaluation of the health-related aspects. In performance-related aspects the clients requested that over and under exercising be evaluated alongside correct execution of movement. It would appear that there is a need on behalf of the fitness centre owners and the aerobic instructors to ensure that more

evaluation takes place.

5.8.1.2 CONCLUSIONS

The aerobic instructor should support regular medical examinations, health screening, evaluation of physical fitness components and the development thereof and screening of morphological aspects. Low-to-moderate-intensity exercise and correct execution of movement and guarding against over and under exercising should be encouraged. This information helps distinguish conditions and risk factors. Conditions requiring special attention, extra precautions and unique activities should be closely monitored. In addition, education is needed for fitness participants who are at higher risk of developing serious health problems.

5.8.1.3 RECOMMENDATIONS

In order to achieve a high standard of evaluation in aerobic instruction it is imperative that this be a component of training courses. Once again this is the responsibility of the training organisations and leaders.

5.9 FITNESS INDUSTRY

5.9.1 POPULATIONS THAT ARE BEING PROVIDED WITH AN EFFECTIVE SERVICE

5.9.1.1 DISCUSSION

The population groups perceived to be best served by the industry were the young adult, the middle aged adult and teenagers. The overweight person, the older adult and the person training for sport specific fitness were perceived to be served but not to the same extent as the other three groups. Population groups that were perceived to be poorly served by the industry were children, mothers with children, pregnant women, the handicapped and the person with eating disorders. Cooper (in Institute of Aerobic Research, 1987:6) stated that the clear message for the instructor of the eighties was that regular and vigorous exercise was for everyone. He reported that the recent trends in the profession were low impact aerobics, pre-and-post natal classes, fitness for seniors as well as children, aquatics, cardiac rehabilitation, weight-loss programmes, low back classes, ability-grouped classes and one-on-one training sessions. Cooper reported that these trends reflected the efforts of fitness professionals to individualise programmes for every person according to special needs and interest. The goal was to provide exercise programmes which were safe, effective and enjoyable for everyone.

5.9.1.2 CONCLUSIONS

It has to be concluded that in order for fitness professionals to serve all sections of the population the introduction of a greater number of diverse programmes is required.

5.9.1.3 RECOMMENDATIONS

It is recommended that training organisations introduce and develop components in their training courses that would address this diversity. Workshops and seminars would also have to be conducted in order to cater for the instructors already in the field.

5.10 CONSIDERATION OF HYPOTHESES

Based on the finding of this study all three hypotheses were accepted, namely:

1. Standards of instruction and professionalism within the fitness industry do not permit the achievement of the defined goals and objectives;
2. The services provided within the fitness industry do not meet the needs of the clientele;

3. The contributions of the professional bodies serving the fitness industry are not sufficient to meet the required standards of instruction.

5.11 CHARACTERISTICS OF AN ETHICAL FITNESS INDUSTRY

In conclusion a generic health/fitness delivery system involves needs assessment which have educational and service components, goal setting, planning, programme implementation and evaluations as necessary competences. It is therefore necessary to promote an ethical fitness industry that is founded on both scientific and marketing principles, that produces specialised skills and products, has a service motive and a code of ethics, and finally is concerned with research and scholarship.



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Appendix A

***Letter
Aerobic Instructors' Questionnaire
Follow up Letter***

P O Box 52
Kloof
3640

21 December 1992

Dear

Attached please find a questionnaire for the aerobic instructor. This is part of a survey into **the fitness industry in South Africa**. It is a personal research work for a doctoral thesis and all the data gathered will be analysed scientifically. This information will then be given back to all those involved in the industry. The information gathered will be confidential in that no names of people/gymnasiums/clubs/studios will be required.

The motivation for the thesis is as follows:

No formal research has been reported on the developments and trends within the fitness industry, and as the patronage of the fitness gymnasiums/clubs/studios appears to be more than a passing phase, the need has arisen to conduct a thorough investigation of practices within the industry;

The **main objective** will be to investigate the extent to which the fitness industry is meeting the needs of those it serves, with particular reference to the provision of suitably qualified personnel. A **secondary objective** will be to ascertain how this industry may be improved to better meet the particular spectrum of objectives which have been identified as being desirable for modern society;

Please would you complete the questionnaire and return it to me in the self addressed envelope, before 18 November 1992. If further information is required, please do not hesitate to contact me at the following number: 732253.

Thanking you in anticipation of your co-operation.

Yours in health and fitness

Sincerely

JAN FORBES

QUESTIONNAIRE FOR FITNESS INSTRUCTORS

1. QUALIFICATIONS/CERTIFICATIONS IN AEROBIC INSTRUCTION

Write all your qualifications/certifications and country in which this was/these were obtained, in aerobic instruction, in column 1.1. The professional body through which each qualification/certification was obtained should be shown in column 1.2 The year in which the qualification/certification was obtained in column 1.3 and the duration in years for qualifications and months and hours for certification in column 1.4.

	1.1 Qualifications/ Country	1.2 Professional Body	1.3 Year	1.4 Years/Months/ Hours of Study
1.

2.

3.

4.

5.

6.

7.

8.

2. CONTINUING EDUCATION CREDITS

2.1 Have you received continuing education credits for validation of certain certifications in the last two years.

Place an X in the appropriate space.

Yes	No
.....

2.2 Have you received any “American Council on Exercise” credits in the last two years?

Place an X in the appropriate space.

Yes	No
.....

2.3 Do you think it is a good practice for the professional bodies to insist on continuing education credits for validation of certain certificates?

Place an X in the appropriate space.

Yes	No
.....

3. EVALUATION OF TRAINING

3.1 Indicate the topics that were covered in your training course/s by placing

an X in column A, then circle the appropriate numerical evaluation (as indicated on the five-point scale below) in column B. This evaluation should indicate your assessment of the content of that particular section:

- 5 - Outstanding
- 4 - Good
- 3 - Satisfactory in all aspects
- 2 - Satisfactory with reservations
- 1 - Unsatisfactory

TOPIC	A	B				
Anatomy	1	2	3	4	5
Exercise physiology	1	2	3	4	5
Kinesiology	1	2	3	4	5
Biochemistry	1	2	3	4	5
Exercise psychology	1	2	3	4	5
Principles of training	1	2	3	4	5
Monitoring exercise intensity	1	2	3	4	5
Nutrition and weight control	1	2	3	4	5
Pre and post natal exercise	1	2	3	4	5
Screening, testing and programming	1	2	3	4	5
Role of the instructor	1	2	3	4	5
Leadership skills	1	2	3	4	5
Components of an aerobic-dance exercise class	1	2	3	4	5
Choreography	1	2	3	4	5
Testing and modifying for individual needs	1	2	3	4	5
Teaching styles	1	2	3	4	5
Strength and circuit training	1	2	3	4	5

Judging and evaluation	.....	1	2	3	4	5
Special populations (e.g. Handicapped)	.....	1	2	3	4	5
Injury prevention	.....	1	2	3	4	5
Emergency procedures	.....	1	2	3	4	5
Stress control	.....	1	2	3	4	5
Legal issues	.....	1	2	3	4	5
Management and marketing	.....	1	2	3	4	5

3.1 If other topics were covered, please state and evaluate according to the above numerical evaluation:

TOPIC						
3.2.1	.....	1	2	3	4	5
3.2.2	.....	1	2	3	4	5
3.2.3	.....	1	2	3	4	5
3.2.4	.....	1	2	3	4	5
3.2.5	.....	1	2	3	4	5
3.2.6	.....	1	2	3	4	5

4. **LENGTH OF EXPERIENCE IN TEACHING AEROBIC INSTRUCTION IN YEARS**

How many completed years of experience have you had teaching aerobics:

- 4.1 If permanent, at the present gymnasium/club/studio: years
- 4.2 During entire career? years

5. NATURE OF TEACHING

5.1 On average, how many classes of aerobics do you teach per week?

Place an **x** in the appropriate space.

- 1-2 classes/week
- 2-3 classes/week
- 3-4 classes/week
- 4-5 classes/week
- 5-6 classes/week
- 6-7 classes/week
- 7-8 classes/week
- 8-9 classes/week
- 9-10 classes/week
- 10-11 classes/week
- 11-12 classes/week
- More than 12 classes/week

5.2 Do you teach on a free-lance basis?

Place an **x** in the appropriate space.

- | | |
|------------|-----------|
| Yes | No |
| | |

6. REMUNERATION

6.1 Are you satisfied with the remuneration you receive for teaching aerobics?

Yes

No

.....

.....

6.2 Please indicate into which remuneration (per hour) category you fall.
Place an **x** in the appropriate space.

Remuneration per hour

A.	R30-R40	
B.	R40-R50	
C.	R50-R60	
D.	R60-R70	
E.	R70-R80	
F.	R80-R90	
G.	R90-R100	
H.	Over R100	

6.3 Do you have another job?

Place an **x** in the appropriate space.

Yes

No

.....

.....

6.4 Is this to supplement your income?

Place an **x** in the appropriate space.

Yes

No

.....

.....

6.5 What is this job?

7. **MOVEMENT CONTENT**

Place an **x** in the appropriate space.

7.1 I make use of the following movement content:

Aerobics	
Low impact/floor work	
High impact/floor work	
Low-high combination/floor work	
Aerobics/hand weights	
Aerobics/bands	
Callisthenics	
Jazzercise	
Step-bench training	
Step-bench/floor work	
Step-bench/aerobics	
Step-bench/hand-weights	
Stretch and tone	
Water exercise	
Yoga-aerobics	

7.2 If other movement areas are used, please state below.

Movement Content

7.2.1

7.2.2

7.2.3

7.2.4

8. WEIGHT TRAINING INVOLVEMENT

8.1 Are you involved in the weight training programmes conducted at the gymnasiums/clubs/studios at which you teach?

Yes

No

.....

.....

8.2 If you have answered **Yes**, please indicate in what capacity/capacities.

8.2.1

8.2.2

8.2.3

8.3 Have you obtained any certification/qualification in weight training?

Yes

No

.....

.....

9. THE USE OF TEACHING STYLES

What teaching styles do you use when teaching aerobics?

Please place an **x** opposite the relevant teaching style.

If you do not know what teaching style/s you use, please leave this question blank.

Teaching Styles

- Command Style
- Practice Style
- Reciprocal Style
- Self Check Style
- Inclusion Style

10. FACILITIES

10.1 Please indicate the facilities that are made available to you, for use in your programme, at the various gymnasiums/clubs/studios at which you teach.

Place an **x** in the appropriate space.

Facility

- Change Room
- Hall
- Aerobic/Dance Studio
- Swimming Pool
- Office

Nursery
Social Area
First Aid Area
Lecture Room

10.2 If you have any other facility available to conduct your programme, please list them below.

Facility

10.2.1
10.2.2
10.2.3
10.2.4
10.2.5
10.2.6

11. **EQUIPMENT**

Please indicate the suitability of your equipment supply, according to the rating scale below. Please an **x** in the appropriate column. Bear the size of your largest class in mind when considering your supply.

None	=	No equipment available
Insufficient	=	Gross deficiencies, rendering the equipment barely effective for adequate use
Adequate	=	Some deficiencies evident, but usable for most class work
Good	=	Sufficient for class work, with few evident deficiencies
Excellent	=	A plentiful supply and in good working order

Equipment	None	Insufficient	Adequate	Good	Excellent
Aerobics/ bands
Aerobics/ floorwork
Aerobics/ Handweights
Stepbench/ bands
Stepbench/ floorwork
Stepbench/ Handweights
Water Exercise
Yoga Exercise

12. THE SESSION STRUCTURE

12.1 What structures or categories of activity usually form your standard session format (Example, the warm-up; the aerobic phase; floor exercises/calisthenics and the cool-down)?

Categories of Activity

- 12.1.1
- 12.1.2
- 12.1.3
- 12.1.4
- 12.1.5
- 12.1.6

12.2 Does this format differ according to the specific needs of the class?

- | | |
|------------|-----------|
| Yes | No |
| | |

12.3 If you have answered **yes**, please indicate the groups that need differentiation.

Group

- 12.3.1
- 12.3.2
- 12.3.3
- 12.3.4
- 12.3.5

12.4 What other criteria do you use to differentiate?

- 12.4.1
- 12.4.2
- 12.4.3

12.4.4

12.4.5

13. THE CONTENT OF EVALUATION

What evaluation of clientele is done at the gymnasiums/clubs/studios where you teach?

Place an x in the appropriate space.

13.1 Morphological Aspects

Height (cms)

Body Mass (kilos)

Chest Girth (cms)

Waist Girth (cms)

Postural Characteristics

13.2 Physical Fitness Status

Cardiorespiratory Endurance

Muscular Endurance

Muscular Strength

Body Composition

Flexibility

13.3 Health Related Status

Achilles Tendonitis

Anaemia

Bursitis (friction caused fluid-filled sacs)	.....
Cardiovascular Disease	.....
Cholesterol	.....
Chondromalacia Patella (pain under the patella)	.....
Colds/Flu	.....
Diabetes Mellitus	.....
Hypertension	.....
Low Back Pain	.....
Metatarsalgia (pain in the ball of the foot)	.....
Musculoskeletal Injuries	.....
Neuroma (partial nerve entrapment under foot)	.....
Nutritional Habits	.....
Obesity	.....
Painful Ankles	.....
Shin Splints	.....

13.4 Performance Related

Correct Execution of Movement	.....
Over-exercising	.....
Under-exercising	.....

13.5 Record Cards

Are record cards kept on all the participants at the gymnasiums where you teach?

Place an **x** in the appropriate space.

Yes/All	Yes/Some	No/All	No/Some
.....

13.6 **Other Aspects**

If other aspects are evaluated, please list them in the space provided.

13.6.1

13.6.2

14. **INVOLVEMENT**

14.1 Why have you chosen to become involved as a fitness instructor in the fitness industry?

Please give your reasons in the space provided.

14.1.1

14.1.2

14.1.3

14.1.4

14.1.5

14.2 Do you feel completely equipped to serve the needs of the gymnasium clientele?

Yes	No	Unsure
.....

14.3 If you have answered **no** or **unsure**, please give your reasons in the space provided.

- 14.3.1
- 14.3.2
- 14.3.3
- 14.3.4
- 14.3.5

14.4 What benefits do you think the gymnasium clientele derive from attending a gymnasium/club/studio?

- 14.4.1
- 14.4.2
- 14.4.3
- 14.4.4
- 14.4.5

15. **STRUCTURE OF THE FITNESS INDUSTRY**

15.1 The structure of the fitness industry in South Africa is as follows:

- Training and representative organisations
- Gymnasiums/Clubs/Studios
- Owners/Managers
- Instructors
- Promoters
- Other Personnel

Do you think that this is an efficient structure?

Yes	No	Unsure
.....

15.2 If you have answered **no** or **unsure**, please list your reasons below.

15.2.1

15.2.2

15.2.3

15.2.4

15.2.5

16. **SERVICES**

16.1 Are there any inadequacies in the services provided by the Fitness Industry?

Yes	No	Unsure
.....

16.2 If you have answered **yes** or **unsure**, please give your reasons.

16.2.1

16.2.2

16.2.3

16.2.4

16.2.5

17. PROFESSIONAL/REPRESENTATIVE ORGANISATION

17.1 Do you belong to a professional/representative organisation?

Yes

No

.....

.....

17.2 If you have answered **yes** please list the services your organisation offers.

17.2.1

17.2.2

17.2.3

17.2.4

17.2.5

17.3 Do you use the services provided by your organisation?

Yes

No

.....

.....

18. NATIONAL CERTIFICATION

18.1 Do you think it is necessary to standardise the certification that can be obtained in the Fitness Industry? (All examination candidates write the same examinations irrespective of the training organisation that trained them).

Yes

No

Unsure

.....

.....

.....

18.2 If you have answered **yes**, do you think an organisaiton such as the Human Sciences Research Council could achieve this standardisation thus leading to national certification for the Fitness Industry.

Yes	No
.....

19. **OTHER COMMENTS**

DO YOU HAVE ANY OTHER COMMENTS?

1.	.....
2.	.....
3.	.....
4.	.....
5.	.....

P O Box 52
Kloof
3640

24 February 1993

Dear Aerobic Instructor

If you have returned the questionnaire on developments in the fitness industry, thank you very much for your assistance. Your participation in the research programme is valued.

If you have not returned the questionnaire, please do not discard. . It is not too late for me to pick it up. Information which you supply is essential for this research programme.

I really would appreciate your assistance and trust that you will return the completed questionnaire to your fitness centre as soon as possible.

Thank you once again.

Yours in health and fitness.

Sincerely

JAN FORBES

Appendix B

Letter

Aerobic Clienteles' Questionnaire

Follow up Letter

P O Box 52

Kloof

3640

21 December 1992

Dear

Attached please find a questionnaire for the aerobic clientele. This is part of a survey into **the fitness industry in South Africa**. It is a personal research work for a doctoral thesis and all the data gathered will be analysed scientifically. This information will then be given back to all those involved in the industry. The information gathered will be confidential in that no names of people/gymnasiums/clubs/studios will be required.

The motivation for the thesis is as follows:

No formal research has been reported on the developments and trends within the fitness industry, and as the patronage of the fitness gymnasiums/clubs/studios appears to be more than a passing phase, the need has arisen to conduct a thorough investigation of practices within the industry;

The **main objective** will be to investigate the extent to which the fitness industry is meeting the needs of those it serves, with particular reference to the provision of suitably qualified personnel. A **secondary objective** will be to ascertain how this industry may be improved to better meet the particular spectrum of objectives which have been identified as being desirable for modern society;

Please would you complete the questionnaire and return it to me in the self addressed envelope, before 18 November 1992. If further information is required, please do not hesitate to contact me at the following number: 732253.

Thanking you in anticipation of your co-operation.

Yours in health and fitness

Sincerely

JAN FORBES

QUESTIONNAIRE FOR AEROBIC CLIENTELE

1. GENERAL

- 1.1

Gender

Male, or
Female

.....
.....
- 1.2

Age

.....
- 1.3

What is your marital status?

.....
- 1.4

What is your occupation?

.....

2. QUALIFICATIONS/CERTIFICATIONS IN AEROBIC INSTRUCTION

Place an x in the appropriate space.

- 2.1

Would you like all of your instructors to have qualified in aerobic instruction?

Yes

No

Indifferent

.....

.....

.....
- 2.2

Have you any reasons for answering as you did?

.....
.....

3. CLASS ATTENDANCE

Place an x in the appropriate space.

- 3.1

On average, how many times per week do you attend aerobic classes?

Days

Number of times per Day

Monday

.....

Tuesday

.....

Wednesday

.....

Thursday

.....

Friday

.....

Saturday
Sunday

3.2 Do you supplement your exercise programme with any other form of exercise?

Yes No
.....

3.3 If you have answered **Yes**, please make an **x** opposite the other form/s of exercise you participate in.

- Athletics
- Badminton
- Basketball
- Bowls
- Boxing
- Canoeing
- Cricket
- Cycling
- Dancing
- Football
- Golf
- Gymnastics
- Hiking
- Hockey
- Ice-Skating
- Jogging
- Mountaineering/Rock Climbing
- Netball
- Roller Skating
- Rugby
- Softball
- Snorkelling/Scuba Diving
- Squash
- Surfing/Windsurfing
- Swimming

Tennis	.....
Volleyball	.....
Water Skiing	.....
Weight Training	.....
Wrestling	.....
Yachting/Sailing	.....
Other (Please specify)	.....

3.4 Is your aerobic participation physically beneficial to you in any of the above activities?

Yes	No
.....

3.5 What other benefits do you derive from your aerobic participation?
.....
.....

3.6 What aerobic classes do you usually attend?
Place an x in the appropriate space.

Morning	.....
Lunch Time	.....
Afternoon	.....
Evening	.....

3.7 What is your preferred length of class?
.....

3.8 Does your gymnasium/studio/club offer your preferred option?

Yes	No
.....

4. **MOVEMENT CONTENT**

4.1 What type of class/es do you prefer?
Place an **x** in the appropriate space/s.

Aerobics

Low Impact / Floorwork

High Impact / Floorwork

Low-High Impact / Floorwork

Aerobics / Hand Weights

Aerobics / Bands

Calisthenics

Jazzercise

Step-Bench Training

Step-Bench / Floorwork

Step-Bench / Aerobics

Step-Bench / Hand Weights

Step-Bench-Bands

Stretch and Tone

Water Exercise

Yoga-Aerobics

Other (Please specify)
.....

4.2 Does your gymnasium/club/studio offer your preferences?
Place an **x** in the appropriate space.

Yes/All	Yes/Most	Yes/A few	None
.....

5. **INSTRUCTORS**

5.1 Would you like the instructors who instruct you to be based permanently at the gymnasium/club/studio that you attend?
Place an **x** in the appropriate space.

Yes	No	Indifferent
.....

5.2 List in order of preference the qualities you would like to see in your instructors. (Number 1 to 8)

- Role Model
- Confidence
- Professionalism
- Enthusiasm
- Accessibility/Approachability
- Good Teacher
- Ability to Motivate
- Ability to answer questions / Provide guidance

Other (Please specify)
.....

5.3 What three qualities do you feel are least apparent in your instructors?
They do not have to come from the above list.

- 5.3.1
- 5.3.2
- 5.3.3

5.4 Do you enjoy attending the classes that are given by the free-lance instructors at the gymnasium/club/studio that you attend?
Place and x in the appropriate space.

Yes	No	Indifferent
.....

5.5 If you have answered **NO** please give your reason/s.
.....
.....
.....

6. CLIENTELE EVALUATION

6.1 What evaluation would you like to see being done at the gymnasium/club/studio that you attend and what evaluation is done?

Place an **x** in the appropriate space.

6.1.1 Morphological Aspects	Evaluation that is done	Evaluation that I would like to be done
Height (cms)	.....	.....
Body Mass (kilos)	.....	.....
Chest Girth (cms)	.....	.....
Waist (cms)	.....	.....
Postural Characteristics	.....	.....
6.1.2 Physical Fitness Status	Evaluation that is done	Evaluation that I would like to be done
Cardiovascular Endurance	.....	.....
Muscular Endurance	.....	.....
Muscular Strength	.....	.....
Flexibility	.....	.....
Body Composition (Fat/Lean Ratio)	.....	.....
6.1.3 Health Related Status		
Anaemia	.....	.....
Cardiovascular Disease	.....	.....
Cholesterol	.....	.....
Colds/Flu	.....	.....
Diabetes Mellitus	.....	.....
Hypertension	.....	.....

Low Back Pain	.....	.....
Musculoskeletal Injuries	.....	.....
Nutritional Habits	.....	.....
Obesity	.....	.....
Painful Knees	.....	.....
Other (Please specify)	.....	.....

6.1.4 Performance Related

Correct Execution of Movement	.....	.....
Over-Exercising	.....	.....
Under-Exercising	.....	.....

6.2 How would you rate your gymnasium/club/studio in their evaluation procedures?

Place an x in the appropriate space.

Excellent	.....
Good	.....
Average	.....
Fair	.....
Inadequate	.....

7. AEROBIC INDUSTRY

7.1 Do you think the aerobic industry is providing an effective service for the following population groups?

Place an **x** in the appropriate space if you feel the population group is being effectively served.

- 7.1.1 Children
- 7.1.2 Teenagers
- 7.1.3 Young Adults
- 7.1.4 The middle-aged Adult
- 7.1.5 The older Adult
- 7.1.6 Mother and Child
- 7.1.7 The Pregnant Women
- 7.1.8 The Handicapped
- 7.1.9 Sport specific Training
- 7.1.10 The Overweight Person
- 7.1.11 The Person with eating disorders

7.2 Are there any other population groups that could be served by the aerobic industry? Please list.

.....

.....

8. **OTHER COMMENTS**

Do you have any other comments?

.....

.....

P O Box 52
Kloof
3640

24 February 1993

Dear Aerobic Client

If you have returned the questionnaire on developments in the fitness industry, thank you very much for your assistance. Your participation in the research programme is valued.

If you have not returned the questionnaire, please do not discard it. It is not too late for me to pick it up. Information which you supply is essential for this research programme.

I really would appreciate your assistance and trust that you will return the completed questionnaire to your fitness centre as soon as possible.

Thank you once again.

Yours in health and fitness.

Sincerely

JAN FORBES

Appendix C
Tables

AEROBIC INSTRUCTOR'S QUESTIONNAIRE

QUESTION 1

Instructor	Qualifications	Instructor	Qualifications
1	1	25	5
2	4	26	3
3	2	27	1
4	2	28	2
5	3	29	3
6	3	30	3
7	6	31	2
8	2	32	0
9	7	33	1
10	5	34	1
11	6		
12	6		
13	2		
14	3		
15	1		
16	0		
17	5		
18	1		
19	3		
20	5		
21	9		
22	3		
23	7		
24	1		
		Total Number of Qualifications	110

Question 1.1

Pie Chart Indicating the gender of the Aerobic Clientele

GENDER	PERCENTAGE
Male	9
Female	91

Question 1.2

AGE CATEGORIES	NUMBER OF CLIENTS	PERCENTAGE OF CLIENTS
A	14	9
B	60	37
C	25	15
D	13	8
E	11	7
F	14	9
G	13	8
H	12	7
SUM	162	

Question 1.3

MARITAL STATUS	NUMBER OF CLIENTS	PERCENTAGE OF CLIENTS
Single	116	72
Married	38	23
Divorced	8	5

Question 1.4

OCCUPATION	NUMBER OF CLIENTS	PERCENTAGE OF CLIENTS
A Unemployed	1	0.6
B Manager/ess	6	4
C Teacher	11	7
D Occupational Therapist	1	0.6
E Clerk	4	3
F Sales Person	3	2
G Housewife	18	11
H Nurse	2	1
I Secretary	20	12
J Director	2	1
K Accountant	2	1
L Representative	2	1
M Lecturer	3	2
N Caterer	1	0.6
O Scholar	48	30
P Student	31	19
Q Assessor	1	0.6
R Civil Engineer	1	0.6
S Advertising Consultant	1	0.6
T Bookkeeper	1	0.6
U Credit Controller	1	0.6
V Personnel Officer	1	0.6
W Laboratory Assistant	1	0.6

QUESTION 2

Question 2.1

Continuing Education Credits

Education Credits in last two years

YES	%	NO	%
18	52,9	16	47,1

Question 2.2

American Council Credits in last two years

YES	%	NO	%
9	26,5	25	73,5

Question 2.3

Is it good practice for professional bodies to insist on continuing education credits for certain certificates:

YES	%	NO	%
100	100	0	0

QUESTION 3

TOPICS	SYMBOLS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Anatomy	A	2	2	1	4	4	4	4	4	4	4	3	5	5	4	3	0	4	5	4	4
Exercise Physiology	B	2	1	1	3	3	3	4	3	4	4	4	5	3	3	4	0	4	5	3	4
Kinesiology	C	1	1	2	3	3	3	3	4	4	4	2	0	0	3	0	0	3	0	2	4
Biochemistry	D	0	1	3	2	0	2	3	0	4	4	3	5	0	2	0	0	1	0	1	0
Exercise Psychology	E	0	2	2	0	0	3	4	3	5	4	1	5	0	2	2	0	3	4	1	4
Principles of Training	F	3	1	1	0	3	3	4	4	5	4	3	5	3	4	3	0	2	4	3	4
Monitoring Exercise Intensity	G	3	1	1	2	2	3	2	3	5	3	4	5	0	3	3	0	2	5	5	4
Nutrition and Weight Control	H	3	1	2	0	1	4	2	3	5	4	3	5	0	3	0	0	3	5	4	4
Pre and Post Natal Exercise	I	5	1	3	0	0	4	2	4	5	3	4	0	0	4	0	0	2	0	4	5
Screening Testing Programming	J	3	1	2	0	0	3	0	3	5	3	3	5	0	4	3	0	2	4	5	4
Role of the Instructor	K	4	2	1	4	3	5	4	3	5	4	3	5	4	4	4	0	3	5	5	3
Leadership Skills	L	4	1	1	2	2	5	4	3	5	4	3	5	0	4	4	0	4	5	4	3
Components of Aerobic Class	M	4	1	1	3	0	5	4	3	5	4	4	5	4	5	4	0	3	0	5	4
Choreography	N	2	2	2	2	0	5	3	3	5	3	1	5	5	4	5	0	3	4	5	5
Test/Modify your individual Needs	O	2	2	2	2	2	4	0	3	5	3	3	5	0	3	3	0	2	3	4	4
Teaching Styles	P	0	2	2	0	2	5	0	3	5	3	1	5	4	3	5	0	1	5	5	4
Strength Circuit Training	Q	1	1	2	2	0	3	0	3	5	3	1	5	0	2	2	0	3	5	3	2
Judging and Evaluation	R	0	2	2	0	0	2	0	0	4	3	1	5	0	0	0	0	2	4	3	4
Special Populations	S	0	1	1	0	0	0	0	0	3	2	2	0	4	4	0	0	2	0	2	4
Injury Prevention	T	3	2	1	4	2	3	4	3	4	2	2	5	5	5	3	0	4	0	4	4
Emergency Procedures	U	2	1	1	4	1	2	0	4	4	2	3	5	0	5	4	0	3	0	4	4
Stress Control	V	0	1	2	0	0	2	0	3	4	3	2	5	0	3	1	0	1	0	3	4
Legal Issues	W	2	1	2	0	0	2	0	0	3	3	3	2	0	0	0	0	1	0	2	3
Management and Marketing	X	2	2	2	0	1	2	3	0	3	3	2	3	0	0	0	0	0	0	1	3
Public Relations	Y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
TOTAL		48	33	40	37	29	77	50	62	106	79	61	100	37	74	53	0	58	63	83	91
OVERALL EVALUATION OF TRAINING		2	1	2	1	1	3	2	2	4.2	3	2	4	1	3	2	0	2	3	3	4

21	22	23	24	25	26	27	28	29	30	31	32	33	34	TOTAL	AVERAGE	SYMBOLS	TOPICS
5	4	3	4	5	4	4	4	5	3	5	0	4	0	120	3.75	A	Anatomy
5	4	3	3	4	3	0	4	3	3	5	0	3	0	130	3.22	B	Exercise Physiology
5	4	3	3	3	3	0	4	0	3	5	0	4	0	79	2.47	C	Kinesiology
0	3	2	0	2	0	0	4	0	3	5	0	0	0	50	1.56	D	Biochemistry
4	4	4	4	2	0	0	3	3	3	5	0	0	0	77	2.41	E	Exercise Psychology
4	4	4	5	3	5	3	3	3	3	5	0	2	0	103	3.22	F	Principles of Training
4	4	4	4	4	3	0	4	2	3	5	0	3	0	96	3.00	G	Monitoring Exercise Intensity
5	3	3	2	5	3	0	4	2	3	5	0	0	0	87	2.72	H	Nutrition and Weight Control
3	3	4	0	5	0	0	3	0	2	5	0	0	0	71	2.22	I	Pre and Post Natal Exercise
4	3	4	0	4	4	0	0	0	2	5	0	0	0	76	2.38	J	Screening, Test, Programming
5	4	4	4	5	5	4	4	4	4	5	0	3	0	122	3.81	K	Role of the Instructor
5	4	5	4	5	4	3	4	3	4	5	0	0	0	109	3.41	L	Leadership Skills
4	3	4	5	5	4	0	4	4	5	5	0	3	0	110	3.44	M	Components of Aerobic Class
4	3	5	4	5	3	2	3	4	5	5	0	3	0	110	3.44	N	Choregraphy
4	4	3	3	5	3	0	4	3	2	5	0	0	0	88	2.75	O	Test/Modify for Individual Needs
3	3	3	0	5	4	0	4	4	5	5	0	3	0	94	2.94	P	Teaching Styles
4	2	3	0	2	0	0	3	2	4	5	0	3	0	71	2.22	Q	Strength and Circuit Training
5	2	4	3	2	4	0	0	0	3	0	0	0	0	55	1.92	R	Judging and Evaluation
3	2	5	0	2	3	0	3	2	2	0	0	0	0	45	1.41	S	Special Populations
5	4	4	5	5	5	3	4	3	4	5	0	3	0	110	3.44	T	Injury Prevention
5	4	2	4	5	5	4	4	3	2	5	0	4	0	96	3.00	U	Emergency Procedures
4	4	3	3	4	5	0	4	0	3	5	0	0	0	69	2.16	V	Stress Control
5	4	2	0	2	0	0	3	0	2	0	0	0	0	42	1.32	W	Legal Issues
5	4	3	1	3	0	0	0	0	1	0	0	0	0	44	1.38	X	Management and Marketing
5	4	0	0	0	0	0	0	0	0	0	0	0	0	13	0.41	Y	Public Relations
105	87	84	61	92	70	23	77	48	74	100	0	38	0				TOTAL
4.2	3	3	2	4	3	1	3	2	3	4	0	2	0		2.415294		AVERAGE

Question 3.4

CATEGORY	NUMBER OF CLIENTS	PERCENTAGE
Yes	110	91
No	11	9

Question 3.5

BENEFITS	NUMBER OF CLIENTS	PERCENTAGE
A Weight Loss	11	7
B Weight Control	11	7
C Stress Release	33	20
D Health and Fitness	97	60
E Socialisation	20	12
F Enjoyment and Relaxation	29	18
G Mental Well Being	46	28

Question 3.6

TIME OF CLASS	NUMBER OF CLIENTS	PERCENTAGE
Morning	29	18
Lunch Time	8	5
Afternoon	65	40
Evening	96	59

Question 3.7

LENGTH OF CLASS		NUMBER OF CLIENTS	PERCENTAGE
A	Forty Five Minutes	22	14
B	One Hour	132	81
C	One and a Half Hours	3	2
D	Two Hours	5	3

Question 3.8

CATEGORY		NUMBER OF CLIENTS	PERCENTAGE
Yes		137	85
No		25	15

QUESTION 4

Question 4.1

Permanent	Instructors	Permanent	Instructors
1	1	0	23
0	2	1	24
0	3	0.5	25
1	4	5	26
3	5	0	27
2	6	2	28
0	7	0	29
7	8	0	30
12	9	7	31
6	10	0	32
0	11	0	33
4	12	0	34
0	13	66.5	
0	14	Mean 7.82	
0	15		
0	16		
0	17		
6	18		
0	19		
2	20		
4	21		
3	22		

Question 4.2

Total Experience	
5	4
6	1
12	14
3	24
5	4
6	2
11	5
8	8
15	15
6	1
9	2
10	1
3	2.66
3	Mean 7.82
8	
8	
5	
30	
10	
7	
12	
3	

QUESTION 5

Question 5.1

Question 5.2 Free Lance Teaching

Classes	Classes Taught per week	Classes	Classes Taught per week	Free Lance	Percent	Instructors
10	13	1	21	Yes	70.6	24
13	6	2	22	No	29.4	10
10	10	3	23			
8	5	4	24			
3	7	5	25			
5	4	6	26			
2	13	7	27			
4	2	8	28			
10	7	9	29			
13	6	10	30			
13	6	11	31			
4	5	12	32			
6	7	13	33			
13	13	14	34			
2		15				
2	Mean 8.272	16				
13		17				
13		18				
12		19				
12		20				

QUESTION 6

Question 6.1 : Remuneration Satisfaction

	Percent	Instructors
Yes	32.4	11
No	67.6	23

Question 6.2 : Payment per Hour

Remuneration	Instructors	Remuneration	Instructors
30	1	50	22
50	2	50	23
40	3	30	24
50	4	50	25
40	5	50	26
30	6	40	27
30	7	40	28
40	8	40	29
60	9	40	30
40	10	40	31
50	11	30	32
100	12	40	33
40	13	40	34
60	14		
40	15	1540	
50	16		
60	17	Mean 45.29	
50	18		
50	19		
40	20		
50	21		

Question 6.3 : Do you have another Job?

Yes	%	No	%
20	58.82	14	41.18

Question 6.4 : Is this to supplement your income?

13	65	7	35
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Question 6.5 : What is this Job?

None	14
Teacher	3
Lecutrer	1
Home Employed	1
Personal Relations Officer	1
Gymnasium Manageress	1
Administrator	2
Student	1
Computer Programme	1
Weight Trainer	4
Sales Person	2
Personal Trainer	1
Secretary	2

QUESTION 7

Movement Content	Pecentage	Instructors
A	82	28
B	56	19
C	88	30
D	76	26
E	44	15
F	47	16
G	12	4
H	79	27
I	50	17
J	50	17
K	82	28
L	26	9
M	3	1
N	9	3
O	0	0
P	3	1
Q	9	3

QUESTION 8

Question 8.1

Are you involved in the weight training programme?

YES	%	NO	%
6	17.65	28	82.35

Question 8.2

In what capacity?	%	Instructors
None	82	28
Instructor	12	4
Consultant	3	1
Personal Trainer	3	1

Question 8.3

Instructors qualified in weight training?

YES	%	NO	%
2	5.88	32	94.12

QUESTION 9

Teaching Style		%
Nil return	23	67.65
Command Style	10	90.91
Practice Style	8	72.73
Reciprocal Style	3	27.27
Self Check Style	6	54.55
Inclusion Style	5	45.46

QUESTION 10

FACILITIES	%	INSTRUCTORS
A	79	27
B	29	10
C	71	24
D	26	9
E	62	21
F	24	8
G	41	14
H	18	6
I	12	4

ADDITIONAL FACILITIES	%	INSTRUCTORS
J	0	0
K	6	2
L	6	2
M	6	2
N	3	1
O	3	1
P	3	1
Q	3	1

QUESTION 11

APPARATUS	PERCENTAGE
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A	35
B	72
C	65
D	63
E	29
F	65
G	61
H	15
I	0

QUESTION 12

Question 12.1

AEROBIC STRUCTURE	INSTRUCTORS	%
Session A	28	85.29
Session B	5	14.71

Question 12.2

Does format change?

YES	%	NO	%
32	94.12	2	5.88

QUESTION 13

Question 13.1

	MORPHOLOGICAL ASPECTS	PERCENTAGE
A	Height	56
B	Body Mass	74
C	Chest Girth	59
D	Waist Girth	62
E	Postural Characteristics	44

Question 13.2

	PHYSICAL FITNESS COMPONENTS	PERCENTAGE
A	Cardiorespiratory Edurance	50
B	Muscular Endurance	44
C	Muscular Strength	41
D	Body Composition	50
E	Flexibility	47

Question 13.3

	HEALTH RELATED ASPECTS	PERCENTAGE
A	Achillis Tendonites	18
B	Anaemia	21
C	Bursites	9
D	Cardiovascular Disease	26
E	Cholestoral	35
F	Chondremalacia Patella	15
G	Colds/Flu	25
H	Diabetis Mellitus	26
I	Hypertension	32
J	Lower Back Pain	35
K	Metatarsalgia	12
L	Musculskeletal Injuries	21
M	Neuroma	12
N	Nutritional Habits	38
O	Obesity	47
P	Painful Ankles	35
Q	Shin Splints	41

Question 13.4

	PERFORMANCE RELATED ASPECTS	PERCENTAGE
A	Correct Execution	74
B	Over Exercising	50
C	Under Exercising	50

Question 13.5

RECORD KEEPING

PERCENTAGE

Yes - All	27	
Yes - Some		35
No - All	38	

Question 15.1

PIE CHART SHOWING EFFICIENCY

YES	NO	UNSURE
53	32	15

INEFFICIENCY

Reasons	Percentage
A	50
B	44
C	50
D	56
E	25
F	50
G	13
H	19
I	44
J	75

Question 16.1

Inadequacies in the Industry.

YES	NO	UNSURE
67	24	9

Question 16.2

Reasons for Inadequacies in the Aerobic Industry

REASONS	PERCENTAGES
A	87
B	74
C	62
D	61
E	48
F	9
G	4

Question 17.1

Membership to a Professional Organisation

YES	NO
65	35

Question 17.2

Services provided by the Organisation

SERVICES	PERCENTAGES
A	14
B	82
C	86
D	59
E	77
F	18
G	32

Question 17.3

Instructors using the Services

YES	NO
86	14

Question 18.1

Indication of Instructors who think it necessary to standardise certifications.

YES	NO	UNSURE
79	15	6

Question 18.2

Instructors who believe The Human Sciences Research Council can aid in Standardisation.

YES	NO
68	32

Question 18.3

Concencus of comments by Instructors

CONCERN	PERCENT
A	15
B	6
C	56
D	21
E	24
F	65
G	56

AEROBIC CLIENTELE'S QUESTIONNAIRE

QUESTION 1

Question 1.1

Pie Chart Indicating the gender of the Aerobic Clientele

GENDER	PERCENTAGE
Male	9
Female	91

Question 1.2

AGE CATEGORIES	NUMBER OF CLIENTS	PERCENTAGE OF CLIENTS
A	14	9
B	60	37
C	25	15
D	13	8
E	11	7
F	14	9
G	13	8
H	12	7
SUM	162	

Question 1.3

MARITAL STATUS	NUMBER OF CLIENTS	PERCENTAGE OF CLIENTS
Single	116	72
Married	38	23
Divorced	8	5

Question 1.4

OCCUPATION	NUMBER OF CLIENTS	PERCENTAGE OF CLIENTS
A Unemployed	1	0.6
B Manager/ess	6	4
C Teacher	11	7
D Occupational Therapist	1	0.6
E Clerk	4	3
F Sales Person	3	2
G Housewife	18	11
H Nurse	2	1
I Secretary	20	12
J Director	2	1
K Accountant	2	1
L Representative	2	1
M Lecturer	3	2
N Caterer	1	0.6
O Scholar	48	30
P Student	31	19
Q Assessor	1	0.6
R Civil Engineer	1	0.6
S Advertising Consultant	1	0.6
T Bookkeeper	1	0.6
U Credit Controller	1	0.6
V Personnel Officer	1	0.6
W Laboratory Assistant	1	0.6

Question 2.1

CATEGORY	NUMBER OF CLIENTS	PERCENTAGE OF CLIENTS
Yes	47	91
No	3	2
Indifferent	12	7

Question 2.2

REASONS	NUMBER OF CLIENTS	PERCENTAGE
A Correct Class Structure	59	36
B Injury Prevention	107	66
C Correct Technique	70	43
D Informed Correction of Movement	36	22
E Use of correct Teaching Methods	26	16
F Informed advice given at all Time	32	20
G Ability to obtain optimum benefit from Exercise	40	25

Question 3.1

NUMBER OF CLASSES PER WEEK	NUMBER OF CLIENTS	PERCENTAGE
1	0	0
2	21	13
3	42	26
4	34	21
5	30	19
5	26	16
7	0	0
8	7	4
9	0	0
10	0	0
11	0	0
12	2	1

Question 3.2

OTHER PHYSICAL ACTIVITY	NUMBER OF CLIENTS	PERCENTAGE
Yes	121	75
No	41	25

Question 3.3

FORM OF PHYSICAL ACTIVITY		NUMBER OF CLIENT	PERCENTAGE
A	Athletics	10	8
B	Action Cricket	1	1
C	Badminton	3	3
D	Canoeing	1	1
E	Cycling	21	17
F	Dancing	14	12
G	Football	3	3
H	Gymnastics	2	2
I	Hiking	7	6
J	Hockey	15	12
K	Jogging	54	45
L	Netball	8	7
M	Rollerbladding	2	2
N	Snorkelling	4	3
O	Squash	10	8
P	Swimming	39	32
Q	Tennis	18	15
R	Tenpin Bowling	2	2
S	Volleyball	1	1
T	Water skiing	1	1
U	Weight Training	41	34
V	Walking	13	11

Question 4.1

MOVEMENT CONTENT	NUMBER OF CLIENTS	PERCENTAGE
A Low Impact / Floorwork	37	23
B High Impact / Floorwork	87	54
C Low High Impact / Floorwork	85	52
D Aerobics / Handweights	91	56
E Aerobics : Bands	29	18
F Callisthenics	25	15
G Jazzercise	13	8
H Step Bench / Aerobics	84	52
J Step Bench / Handweights	56	35
K Step Bench / Bands	18	11
L Stretch and Tone	69	43
M Aquacise	26	16
N Yoga-Aerobics	10	6
O Slide	5	3
P Funk	5	3

Question 4.2

CATEGORIES	NUMBER OF CLIENTS	PERCENTAGE
A All	61	38
B Most	68	42
C A few	33	20

Question 5.1

CATEGORIES	NUMBER OF CLIENTS	PERCENTAGE
Yes	83	51
No	13	8
Indifferent	66	41

Question 5.2

QUALITIES		MARKS	MEAN	%	
A	Role Model	856	5,3	66	8
B	Confidence	648	4	50	5
C	Professionalism	550	3,4	42	4
D	Enthusiasm	480	3	37	1
E	Approachability	746	4,6	58	6
F	Good Teacher	529	3,3	41	3
G	Ability to Motivate	528	3,3	41	2
H	Provide Informed Guidance	766	4,7	59	7

Question 5.3

QUALITIES	NUMBER OF CLIENTS	PERCENTAGE
A Ability to vary Movement	20	12
B Ability to answer questions, give advice	27	17
C Ability to choose appropriate music	17	10
D Ability to be a good role model	19	12
E Good Teacher	10	6
F Professionalism	18	11
G Accessibility	23	14
H Enthusiasm	13	8
I Ability to Motivate	17	10
J Sense of Humour	8	5

Question 5.4

CATEGORY	NUMBER OF CLIENTS	PERCENTAGE
Yes 106	65.43	
No	25	15.43
Indifferent	31	19.13

Question 5.5

CATEGORY	NUMBER OF CLIENTS	PERCENTAGE
Exhibitionist	18	72
Lack of Enthusiasm	14	71

Question 6.1

EVALUATION THAT IS CURRENTLY BEING DONE

Question 6.1.1.

MORPHOLOGICAL ASPECT	NUMBER OF CLIENTS	PERCENTAGE
A Height (cm)	71	44
B Body Mass (kilo)	92	57
C Chest Girth (cm)	61	38
D Waist (cm)	65	40
E Postural Characteristics	31	19

Question 6.1.2

PHYSICAL FITNESS ASPECTS

F Cardiovascular Endurance	52	32
G Muscular Endurance	30	19
H Muscular Strength	31	19
I Flexibility	32	20
J Body Composition (Fat/Lean Ratio)	66	41

Question 6.1.3

HEALTH RELATED ASPECTS		NUMBER OF CLIENTS	PERCENTAGE
K	Anaemia	12	74
L	Cardiovascular Disease	17	10
M	Cholesterol	22	14
N	Colds/Flu	19	12
O	Diabetes Mellitus	12	74
P	Hypertension	14	9
Q	Low Back Pain	22	14
R	Musculoskeletal Injuries	15	9
S	Nutritional Habits	38	23
T	Obesity	24	14
U	Painful Knees	20	12

Question 6.1.4

PERFORMANCE RELATED

V	Correct Execution of Movement	149	92
W	Over exercising	38	23
X	Under exercising	35	22

EVALUATION THAT CLIENTS WOULD LIKE EVALUATED

Question 6.2.1

MORPHOLOGICAL ASPECT	NUMBER OF CLIENTS	PERCENTAGE
A Height (cm)	77	48
B Body Mass (kilo)	100	62
C Chest Girth (cm)	62	38
D Waist (cm)	85	52
E Postural Characteristics	73	45

Question 6.2.2

PHYSICAL FITNESS ASPECTS

F Cardiovascular Endurance	104	64
G Muscular Endurance	74	46
H Muscular Strength	73	45
I Flexibility	82	51
J Body Composition (Fat/Lean Ratio)	103	64

Question 6.2.3

HEALTH RELATED ASPECTS		NUMBER OF CLIENTS	PERCENTAGE
K	Anaemia	41	25
L	Cardiovascular Disease	45	28
M	Cholesterol	95	59
N	Colds/Flu	47	29
O	Diabetes Mellitus	32	20
P	Hypertension	81	50
Q	Low Back Pain	96	59
R	Musculoskeletal Injuries	52	32
S	Nutritional Habits	101	62
T	Obesity	94	58
U	Painful Knees	87	53

Question 6.2.4

PERFORMANCE RELATED

V	Correct Execution of Movement	154	95
W	Over exercising	131	81
X	Under exercising	123	76

Question 6.3

CLIENTELE'S EVALUATION OF THEIR FITNESS CENTRE EVALUATION PROCEDURES

CATEGORIES	NUMBER OF CLIENTS	PERCENTAGE
A Excellent	11	7
B Good	28	17
C Average	73	45
D Fair	13	8
E Inadequate	37	23

QUESTION 7

POPULATION GROUP	NUMBER OF CLIENTS	PERCENTAGE
A Children	35	22
B Teenagers	123	76
C Young Adults	148	91
D The Middle aged Adult	136	84
E The Older Adult	87	54
F Mother and Child	19	12
G The Pregnant Women	36	22
H The Handicapped	17	10
I Sport Specific Training	74	96
J The Overweight Person	93	57
K The Person with eating disorder	16	10