

Sensation Seeking and Participation

in Aerobic Exercise Classes

BY

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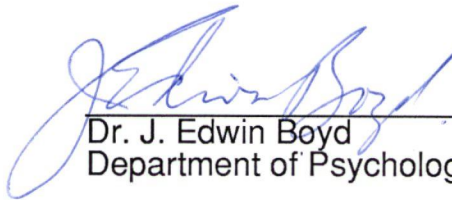
The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Sensation Seeking and Participation in Aerobic Exercise Classes", submitted by Theresa J. Babbitt in partial fulfillment of the requirements for the degree of Master of Science.



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ABSTRACT

The structured and regimented nature of aerobic exercise classes led to the hypotheses that there would be more low than high sensation seekers attending the classes, and that negative correlations would be observed between sensation seeking and (a) duration/regularity of attendance and (b) the length of time spent at a particular club. Positive correlations were expected between sensation seeking and (a) the number of different aerobics clubs to which participants had belonged, (b) the number of other sports, besides aerobics, in which individuals were involved, (c) the use of aerobics as conditioning/training for another sport, (d) the number and severity of injuries due to aerobics classes, (e) taking advantage of the aerobics class setting to socialize, and (f) anticipation of quitting aerobics classes for various reasons.

One hundred seventy-seven females and 48 males, enrolled in aerobic exercise classes at one of 13 local facilities, participated in this study by responding to Zuckerman's (1979) Sensation Seeking Scale, Form V, and a questionnaire regarding their aerobics activities, The Aerobics Exercise Questionnaire, (e.g., patterns of attendance, motivations for starting and continuing, participation in other sports activities, social aspects, injury, possible reasons for quitting).

The results indicated that low sensation seekers are more likely to be enrolled in aerobic exercise classes. In addition, both males and females responded to the items on the Aerobics Exercise Questionnaire in a pattern consistent with the low sensation seeking model. Most

participants reported they had done aerobics for more than one year, attended classes at the same time each week, did aerobics all year round, did not use classes as training/conditioning for another sport, participated in no other or only one other sports activity a week besides aerobics, scheduled their other activities around classes, and did not see themselves quitting in the foreseeable future. This low sensation seeking pattern of responding was consistent across clubs, whether it cost less than \$100 or over \$400 to attend classes three times a week for one year.

A factor analysis of the Aerobic Exercise Questionnaire data for females suggested that high sensation seekers were involved in aerobic exercise classes for specific reasons, while low sensation seekers provided no consistent rationale for attending. The four factors implied aerobics classes provided (a) an activity in which to become involved/committed, (b) a chance to lose weight, (c) the opportunity to socialize, and (d) a place to train/condition for another sport.

The relevance of these findings are discussed in terms of (a) their impact on the general sensation seeking literature, (b) the obsessive-compulsive personality dimension to better understand the aerobics participant, (c) the use of the information gathered to establish an exercise program which would gain wider use, and (d) avenues for further research.

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A word of gratitude must also go to my parents who have supported and encouraged my endeavors and decisions. They taught me, among many other things, to evaluate my endeavors and decisions not by their outcomes, but by the quality of effort and enthusiasm with which they are undertaken.

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INTRODUCTION

General Introduction

The interest in why individuals behave as they do has had a lengthy history in psychology. The early studies of human behavior grew out of the assumption Darwin made popular in 1859 with his book, On the Origin of Species. This was that the human population is an extension of the animal population. Humans should be understood as being quantitatively different from animals but not qualitatively different. Since there was assumed to be a biological continuity between humans and animals there should also be a behavioral continuity between them. Studying animal behavior, then, was analogous to studying human behavior.

In 1912, McDougall formally put forth the notion that animals behave as they do because of instincts. Since humans were also considered part of the animal kingdom, they should also have their behavior governed by instincts. He posited ten instincts that were to explain the spectrum of human behavior. He wrote that "instinctive impulses determine the ends of all activities and supply the driving power by which all mental activities are sustained" (p. 44).

McDougall (1908) used instincts to explain all purposive behavior. His logic was as follows: Animals are born with specific instincts that lead them to react in certain ways to specific environments. In the course of carrying out an instinctive behavior, the animal may learn to modify its body movements so as to take better advantage of its environment. McDougall labeled this intelligence. The human is also born with certain

instincts. These instincts are of a general nature. Due to the general nature of humans' instincts, to humans' long immaturity period, and to the power of speech they possess, the possibilities of modification of instincts are very great. This is why man is so much more intelligent than the rest of the animal world.

However, instincts became an overused and underdefined term. Bernard (1924) argued against instincts as being able to account for all behavior. Instincts were both the explanation for the behavior after it was completed as well as being inferred from the behavioral act itself. He criticized the instinct theorists because they were unable to agree on the definition for the word instinct, the listing of what kinds of instincts there were, or even how many there were.

Out of these criticisms and questions about the utility of the instinct concept grew the drive theory. The drive theory dominated studies in motivational psychology for the next thirty years. In the 1920s several researchers put forth the idea that all behavior was motivated by internal tissue irritations called drives. Based on observations and experiments with rats, Moss (1924) and Richter (1922, 1927) stated drives were internal, biological disturbances. These disturbances drove the animal into activity which would restore the internal state to a balanced, undisturbed one. Cannon (1932; cited in Fowler, 1965, p. 11) called this phenomenon the process of attaining homeostasis. Carr (1925) said there were internal regulators that would arouse the central nervous area, which caused the animal to behave in such a manner so as to partake in behavior that ended with the relief of tissue needs. These regulators

were aroused by five primary tissue needs or drives: hunger, thirst, pain, sex, and extreme temperature.

Dashiell (1925) and Nissen (1930) extended the notion of primary drives to secondary or learned drives. Not only could the primary drives arouse animals to engage in regulatory activity, but unfamiliar stimuli paired consistently with a primary drive could also induce the animal to engage in regulatory behavior.

Murray (1937) spoke of drives as synonymous with needs. He defined a need as something characterized by a certain condition that exists at the initiation of an activity which tends to induce activity that at first may be random in nature. This activity is later organized and persists until a situation arises where the conditions existing at the end of the activity contrast significantly, in certain respects, with the conditions existing at the beginning of the activity.

The logical outgrowth of the drive theory was the formalization of drive reduction theory. In order to reduce drive states, animals would learn to engage in specific activities. The reduction of the drive could be considered to be rewarding and, therefore, a theoretical mechanism of reinforcement. Animals would learn which activities to engage in to reduce drive states. Learning as a result of drive reduction was extremely popular and several researchers were able to give merit to the theory (Brown, 1953; Dollard & Miller, 1950; Hull, 1943; Miller & Dollard, 1941; Spence, 1956). On the basis of primary drives an unlimited number of secondary or learned drives could be acquired. The drive reduction theory was very resilient and guided psychological learning research for many

years.

Problems with the drive reduction theory began when the experimenters simply observed the random actions of their subjects. As early as 1925 Tolman had documented the alternating behavior of rodents when placed in a Y or T maze. On one occasion the rodent would choose one pathway at the intersection point, and on the next occasion would choose the other pathway at the intersection point. This alternating behavior of rodents from one trial to the next was a fascinating but unexplainable behavior from the drive reductionist point of view.

Hebb (1955) noticed that chimpanzees had fears that were spontaneous, such as when a clay figure of a human head placed in their cages set off a reaction in the chimpanzees that could only be labeled as fearful. The fears were not learned. Nissen (1930) noted that sexually naive chimpanzees tended not to copulate during mating season, but did engage in cleaning, grooming, and caressing behaviors with each other. They did these activities without the motivation of the sex drive operating. Harlow (1950, 1953) and Harlow, Blazek, and McClearn (1956) reported monkeys would manipulate puzzles in the absence of primary drives. These observations cast considerable doubt on the drive reduction theory being able to account for all behavior.

In conjunction with these observations, researchers began to conduct controlled experiments to show that as well as primary drives associated with tissue needs, there was also an exploratory drive which was triggered by the presence of external stimuli. The alternating behavior of the rodents in the T and Y mazes in several experiments led researchers to

conclude that it was the physical, external stimuli of the maze that triggered the alternating behavior and not a primary drive need (Dennis, 1939; Dennis & Slollenberger, 1934; Montgomery, 1951a, 1951b, 1952a, 1952b, 1952c). Harlow, Harlow and Meyer (1950) showed that monkeys would manipulate a puzzle with no other motivation except to explore the object. Nissen (1930) showed that rats would cross an electrified grid in order to explore a maze on the other side. There was no reinforcement other than being able to explore the other side of the experimental cubicle. These experiments seemed to support the exploratory drive concept.

If the exploratory drive was similar to the primary drives, then the exploratory drive should be able to induce learning of a task in order to be rewarded with exploration. This was shown to occur in several studies with primates and rodents (Butler, 1953; Butler, 1957a, 1957b; Dember, 1956; Montgomery, 1954; Montgomery & Segall, 1955).

The concept of an exploratory drive elicited by external stimuli was called into question by those who believed it was still an internal drive which motivated the animal into exploratory behavior. The internal drive state was one of boredom or satiation. The boredom drive was supported by Glanzer (1953), Walker, Dember, Earl, Fawl, and Karoly (1955), Walker, Dember, Earl, Fliege, and Karoly (1955), and Walker, Dember, Earl, and Karoly (1955).

At this time major advances in the field of neurophysiology were being made. A landmark study conducted by Moruzzi & Magoun (1949; cited in Berlyne, 1960, p. 46) drew attention to the diffuse projection system at the base of the brain called the reticular activating system. This system

acted as an arousal or activating system through which all nervous excitation reached the brain. A study by Olds and Milner (1954) showed that electrical stimulation of various areas of the cortex had a reinforcing effect on the behavior the rat executed prior to the electrical stimulation.

The orientation reaction was also tied into the neurophysiological research with the reticular activating system. For many years it was noted that when an animal was presented with a new stimulus, it pricked up its ears, looked in the direction of the stimulus, and alerted itself to deal with the possible eventualities which the stimulus may have warranted. This is what Pavlov (1927) called the "what is it?" reflex. The orientation reaction can be formally categorized in physical terms: (a) an increase in the sensitivity of the sense organs (e.g., Symons, 1963; cited in Lynn, 1966, p. 2), (b) changes in the skeletal muscles that direct the sense organs, such as an animal turning toward a new sound, (c) EEG changes indicating an increase in arousal, (d) vegetative changes such as vasodilation in the head and vasoconstriction in the limbs, decreases in the respiratory rate, the presence of the galvanic skin response, and variations in the heart rate (e.g., MacLean, 1959; cited in Lynn, 1966, p. 4). There are individual differences in the combination and strength of these responses.

A model for how the orienting reflex works in conjunction with the reticular activating system was described by Sokolov (1960). Incoming stimuli pass up the classical sensory tracts to the cortex and also send excitatory impulses to the reticular system. In the case of novel stimuli, the cortex sends down excitatory impulses to the reticular system. The

reticular system is then impinged on by two sources. The cortex acts as an analyzing mechanism, determining if the incoming stimuli are novel or not. If the stimuli are novel, the reticular system initiates the orienting response.

The orientation response occurs when subjects encounter a stimulus which is different from the ones to which they are accustomed. Berlyne (1960) described the characteristics of the stimuli which would produce an orientation reaction. They are: novelty, intensity, color, conditioned stimuli, surprise, complexity, uncertainty, incongruity, and conflict.

A reconciliation of the two psychological camps, one indicating exploratory behavior was due to external stimuli, and the other which claimed exploratory behavior, was the result of an internal boredom drive was possible because of these physiological breakthroughs. The incorporation of physiology into psychology was a major step in understanding the motivating factors of behavior without having to resort to concepts such as instincts, drive, and drive reduction.

In 1955, Leuba stated that an organism will learn those reactions which produce an optimal level of stimulation of its nervous system. The organism will engage in those activities which increase stimulation when the overall level is low, and engage in those behaviors which decrease stimulation when the overall level is high. The concept of optimal stimulation should be considered relative rather than absolute, and considered in terms of the whole stimulus situation, internal and external, which the animal is in rather than in terms of specific stimuli. Hebb (1955) also supported this concept. He expanded it further by stating

there were two pathways to the brain, a direct projection system and a general arousal one. He called the direct system a cue functioning one that induced a specific response by the animal. The general arousal system was a nonspecific pathway of the central nervous system. When the general arousal was at a low level, cue functioning would also be at a low level. At a moderate level of general arousal, the cue functioning was optimal. At very high levels of general arousal, the cue function again was low due to interference from competing cue functions. The result of Leuba's and Hebb's ideas was the argument for an optimal level of stimulation, and the implication that both an increase and a decrease in arousal could be reinforcing, depending on the situation the animal is in at the time.

Experiments with rodents and primates continued, with some researchers expounding the virtues of the boredom drive (Dember & Fowler, 1958; Glanzer, 1958; Premack, Collier, & Robinson, 1957; Robinson, 1957; Robinson, 1961), while other researchers continued to espouse the exploratory drive theory (Barnes & Baron, 1961; Barnes & Kish, 1958; Barnes & Kish, 1961; Butler, 1957a, 1957b; Crowder & Crowder, 1961; Levin & Forgays, 1959; Stewart, 1960; Zimbardo & Miller, 1958; Zimbardo & Montgomery, 1957).

However, in 1959, White formally called into question the utility of the entire exploratory drive concept for three reasons: (a) since there was supposed to exist an exploratory drive, there should also exist a corresponding tissue need, but there was no identifiable one for the exploratory drive, (b) exploratory drives do not have a climax or

consummatory response to go along with the behavior the animal exhibits, and (c) there was a difficulty in relating the reinforcement involved with exploration to the reduction of a need.

The whole drive concept waned in popularity as the usefulness of the optimal level of stimulation was able to explain behaviors which drive theory could not. Two papers formally introduced the optimal level of stimulation to psychology. Fiske and Maddi (1961) formed eight propositions which summarized their concept of this theory. Propositions 1 - 3 state that arousal level is directly related to the combined impact of all stimuli, both internal and external, at any given moment. Propositions 4 - 5 state that for any given task there is an optimal level of arousal associated with it for obtaining the most effective performance. Propositions 6 - 7 state that there is a cyclical nature to arousal level that corresponds to the sleeping - waking cycle. Proposition 8 states that when the amount of arousal deviates from the normal level or the optimal level for a specific task, the organism will experience negative affect. Positive affect will be experienced when the arousal level is changed to achieve normal levels or the optimal level for the specific task.

Problems with these propositions arose when studies showed that exploration decreased when the animal was confronted with a novel surround for an extended period of time. The positive affect going along with the exploratory behavior should reinforce the animal into continuing its exploratory behavior. But the animal does not continue. As well, with an intertrial interval of 24 hours, the experimental surround should be novel again to the animal. This should increase exploration by the animal

because exploration gives positive affect. But the exploration decreases or stays the same over the testing sessions. Also, in the alternation studies, a rodent which had been exploring a maze arm painted black should be getting a positive affect from that exploration, thus it should choose the black arm at the next trial run when confronting the choosing point. However, the rat chooses the arm that was painted white instead. When a reward is given at the end of one of the arms in the maze, the rodent will still choose the opposite arm on the next choice trial run. Since food is supposedly giving a positive affect to a hungry rat, these findings are paradoxical. When animals were run in alternation studies, only a considerable shock would stop the rodent from exhibiting alternation behavior. When experimenters ran food deprived animals it is assumed the animals were in a high internal arousal state due to hunger. However, the animals continued to alternate, indicating they were under low arousal and seeking to increase it by exploration. The Fiske and Maddi model could explain behavior after it occurred, but was unable to predict behavior. These were questions the findings of a group of researchers posed in regard to Fiske and Maddi's propositions (Fowler, Blond, & Dember, 1959; Fowler, Fowler, & Dember, 1959; Rothkopf & Zeaman, 1952; Zeaman & House, 1951).

Berlyne (1960, 1963) tried to allay the questions raised by the critics of the optimal level of stimulation. He argued that arousal is a U shaped function of stimulus impact. Arousal is high under extremely large amounts of stimulus impact and under extremely low amounts of stimulus impact. He stated that individual differences in personality and variations

from one society to another as well as physiological states and learning play parts in determining the level at which arousal is maintained. Consequently, the arousal level that is optimal will vary from individual to individual and from situation to situation.

Berlyne managed to equate arousal with drive in this manner. His assumption of exposure to constant and unvarying stimuli as a condition of high arousal (high drive), gives a prediction of the effect of exploration on other drive sources. The summation of the hunger drive with the drive due to lack of stimulation, should lead to an increase in exploration. The summing effect would cause the dominant drive to be even more apparent. In the alternation experiments, the dominant drive is the arousal drive because it is exposed to the animal first (at the choice point of the maze) rather than the food, which is presented at the ends of the arms in a T or Y maze. With additional training, where food is continually found in one specific arm of the maze, the animal will become satiated with the exposure to that arm and increase the alternation behavior (Fowler et al., 1959).

Berlyne did not confine himself to the boredom drive concept. He mentioned that even when animals had not experienced stimulus deprivation, they explored or investigated objects. Berlyne designated this type of behavior as a curiosity drive. However, the animal could just as easily have turned its head away from the stimulus, in order to reduce this drive, as explore it. The optimal level of arousal theory had begun to sound much like the drive theory it was supposed to replace.

From another area of psychology came the concept of information

theory (Miller & Frick, 1949). Acquiring information meant being able to reduce uncertainty in the organism (Shannon & Weaver, 1949; cited in Fowler, p. 71). The relationship between information acquisition and curiosity/exploration was an important one for the psychologists struggling with drive and drive theory. An organism will explore a novel surround in order to gain information and therefore reduce the uncertainty regarding its surround. The more novel the surround is, the more information the animal will gain by exploring it.

This research area was explored by Attneave (1954) and Berlyne (1957). They ascertained that the amount of stimulation a visual stimulus would provide to human subjects was a direct function of how much uncertainty the visual stimulus contained. The frequency of response for visual patterns increased progressively over training (showing a learning effect) and varied directly with the degree of complexity, asymmetry, and irregularity of the patterns (showing an informational effect). These studies were made more precise by Jones (1961) and Jones, Wilkinson, and Braden (1961). They used information deprived university students as subjects. Their results showed that the frequency of responses by the subject was positively related to both the length of the subjects' period of information deprivation and the amount of reinforcement the response elicited. Information was the reinforcement the university students sought. Thus, information was the incentive and information deprivation was the drive condition.

Jones (1961) also had some of his subjects food deprived and some shocked, as well as being informationally deprived. The food deprived and

shocked subjects showed higher proportions of response for information reinforcement during the first half of the experiment than the simply informationally deprived students. This is in accord with the summation hypothesis. These findings, taken together, indicate that the organism needs, seeks out, and processes information in order to reduce the arousal caused by information deprivation.

There were still many researchers who continued to accept the concept of the optimal level of stimulation, despite its critics, and looked to sensory deprivation experiments for testing the theory. The optimal level of arousal theory suggests that prolonged deviations from normal levels of arousal should produce emotional, cognitive, and behavioral disturbances. Kish (1955) and Kish and Antonitis (1956) showed that visual, auditory, and tactile stimulation had reinforcing properties. Butler and Alexander (1955) found that monkeys placed in a sensory deprivation box would press a bar to open a window, which let them look out into a sterile laboratory, 40% of the time. Persky, Zuckerman, Basu, and Thornton (1966) had human subjects kept in an isolation chamber where the subjects had access to a television set. The subjects kept the television set on almost continually. The studies by Jones and his colleagues cited earlier can be interpreted within the context of optimal stimulation. Myers, Murphy, and Smith (1963) showed after 48 hours of sensory deprivation, subjects who were allowed access to a propaganda message listened to it more frequently than those subjects kept in a lighted room. Smith and Myers (1966) showed subjects who were sensory deprived for 24 hours listened to a stock market quotation tape more

frequently than subjects who were confined but who had access to television, record music, conversation, reading matter, and other stimulation.

Vernon and McGill (1960) found an association between stimulus seeking and endurance of sensory deprivation. The experiment was three days in duration. Subjects were in sensory deprivation but with access to a viewing box of a simple design which did not change. Subjects who quit the experiment early, spent 13 times as much time looking at the simple design than subjects who were able to stay for the duration of the experiment. Another study of this type was conducted by Zuckerman and Haber (1965). They were attempting to make a connection between the arousal reaction to short term sensory deprivation and response to an auditory or visual response stimuli. The subjects who were highly aroused by the sensory deprivation condition made four times as many responses for the auditory and visual stimuli as those who were not aroused by the sensory deprivation condition. These experiments provided a link between arousal in sensory deprivation and a stimulus need. They suggested the possibility of a stimulus need which could be aroused by sensory deprivation. The type of person who seeks sensory stimulation in sensory deprivation experiments might also show this kind of behavior in other situations outside the laboratory. A scale to predict the arousal level, the response for stimulation, and other reactions in sensory deprivation experiments would be a useful tool in sensory deprivation experiments.

In the early 1960s, Zuckerman explored the idea that individual differences in the reticular activating system might be a factor in

producing the various responses to sensory deprivation situations. The reason for the development of the first Sensation Seeking Scale (SSS) was to test the hypothesis that there was an operational way to measure optimal levels of arousal and stimulation. The first scale, published in 1964, fell short of its goal of predicting which subjects would and which would not quit sensory deprivation experiments.

In the late 1960s the question of how to revise the scale became an important area of work for Zuckerman. Since the first scale asked questions pertaining only to external stimulation, many of the questions regarding internal stimulation had been ignored. Subjects volunteering for sensory deprivation experiments tended to be high sensation seekers. They showed boredom rather than stress once they were in the sensory deprivation chamber. High sensation seeking was shown to correlate with field independence, indicating they were not dependent on external stimulation but on selected situations which would produce new internal sensations and arousal (Zuckerman & Link, 1968). Volunteering for hypnosis and sensory deprivation experiments were new to the high sensation seeker and offered a new experience.

A brief review of how Form I of Zuckerman's SSS became Form V over a period of about eight years would be useful at this point. Form I was constructed on the basis that sensation seeking was a simple sensory need based on the optimal level of stimulation. Items were written in a forced choice format in an attempt to avoid socially desirable response sets. Form I had 54 items on it and was given to 268 male and 277 female university students, and was factor analyzed (Zuckerman, Kolin, Price, &

Zoob 1964). A broad general factor did emerge where 22 of the items loaded 0.30 or higher. These 22 items made up the General Scale.

Form II of the SSS contained 34 items. There were the 22 of the General Scale and 12 other items which had loaded 0.30 for one sex but not for the other. This was given to 640 male and 590 female university students in Japan (Ohkubo, 1974; cited in Zuckerman, 1979, p. 100). There was a good deal of similarity in the percentage endorsement pattern and some degree of similarity in the factor patterns of Japanese and American students.

Another factor analysis was carried out on Form I to see if there would emerge any other factors. The first factor indicated a desire to engage in thrill seeking, risky, activities (Farley, 1967). The remaining three factors were not clearly defined. Using these results, new items were written including ones with attitudes toward sexual activity. Form III consisted of 50 items from Form I and 63 new items.

Form III was given to 160 male and 172 female students at Temple University (Zuckerman, 1971). Four factors emerged. The first factor was thrill and adventure seeking. The second was experience seeking, which seemed to involve a seeking of arousal through the mind and senses. The third factor was disinhibition, which described a more traditional type of sensation seeking through drinking, partying, gambling, and sex. The final factor was boredom susceptibility which reflected an aversion for repetitive experiences, routine work, and dull or boring people.

Form IV of the SSS consists of 72 forced choice items including the General Scale and the four subfactors. The General Scale was not a total

score, but overlapped with three of the subscales. Since the General Scale was unbalanced in its representation of the four factors, a total score consisting of the summation of the four subscales, was deemed to be more useful. Using an English sample of 254 male and 693 females plus the Temple University sample, the goal was to find 10 items for each subscale that had a primary loading of 0.30 or more (Zuckerman, Eysenck, & Eysenck, 1978). Some items were chosen that had lower than a 0.30 loading, but the factor with the highest primary loading for that question was used to categorize it. The result was Form V of the SSS and is its most current form.

Internal reliabilities of the four subscales and the total score for Form V range from 0.56 for the Boredom susceptibility subscale to 0.86 for the total score (Zuckerman et al., 1978). Retest reliabilities after three weeks for the subscales and total score for Form V range from 0.70 for the Boredom susceptibility subscale to 0.94 for the Thrill and adventure seeking subscale and the total score (Zuckerman, 1977; cited in Zuckerman, 1979, p. 111)

To test the validity of the SSS, predictions were established as to which kinds of tests will be related to the new measure. There are several tests available which have attempted to measure the same or a similar construct as the SSS. The correlation between the General Scale and the Change Seeker Index (Garlington & Shimona, 1964) in five studies ranged from 0.56 to 0.70, all significant $p < .0001$ (Acker & McReynolds, 1967; Farley, 1971; Looft & Baranowski, 1971; McCarroll, Mitchell, Carpenter, & Anderson, 1967; McReynolds, 1971). The correlation of the

General Scale with the need for change index of the Jackson Personality Research Form (Jackson, 1967) in three studies ranged from 0.39 to 0.60, all significant $p < .01$ (Acker & McReynolds, 1967; Pearson, 1970; Zuckerman, 1974). Pearson's (1970) Novelty Experience Scale (NES) and Form IV of the SSS in two studies showed the highest correlation between the General Scale and the External sensation scale of the NES. For males, the General Scale and Thrill and adventure seeking subscale correlated primarily with the External sensation scale of the NES. Whereas the General Scale and Experience seeking subscale correlated most highly with the Internal sensation scale of the NES (Waters, 1974; Waters, Ambler, & Waters, 1976).

In four studies correlating the General Scale with the Extraversion scale of the Eysenck Personality Inventory (1964), the lowest correlation was 0.12 and the highest was 0.58, all significant $p < .05$ (Bone & Montgomery, 1970; Farley & Farley, 1967; Farley & Farley, 1970; Zuckerman & Link, 1968). Correlations between Jackson's Personality Research Form (1967) impulsivity index and the SSS in two studies ranged from 0.31 to 0.51, both significant $p < .05$ (Daitzman & Tumilty, 1974; cited in Zuckerman, 1979, p. 150; Zuckerman, 1974). The most consistent correlation found between the SSS and the Minnesota Multiphasic Personality Inventory (Hathaway & McKinley, 1951) was the hypomania scale for prisoners (Blackburn, 1969) and for psychiatric patients (Daitzman & Tumilty, 1974; cited in Zuckerman, 1979, p. 150). These are some of the several examples of the relationship of the SSS to other measures of a similar construct.

Behavioral measures are also a crucial link in assessing the validity of a new scale. High sensation seekers tend to volunteer for experiments such as hypnosis, sensory deprivation, drug taking, encounter groups, and sensitivity groups (Bone, Cowling, & Choban, 1974; cited in Zuckerman, 1979, p. 185; Myers & Eisner, 1974; cited in Zuckerman, 1979, p. 187; Stanton, 1976; Zuckerman, Schultz, & Hopkins, 1967). However, they do not always persevere in these activities. The assumption is they are not satisfied with the stimulation value of the experiments.

Sensation seekers engage in activities that are risky such as parachuting, scuba diving, and fire fighting (Bacon, 1974; cited in Zuckerman, 1979, p. 207; Hymbaugh & Garrett, 1974; Kusyszyn, Steinberg, & Elliot, 1973; cited in Zuckerman, 1979, p. 206). Sensation seekers are drawn to gambling, tend to prefer high odds, and bet more in some types of games (Waters & Kirk, 1968; Zuckerman, 1974; Zuckerman & Kuhlman, 1978; cited in Zuckerman, 1979, p. 212). Sensation seekers are more ready to change locales and entertain the idea of traveling to exotic places (Jacobs & Koeppel, 1974; cited in Zuckerman, 1979, p. 213; Zuckerman, 1979). Negative life stresses have a higher impact on low sensation seekers than on high sensation seekers (Smith, Johnson, & Sarason, 1978).

Though they are not particularly sensitive to simple sensory stimuli (Bone, Choban, & Cowling, 1974; cited in Zuckerman, 1979, p. 221; Kish, Frankel, Masters, & Berry, 1976; Neary, 1973; cited in Zuckerman, 1979, p. 220), high sensation seekers seem to be able to recognize symbols and figures faster than low sensation seekers (Buchsbaum & Murphy, 1974; cited in Zuckerman, 1979, p. 223; Neary & Zuckerman, 1976; Palmer, 1970).

This capacity would enable them to process information more readily than low sensation seekers. Replication of the correlation between sensation seeking and field independence has met with mixed results (Bone, Montgomery, & Cowling, 1974; cited in Zuckerman, 1979, p. 226; Buchsbaum & Murphy, 1974; cited in Zuckerman, 1979, p. 226). Field independent persons have the autonomy of the sensation seeker, but are unlike the sensation seeker in that the field independents tend to be introverted, rational, and intellectual.

Low positive correlations between general intelligence and sensation seeking have been found (Carroll & Zuckerman, 1977; Kish & Donnenworth, 1972; Kish & Leahy, 1970; Waters, 1974). However, high sensation seekers are not necessarily high achievers in an academic setting (Anderson, 1973; cited in Zuckerman, 1979, p. 236; Pemberton, 1971; cited in Zuckerman, 1979, p. 235; Waters, Ambler, & Waters, 1976). Despite an academic potential as measured by general intelligence, high sensation seekers in high school and in university often do not use this potential. The monotony of the academic atmosphere compared with the stimulations surrounding them in the outside world lead the high sensation seeker away from the classroom.

Sensation seeking in males has been found to be positively correlated with interest in vocations involving personal interactions and negatively related to clerical and business occupations (Kish & Donnenworth, 1969; Kish & Donnenworth, 1972; Kish & Leahy, 1970). The data on females are not as clear. There are some indications that high sensation seeking females have a low interest in traditionally female occupations such as a

housewife or teacher. They show instead a higher interest in non-traditional female occupations such as a lawyer. Best and Kilpatrick (1977) studied rape crisis counselors and found them higher on sensation seeking, higher on feminist attitudes, and more open-minded. For a specific type of risky job, such as aviation, the applicants scored higher on the Thrill and adventure seeking subscale rather than the total score (Burnett, 1972; cited in Zuckerman, 1979, p. 257; Waters, Ambler, & Waters, 1976).

The high sensation seeker has been shown to be more involved in a greater variety of heterosexual behaviors with a greater number of partners than low sensation seekers (Zuckerman, Bone, Neary, Mangelsdorff, & Brustman, 1972; Zuckerman, Neary, & Brustman, 1970; cited in Zuckerman, 1979, p. 272). Drug use was also positively correlated with sensation seeking (Keastner, Rosen, & Appel, 1977; Zuckerman et al., 1972; Zuckerman et al., 1970; cited in Zuckerman, 1979, p. 272). Not only stimulating drugs were used by the high sensation seeker. It seems that any drug which will provide a new sensation is likely to be used by the high sensation seeker (Carroll & Zuckerman, 1977; Kaestner et al., 1977; Segal & Singer, 1976; Zuckerman et al., 1970; cited in Zuckerman, 1979, p. 272). Heavy alcohol use was not related to the broad sensation seeking trait, but more with the Disinhibition subscale (Zuckerman et al., 1972).

There are also several physiological correlates of sensation seeking. The magnitude of the orienting reflex to the first presentation of auditory or visual stimuli was stronger in the high sensation seeker than in the low sensation seeker (Neary & Zuckerman, 1976). Those with high

Disinhibition scores on the SSS had higher levels of gonadal hormones (testosterone and estrogen) than low sensation seekers (Daitzman, Zuckerman, Sammelwitz & Ganjam, 1978). The sensation seeking scale correlated negatively with blood platelet monoamine oxidase (MAO) (Schooler, Zahn, Murphy, & Buchsbaum, 1978). Platelet MAO has been shown to have a retest reliability of 0.86 over an 8 to 10 week period (Murphy, Wright, Buchsbaum, Nichols, Costra, & Wyatt, 1976) and has been shown to be likely related to brain MAO (Murphy, 1973). In the brain, MAO degrades monoamine neurotransmitters, such as norepinephrine, dopamine, and serotonin. This implies that MAO plays a dampening or regulatory effect through its metabolism of brain neurotransmitters. The negative correlation indicates that high sensation seekers tend to have low MAO levels. These low levels of MAO are associated with hyperactivity, sociability, and, in the extreme, mania (Zuckerman, Buchsbaum, & Murphy, 1980). Nies, Robinson, Lamborn and Lampert (1983) have demonstrated that MAO is 83% heritable. Congruently, Fulker, Eysenck, and Zuckerman (1980) demonstrated that sensation seeking is about 58% heritable.

The physiological area is the one Zuckerman has concentrated his research efforts in the past few years. Although these biological findings are interesting, and Zuckerman has built a new theory of sensation seeking using a biological model to replace the optimal level of arousal one, the new theory needs more experimentation to solidify its grounding.

Specific Introduction

The area of sensation seeking which will be explored in this study is

the relationship of sensation seeking to recreational physical activity. The specific area of interest is how sensation seeking is related to participation in aerobic exercise classes.

The relationship of sensation seeking to sports has been studied by several investigators. A study by Straub (1982) found that high risk sports such as hang gliding and automobile racing attracted males scoring higher on the SSS and low risk sports such as bowling attracted those who score lower on the SSS. McCutcheon (1980) found that female runners were lower on the Thrill and adventure seeking subscale of the SSS than female non-runners. However, other investigators concluded that the need for novelty, and not simply the need for high risk is the primary determinant for selection of sporting activities. Zuckerman (1983) argued that people involved in risky sports do them not because of an attraction to high risk, but because of the desire for exploratory, novel, and exciting stimulation. A study by Rowland, Franken, and Harrison (1986) indicates those people who scored high on the SSS participate in high risk sports. They point out, however, that high sensation seekers also participated in low risk sports such as snooker and modern dance. They speculate that the high sensation seeker, who has tried many low risk sports, has become bored with these, so tries new activities, some of which will be high risk.

One area of sports activity which has attracted many participants is aerobic fitness classes. One reason for studying this particular activity is because of its popularity. Subjects are readily available because of the class situation in which this activity takes place and the large number of participants involved. A general overview of the inception and growth of

this activity is included as Appendix A.

A survey done by the government of Canada (1983) indicated 8% of Canadians in 1982 tried exercise classes as a way to keep physically fit. Presently there are more than 35 million American women who have participated in an aerobic dance program (Grenyo-DeRosa, 1982). The "in" activities today in the United States are aerobic exercise classes, exercise machines, tennis, jogging, and raquetball (Day, 1984).

The benefits of participating in aerobic fitness classes are many. Subjects who participated in aerobics dance classes three times a week for ten weeks demonstrated improved levels of physical fitness (Rockefeller & Burke, 1979). Aerobic dance classes also have a definite place in the area of weight control (Rockefeller, 1980), and have been used as a training ground for other sports (Farnell, 1983; Wright, 1983).

This study will investigate the sensation seeking characteristics of those people who participate in aerobics fitness classes. Sensation seeking should be related to behaviors, motivations, and attitudes of these individuals. As is customary, the male and female data will be analyzed and reported separately (Ball, Farnill, & Wangemen, 1983; Ridgeway & Russell, 1980; Zuckerman, et al., 1978). However, the specific hypotheses of this study will be the same for both sexes.

Individuals who attend aerobics classes are predicted to have lower total sensation seeking scores than the general population. The lack of novelty, the repetitive nature, and the regimentation associated with aerobics classes, will cause the high sensation seeker to rapidly become bored with the activity and quit (Rowland et al., 1986). Thus, most of the

individuals involved in aerobics classes at any given time are predicted to be low sensation seekers.

Because low sensation seekers are not easily bored with repetitive experiences and do not need to experience novelty frequently, they will have been participating in aerobics for a longer period of time than high sensation seekers. Therefore, a negative correlation between sensation seeking and the duration of participation in aerobics classes is predicted. Since the low sensation seeker is not opposed to participating in routine activities, low sensation seekers will be more likely to attend classes on a regular basis. Thus a negative correlation is predicted between sensation seeking and regularity of class attendance.

In contrast to the low sensation seekers, high sensation seekers with their need for change, are assumed to be involved in a number of other activities besides aerobics classes (Rowland et al., 1986). Positive correlations are expected between sensation seeking and the number of other sports in which the individual is involved. For similar reasons, high sensation seekers are predicted to use aerobics classes more frequently as training or conditioning for another sport than low sensation seekers.

High sensation seekers like to experience frequent changes in their environments. Therefore, a positive correlation between sensation seeking and the number of different clubs at which individuals have taken aerobics classes is expected. As the low sensation seeker has likely been loyal to only one club, a negative correlation is predicted between sensation seeking and the length of time the individual has participated at a specific club.

The high sensation seeker tends to become involved in a new activity very intensely, but for only a short period of time (Rowland et al., 1986). Therefore, the high sensation seekers are expected to be in aerobics classes for a short duration, but attend frequently, and so are more likely to become injured. It is expected, then, that there will be a positive correlation between sensation seeking and the number and severity of injuries due to aerobics participation.

High sensation seekers look for opportunities to engage in social activity. Due to this characteristic, the chance to socialize in an aerobics class setting is predicted to correlate positively with sensation seeking.

High sensation seekers are not involved in any one activity for a long period of time and tend not to feel committed to pursuing any one activity as a lifetime experience (Rowland et. al., 1986), thus the high sensation seekers will plan to quit aerobics classes when a new activity comes along or when they become bored with classes.

Due to the number of hypotheses, a summary is warranted at this time. Individuals who attend aerobics classes are predicted to have lower total sensation seeking scores than the general population. Negative correlations are expected between sensation seeking and (a) duration/regularity of class attendance and (b) the length of time spent at one particular club. Positive correlations are expected between sensation seeking and (a) the number of different aerobics clubs attended, (b) the number of sports, other than aerobics classes, individuals are involved in, and (c) the use of aerobics classes as conditioning for another sport. Positive correlations are also expected between sensation seeking

and (a) the number and severity of injuries due to aerobics participation, (b) socializing in an aerobics class setting, and (c) anticipation of quitting aerobics classes for various reasons.

METHOD

Subjects

The 225 subjects who volunteered to participate in this study were involved in aerobic exercise fitness classes at one of 13 local facilities. The facilities ranged in price per year from \$57 to \$590 for classes or membership. Subjects were solicited from July 1, 1986 through September 30, 1986. The various clubs were sampled in an attempt to obtain data across a wide array of aerobic exercise organizations.

The 177 female participants ranged in age from 19 to 60 years ($M = 30.66$, $SD = 7.72$) with 60.5% having been active in aerobic exercise classes for more than two years and 22.0% for less than one year. Forty-two per cent of the females had, or were obtaining, a university education, 53% were married, and 68% had no children.

The 48 male participants ranged in age from 21 to 62 years ($M = 34.02$ years, $SD = 8.58$) with 41.7% having been active in aerobic exercise classes for more than two years and 35.4% for less than one year. Forty-two per cent of the males had, or were obtaining, a university education, 58% were married, and 48% had no children.

Materials

The materials used in this study included a cover letter, a demographics sheet, two questionnaires (see Appendix B), an optical scoring sheet, and a self-addressed, stamped, return envelope. The cover letter gave the participants information about the study, telling them

what was expected of participants in the study, a guarantee of anonymity, a reminder of the voluntary nature of their decision to participate, and where to obtain information regarding results of the study when it was completed. Subjects were asked to provide demographic information regarding gender, age, occupation, education, living arrangement, marital status, and the number of children they had.

The two questionnaires were: (a) a 76 item questionnaire, the Aerobic Exercise Questionnaire, regarding behaviors, motivations, and attitudes regarding their participation in aerobics classes and (b) Form V of the Sensation Seeking Scale. An optical scoring sheet was included for the subjects to record their responses to the questionnaires for machine scoring, and a self-addressed, stamped, return envelope was given to each subject.

Procedure

Participants were solicited at the beginning or end of each aerobics class with the following information: (a) this study was being done in fulfillment of one of the requirements for a master's degree in psychology at the University of Calgary, (b) this study was being done because of an interest by the experimenter in investigating why people become involved in, stay involved in, and potential reasons why they would quit aerobic exercise classes, (c) the study involved filling out questionnaires, (d) people interested in participating could pick up an envelope, with the questionnaires enclosed, from the experimenter as they left class (e) the questionnaires would take approximately 45 minutes to fill out, therefore

in addition to the questionnaires a self-addressed, stamped, return envelope was included so the participants could fill them out at their convenience.

There were 420 sets of materials picked up by potential subjects. Of these, 225 were returned and used in the analyses (a return rate of 54%). Collection of data was completed on October 31, 1986.

RESULTS

The data for the present study were statistically controlled for age (Ball, Farnill, & Wangemen, 1984; Zuckerman et al., 1978), as sensation seeking correlated negatively with age both for females ($r = -0.17$, $p < .01$) and for males ($r = -.20$, $p < .08$).

Results for Female Data

Across a variety of populations, sensation seeking scores for females are normally distributed with $M = 20$, $SD = 5$ (Zuckerman, 1979; Ball et al., 1983; Rowland & Franken, 1986). Lower sensation seeking scores than those observed in most samples were observed for females enrolled in aerobic exercise classes ($M = 16.59$, $SD = 6.05$), with the range of scores being 31 - 1. Only 15 out of the 177 respondents scored ≥ 25 , which is one SD above the mean for previously reported samples.

A series of statistical contrasts was made between the scores of aerobic exercise class participants and those of appropriate comparison groups. Comparisons were made between (a) an Australian sample grouped into two age categories: 20 -29 yrs and 30 - 39 yrs (Ball et al., 1984) and (b) a University of Calgary student sample grouped into two age categories: 18 - 24 yrs and over 24 yrs (Rowland & Franken, 1986) (see Table 1).

The aerobic exercise class participants scored lower on sensation seeking than each of the comparison groups. The first comparison was made between the aerobics participants and a general sample of

Table 1

COMPARISONS WITH THE AUSTRALIAN AGE GROUPS FOR FEMALES

	<u>20 - 29 years</u>			<u>30 - 39 years</u>		
	<u>M</u>	<u>SD</u>	<u>N</u>	<u>M</u>	<u>SD</u>	<u>N</u>
aerobic participants (AP)	16.8	6.4	40	16.5	6.0	137
Australians (AU)	21.4	5.8	103	19.2	5.3	67
AP vs. AU	$t_{(194)} = 3.2^{**}$			$t_{(126)} = 3.5^{**}$		

COMPARISONS WITH THE UNIVERSITY AGE GROUPS FOR FEMALES

	<u>18 - 24 years</u>			<u>24 years & older</u>		
	<u>M</u>	<u>SD</u>	<u>N</u>	<u>M</u>	<u>SD</u>	<u>N</u>
aerobic participants (AP)	16.8	6.4	40	16.5	6.0	137
university students (US)	20.2	5.8	246	18.2	5.6	76
AP vs. US	$t_{(284)} = 3.4^{**}$			$t_{(211)} = 2.1^{**}$		

notes: M = mean; SD = standard deviation; N = sample size; * = $p < .05$;

** = $p < .01$; ns = not significant

Australians.

The 20 - 29 year old aerobics participants ($N = 93$) scored lower on sensation seeking than the 20 - 29 year old Australians ($N = 103$), $t(194) = 3.16$, $p < .01$. The 30 - 39 year old aerobics participants ($N = 61$) scored lower on sensation seeking when compared to the 30 - 39 year old Australians ($N = 67$), $t(126) = 3.53$, $p < .01$.

The 18 - 24 year old participants in aerobics classes ($N = 40$) had lower sensation seeking scores than the 18 - 24 year old students from the University of Calgary ($N = 246$), $t(284) = 3.39$, $p < .01$. The aerobics participants over 24 years of age ($N = 137$) also had lower sensation seeking scores compared to the student sample over 24 years of age ($N = 76$), $t(211) = 2.06$, $p < .05$. A selection factor for university enrollment was not apparent, as the sensation seeking scores for 18 - 24 year old aerobics participants who were students ($N = 10$) were not different from the scores of those who were non-students ($N = 30$), $t(38) = 0.21$, $p > .05$.

The reliability of the Aerobic Exercise Questionnaire was moderate ($\alpha = 0.67$). Several items on the Aerobic Exercise Questionnaire indicated that most subjects participated in aerobics classes with regularity and for a long period of time. Seventy-eight per cent had been doing aerobics for at least one year, 80% did aerobics all year round, 67% attended classes at the same time each week, and 78% scheduled their other activities around their aerobics classes. Despite the restricted range of sensation seeking scores and the homogeneity of responding, sensation seeking did correlate significantly with: the number of times/wk participants attended aerobics classes ($r_{age} = 0.17$, $p < .01$), the number

of hours/wk participants did aerobic exercises ($r_{age} = 0.17, p < .01$), attending at the same time each week ($r_{age} = -0.25, p < .01$), and level of achievement in aerobic classes ($r_{age} = 0.15, p < .05$) (see Appendix C).

Noting the responses regarding regularity and duration of attendance, it is not surprising that 73% of subjects reported they participated in no other or only one other physical activity a week besides aerobics. Similarly, 68% endorsed the response that they did not use aerobics as conditioning/training for another sport. Sensation seeking correlated with: the number of other sports participated in at least once a week besides aerobics ($r_{age} = 0.13, p < .05$) and using aerobics as training/conditioning for another sport ($r_{age} = 0.15, p < .05$) (see Appendix C).

Another set of items referred to the aspects of particular club participation. Fifty-eight percent had attended only one or two aerobics clubs. The number of clubs attended also correlated with sensation seeking, ($r_{age} = 0.29, p < .01$) (see Appendix C).

Sensation seeking did not correlate with any items regarding injury. Injury did not seem to be a difficulty with the participants as only 16% were injured more than once doing aerobics, and 78% of those reporting injury indicated that the injury required rest for recovery rather than any formal therapy (see Appendix C).

Sensation seeking also did not correlate with any of the items regarding the social aspects of joining aerobics classes. However, there was a homogeneous responding pattern to many of the items on the Aerobic Exercise Questionnaire. Eighty-eight percent said they were not there to

join a new social group, 80% did not choose the club because it put on social events outside of classes, 93% were not there to establish sexual relationships, 96% were not at classes to show off a good body, and 93% were not there to boy/girl watch. Paradoxically, 87% wanted classes with members of the opposite sex and 68% wanted instructors of the opposite sex (see Appendix C).

Almost unanimous were the responses to the items related to quitting aerobics classes. Ninety-seven percent said they could not see themselves quitting aerobics within the foreseeable future, 99% would not quit if they had lost the desired amount of weight, 94% would not quit if the classes become too routine, 93% would not quit if the exercises were too structured with too little emphasis put on individual creativity, 84% would not quit if they became too busy with other things, and 62% would not quit even if they could no longer afford the classes. Sensation seeking correlated with quitting if there was no improvement seen in weight, toning, etc. ($r_{age} = 0.13$, $p < .05$) (see Appendix C).

The most frequently cited reasons for attending aerobics classes were to a) tone up (86%) and b) to increase physical endurance (67%). External pressure from friends to join them at classes and from significant others to improve physical attractiveness were not important for starting classes (85% and 86% responded this way respectively). Ninety-seven percent felt that aerobics classes were fun/entertaining rather than boring/a chore (see Appendix C).

The participants tended to select very similar responses to the items on the Aerobic Exercise Questionnaire despite the range of

demographic indices. For example: a significant positive correlation between sensation seeking and attendance at class at the same time each week was found for clubs costing less than \$100/yr ($r_{\text{age}} = 0.35, p < .05$) and for clubs costing more than \$400/yr ($r_{\text{age}} = 0.40, p < .05$). Sixty-one percent of those who attended clubs costing less than \$100/yr, and 60% of those who attended clubs costing more than \$400/yr had been active in aerobics for more than two years. Ninety-four percent of those who attended clubs costing less than \$100/yr and 95% of those who attended clubs costing more than \$400/yr compared their aerobic improvements to their own internal standards. Ninety percent of those who attended clubs costing less than \$100/yr and 95% of those who attended clubs costing more than \$400/yr said joining a new social group was not an incentive to start aerobics classes (see Appendix D).

The similarity of responding persisted across both the married and single participants. For example: a significant positive correlation between sensation seeking and level of aerobic attainment was found for married participants ($r_{\text{age}} = 0.26, p < .01$) and for single participants ($r_{\text{age}} = 0.24, p < .05$). Also, a significant positive correlation between sensation seeking and the number of different clubs where subjects took aerobics classes was found for married participants ($r_{\text{age}} = 0.35, p < .01$) and for single participants ($r_{\text{age}} = 0.30, p < .01$). Seventy-nine percent of married and 81% of single participants reported doing aerobics all year round. Seventy-four percent of married and 81% of single participants scheduled their other activities around their aerobics classes. Fifty-nine percent of both married and single participants reported minimal

disruption in their lives if forced to stop doing aerobics (see Appendix E).

A factor analysis was carried out on the Aerobic Exercise Questionnaire in order to see if a pattern of responding would emerge. This would give more insight into why the participants were at the aerobics classes. It would also be helpful in determining the utility of some items over others in the scale. A maximum likelihood factor analysis was carried out using the SPSSX FACTOR program (1986). Items 10, 27, 28, 29, and 30 were deleted due to the lack of and/or the pattern of responding which made the correlation matrix singular. The factor analysis was stopped after extraction of the fifth factor because only two items loaded ≥ 0.35 on the fifth factor (Thurstone, 1947; cited in Kim & Mueller, 1978, p. 77).

An oblique rotation was carried out first on the five factors. Since the highest correlation between any of the factors was $r = 0.224$ (sharing less than 5% of the variance), an orthogonal rotation was subsequently carried out and interpreted. Only the first four factors are reported due to the low percentage of variance accounted for by subsequent factors. Variables loading only 0.35 or above are reported.

Items which loaded on the first factor indicated involvement in the activity and commitment of time and effort into the aerobics classes (see Table 2). The items were: how long the participant had been active in aerobics (0.51), the level of aerobic achievement attained (0.49), the number of clubs the subject had participated in aerobics at (0.41), reading magazines on aerobics (0.38), wanting to be an aerobics instructor (0.37), the number of injuries sustained due to aerobics participation

Table 2

**FACTOR LOADINGS OF ITEMS ON THE
AEROBIC EXERCISE QUESTIONNAIRE**

<u>Short Description of Item</u>	<u>Factor 1</u>	<u>Factor 2</u>	<u>Factor 3</u>	<u>Factor 4</u>
how long active in aerobics	0.51			
level of class attended	0.49			
active prior to attending classes				0.49
active at home as well as at class			0.41	
start classes, quit, restart, etc.		0.57		
number of clubs attended	0.41			
do not do aerobics all year round		0.35		
read magazines on aerobics	0.38			
want to be an instructor	0.37			
number of other sports engaged in				0.53
number of injuries	0.38			
perception of weight		0.40		-0.53
joined to lose weight				-0.49
joined to enter a new social group			0.43	
clothes after starting classes	0.35			
clothes to keep up with fashions	0.46			
club chosen for workouts	0.36			
joined to be around others			0.57	
joined to make friends			0.71	
will quit if busy		0.58		

(Table 2 continued)

<u>Short Description of Item</u>	<u>Factor 1</u>	<u>Factor 2</u>	<u>Factor 3</u>	<u>Factor 4</u>
will quit if scheduling conflicts		0.56		
% variance accounted for	4.3	5.3	3.8	2.7

note: only factors with loadings ≥ 0.35 are reported

(0.38), purchasing of special aerobics clothes after starting classes (0.35), enjoying the aspect of buying new clothing to keep up with the latest aerobics fashions (0.46), selecting the club on the reputation of its workouts (0.36).

Items which loaded on the second factor indicated joining aerobic exercise classes for a specific purpose (i.e., to lose weight), but also quitting easily (see Table 2). The items were: how often the participant started and then quit aerobics classes (0.57), not doing aerobics all year round (0.35), perception of weight as heavier than average (0.40), willing to quit if busy with other things (0.58), and willing to quit if difficult to fit classes into their schedules (0.56).

Items which loaded on the third factor indicated participation for the social aspect of classes (see Table 2). The items were: entering a new social group as an incentive to start aerobics classes (0.43), being around others as an incentive to continue classes (0.57), and the opportunity to make friends as an incentive to continue classes (0.71).

Items which loaded on the fourth factor indicated a utilization of aerobics classes as training/conditioning for other sports activities (see Table 2). The items were: being active in aerobics prior to starting classes (0.49), being active in aerobics at home in addition to classes (0.41), participating in other sports besides aerobics classes (0.53), perception of weight as average or below average (-0.53), and not joining aerobics to lose weight (-0.49).

The four factors accounted for 16% of the variance in the correlation matrix. Factor one accounted for 4.3%, factor two accounted for 5.3%,

factor three accounted for 3.8%, and factor four accounted for 2.7% (see Table 2).

Factor scores for the first four factors were obtained and correlated with sensation seeking. Factor 1 correlated positively with total SSS scores ($r_{\text{age}} = 0.20$, $p < .01$), the Experience seeking subscale ($r_{\text{age}} = 0.22$, $p < .01$), and the Disinhibition subscale ($r_{\text{age}} = 0.15$, $p < .05$). Factor 4 correlated significantly with the Thrill and adventure seeking subscale ($r_{\text{age}} = 0.21$, $p < .01$) (see Table 3).

Results for Male Data

Across a variety of populations, sensation seeking scores for males typically are distributed with $M = 22$, $SD = 5$ (Zuckerman, 1979; Ball et al., 1983; Rowland & Franken, 1986). Sensation seeking scores observed for males enrolled in aerobic exercise classes had $M = 18.27$, $SD = 5.43$, with the range of scores being 30 - 3. Only 5 out of the 48 respondents scored ≥ 27 , which is one SD above the mean for previously reported samples.

A series of statistical contrasts was made between the scores of aerobic exercise class participants and those of appropriate comparison groups. Comparisons were made between (a) 20 - 29 year old aerobics participants ($N = 16$), 30 - 39 year old aerobics participants ($N = 20$) and a general Australian sample (Ball et al., 1984) grouped into two age categories: 20 -29 yrs ($N = 100$) and 30 - 39 yrs ($N = 86$) and (b) 18 - 24 year old aerobics participants ($N = 7$), over 24 year old aerobics participants ($N = 41$) and a University of Calgary student sample (Rowland & Franken, 1986) grouped into two age categories: 18 - 24 yrs ($N = 261$)

Table 3

CORRELATIONS OF FACTOR SCORES WITH SENSATION SEEKING

<u>factor</u>	<u>correlation with factor scores</u>	<u>scale or subscale of the SSS</u>
1	0.20**	total sensation seeking scores
1	0.15*	experience seeking
1	0.22**	disinhibition
4	0.21**	thrill and adventure seeking

note: Factor scores were calculated using only those items which loaded ≥ 0.35 in the factors; * = $p < .05$; ** = $p \leq .01$

and 30 - 39 yrs ($N = 56$) (see Table 4).

The aerobics classes participants had lower scores on sensation seeking than all of the comparison groups. However, only the over 24 yrs aerobics participants had significantly lower scores compared to the over 24 yrs university students, $t(95) = 3.91$, $p < .01$. Since there were no students in the aerobics sample, an assessment of the selection factor for student status could not be made.

The reliability of the Aerobics Exercise Questionnaire was moderate ($\alpha = 0.70$). Several items on the Aerobic Exercise Questionnaire indicated that most subjects participated in aerobics classes with regularity and for a long period of time. Sixty-five percent had been doing aerobics for at least one year, 85% did aerobics all year round, 80% attended classes at the same time each week, and 81% scheduled their other activities around their aerobics classes. Despite the restricted range of sensation seeking scores and the homogeneity of responding, sensation seeking did correlate significantly with the number of hours/wk participants did aerobic exercises ($r_{age} = 0.29$, $p < .05$) (see Appendix C).

Noting the responses regarding regularity and duration of attendance, it is not surprising that 68% of subjects reported they participated in no other or only one other physical activity a week besides aerobics. Similarly, 60% endorsed the response that they did not use aerobics as conditioning/training for another sport. Sensation seeking correlated with using aerobics as training/conditioning for another sport ($r_{age} = 0.35$, $p < .01$) (see Appendix C).

Sensation seeking correlated significantly with several items

Table 4

COMPARISONS WITH THE AUSTRALIAN AGE GROUPS FOR MALES

	<u>20 - 29 years</u>			<u>30 - 39 years</u>		
	<u>M</u>	<u>SD</u>	<u>N</u>	<u>M</u>	<u>SD</u>	<u>N</u>
aerobic participants (AP)	20.2	5.0	16	17.7	7.7	20
Australians (AU)	22.1	5.4	110	18.2	6.3	86
AP vs. AU	$t_{(124)} = 3.2^{ns}$			$t_{(146)} = 0.3^{ns}$		

COMPARISONS WITH THE UNIVERSITY AGE GROUPS FOR MALES

	<u>18 - 24 years</u>			<u>24 years & older</u>		
	<u>M</u>	<u>SD</u>	<u>N</u>	<u>M</u>	<u>SD</u>	<u>N</u>
aerobic participants (AP)	21.4	4.4	7	17.7	6.5	41
university students (US)	23.9	5.1	261	22.3	5.1	56
AP vs. US	$t_{(266)} = 0.74^{ns}$			$t_{(95)} = 3.9^{**}$		

notes: M = mean; SD = standard deviation; N = sample size; * = $p < .05$;

** = $p < .01$; ns = not significant

regarding injury: a) the number of injuries due to participation in aerobics classes ($r_{\text{age}} = 0.38, p < .01$), b) the severity of the worst injury sustained ($r_{\text{age}} = 0.28, p < .05$), and c) continuing to work out while injured ($r_{\text{age}} = 0.29, p < .05$) (see Appendix C).

Sensation seeking also correlated with several items regarding the social aspects of joining aerobics classes: a) providing the opportunity to be around others to establish sexual relationships ($r_{\text{age}} = 0.38, p < .01$), b) the choice of the club at which to participate depending on the sponsorship of social activities outside of classes ($r_{\text{age}} = 0.30, p < .05$), c) the opportunity to show off a good body at classes ($r_{\text{age}} = 0.34, p < .01$), and d) the opportunity to boy/girl watch at class ($r_{\text{age}} = 0.48, p < .01$). Consistent with these correlations were the 90% and 98% endorsements of wanting instructors of the opposite sex and wanting classes with members of the opposite sex respectively. However, 81% said they were not there to join a new social group, 77% did not choose the club because it put on social events outside of classes, 77% were not there to establish sexual relationships, and 83% were not at classes to show off a good body (see Appendix C).

Almost unanimous were the responses to the items related to quitting aerobics classes. Ninety-six percent said they could not see themselves quitting aerobics within the foreseeable future, 98% would not quit if they had lost the desired amount of weight, 85% would not quit if the classes become too routine, 96% would not quit if the exercises were too structured with too little emphasis put on individual creativity, 92% would not quit if they became too busy with other things, and 64% would

not quit even if they could no longer afford the classes. Sensation seeking correlated with: quitting if the desired weight was lost ($r_{age} = 0.33, p < .01$), quitting if the classes become too routine ($r_{age} = 0.25, p < .05$), quitting if too busy with other things ($r_{age} = 0.33, p < .01$), quitting if another activity is found to keep in shape ($r_{age} = 0.25, p < .05$), quitting if the exercises are too structured, and ($r_{age} = 0.24, p < .05$), quitting if no improvement in weight, toning, etc. ($r_{age} = 0.41, p < .01$) (see Appendix C).

The most frequently cited reasons for attending aerobics classes were to a) tone up (87%), b) to increase physical endurance (72%), and c) to increase long term health, particularly cardiovascular (71%). External pressure from friends to join them at classes and from significant others to improve physical attractiveness were not important for starting classes (81% and 77% responded this way respectively). Ninety-six percent felt that aerobics classes were fun/entertaining rather than boring/a chore (see Appendix C).

Due to the small number of male participants, reporting the results of the groups according to club cost and marital status was not useful (see Appendices F and G). A factor analysis was not carried out for the male data because of the small number of respondents.

DISCUSSION

Females

The main hypothesis of the study, that females involved in aerobic exercise classes would be low on sensation seeking, was confirmed. The females had significantly lower sensation seeking scores than each of the comparison groups of age-matched Australians and age-matched university students. The Australian general sample and the Canadian university sample were utilized because both had large sample sizes in various age ranges. Using both of these groups is justifiable because sensation seeking scores have been shown to be cross-culturally stable (Rowland & Franken, 1986; Zuckerman et al., 1978). The difference between the aerobic exercise participants and the students was apparently not due to university enrollment. It was anticipated at the outset of the study that at any one time there would be some high sensation seekers involved in aerobics classes. But even the highest sensation seekers in this sample were only moderately high, with few having sensation seeking scores ≥ 1 SD above the mean of most typical samples.

The lack of high sensation seekers in this sample is understandable, due to the regularity and regimentation of aerobic exercise classes. Evidence has indicated that even those who are instructed to participate in an aerobics exercise program, as part of a rehabilitation program for cardiac problems, have a very high attrition rate. At least half those starting an exercise program stop, often within the first few months (Martin & Dubbert, 1982, 1984). These individuals are probably a typical

sample of sensation seekers. Since these individuals, who have a vested interest in staying involved in the classes, have been shown to be likely to quit, the repetitive nature of the activity and the rigidity of the scheduling of aerobics classes will ensure that almost all of the high sensation seeking individuals will quit after only a very brief duration.

Given that the majority of aerobic exercise participants were low on sensation seeking, it was not surprising to note the pattern of responses to the Aerobic Exercise Questionnaire was consistent with that predicted for low sensation seekers. Most of the subjects participated persistently and regularly over a long period of time. This regularity of attendance by the low sensation seekers was supported by the negative correlation between sensation seeking and attendance at classes at the same time each week. Continuing to be consistent in their low sensation seeking responding pattern, most subjects indicated they did not participate in other sports besides aerobics and they had participated at the same or only one other club since starting. Correlations revealed the tendency for higher sensation seekers to participate in more sports activities, to use aerobics as a training ground for other sports, and to belong to a greater number of clubs. Despite the repetitiveness of the activity itself and the regularity of attendance by most of the participants, almost all subjects felt that aerobics classes were fun rather than boring.

Low sensation seekers have been shown to remain in an activity for a long period of time (Rowland et al., 1986). Almost all the participants reported they could not see themselves quitting in the foreseeable future and would not quit for any reason, even inability to afford classes. This

further supports the notion of this sample being generally low sensation seekers. The higher sensation seekers indicated they would quit if they failed to attain a specified goal (i.e., weight loss).

In addition to their low sensation seeking pattern, the females involved in these classes did not seem to be there for any of the commonly expected reasons. Many were not there to lose weight; probably because generally they perceived themselves to be close to the correct weight. Social reasons were also listed as unimportant in attracting these generally low sensation seeking participants to aerobics classes. Paradoxically, most subjects wanted instructors of the opposite sex and to have classes with members of the opposite sex. The least likely reasons to start classes were those due to pressure from friends or significant others. The socially acceptable reasons of "toning up" and increasing physical endurance were the ones endorsed by this sample. This low sensation seeking responding pattern was consistent across marital status. Both married and single participants gave similar responses. Those who belonged to the more expensive clubs (> \$400 per year) responded no differently from those who paid \$57 per year to take three classes a week.

A factor analysis of the Aerobic Exercise Questionnaire was also supportive of the notion that the moderately high sensation seekers in this study were involved in aerobics for specific reasons while low sensation seekers provided no consistent rationale for attending the classes.

The first factor revealed a high degree of involvement in the activity and factor scores correlated with total sensation seeking scores,

Experience seeking, and Disinhibition subscale scores. The higher sensation seekers were heavily involved in the activity and committed large amounts of time, effort, and money to the activity. The higher sensation seekers went to class more frequently and had achieved a higher level of competence in aerobics than the low sensation seekers. The low sensation seekers remained more passive and uninvolved in the classes. Most of the respondents claimed they had never or only once been injured, and most of those injuries required only rest to recover. Since most of the participants in this sample were low sensation seekers, the few injuries, and by implication the lack of involvement, is consistent with the low sensation seeking model.

The factor scores for the second and third factors did not correlate with sensation seeking. The second factor implied that the use of aerobics is best to achieve one purpose - to lose weight. Those who joined for this reason also quit more readily. The third factor implied that aerobic exercise classes could be used to enhance one's social life.

The Thrill and adventure seeking subscale correlated with the scores on the fourth factor. This factor represented the utilization of aerobic exercise classes to condition or train for other sports.

Much of the literature regarding the sensation seeking trait seems to be focused on the behaviors and attitudes of high sensation seekers. It has been assumed that sensation seeking is a bipolar continuum and the behaviors that the high sensation seekers display can be inverted to describe the low sensation seeker. As well, male high sensation seekers have been most often described, leaving a gap in the research available to

describe and understand the low sensation seeker - particularly the low sensation seeking female.

Sex differences have been studied frequently in the sensation seeking literature (Ball et al., 1983, 1984; Ridgeway & Russell, 1980; Zuckerman et al., 1978). Recently, genetically controlled differences between the sexes on sensation seeking have been studied. In normal populations, males tend to score two points higher on sensation seeking than females. The genetic studies of sensation seeking and biochemical correlates of sensation seeking have been fruitful and it seems highly likely that genetic factors are involved in the individual differences in the trait of sensation seeking. In addition, a study by Fulker, Eysenck, and Zuckerman (1980) indicated that the genes for controlling the subscale scores interact with sex. The genes give very different contributions to each of the subscales which add up to the total sensation seeking score. Thus, the subscale profiles are largely under control of different genes in the two sexes indicating an important constitutional difference in subscale profiles of males and females. This information needs to be kept in mind in interpreting results from a study using the SSS.

The results from this study of aerobic exercise classes may help to bridge the present gap created by the lack of study of the low sensation seeking female. The results indicate that the low sensation seeking female pursues a regular, ritualized, persistent, orderly, and very predictable experience with regards to aerobic exercise classes. The very low sensation seekers did not seem to be participating in aerobics classes for any of the common or expected reasons. Many did not join to improve

their health, to make friends and socialize, to use classes to train for another activity, to show off a good body, to boy/girl watch, or to escape stresses of work or relationships. Most reported they did not get a euphoric high nor a revived feeling from the workouts. Many did not get involved in the classes to the extent that they bought clothes to keep up with the latest fashions, read magazines on aerobics, wanted to become an instructor nor did they get feelings of withdrawal that were disruptive to their lives if forced to quit aerobics. However, most of the subjects were regular attenders, attended at the same time each week, and have belonged to the same club for the duration of their aerobics participation. Almost all of them reported they would not quit in the foreseeable future and that aerobics classes were fun.

It is assumed that the way in which the low sensation seeker approaches aerobics classes is indicative of the behaviors expressed in other areas of their lives. One possible explanation of why the low sensation seekers attend aerobics exercise classes so religiously is their need for order, predictability, regularity, and control over their lives (Franken, in press).

There is a correlation between the cognitive structure scale of the Personality Research Form (1967), which measures cognitive rigidity, and sensation seeking (Zuckerman, 1979). High sensation seekers tend to be more flexible and low sensation seekers more rigid. The rigidity of the low sensation seeker was also found in the California Psychological Inventory (Kish, 1971; cited in Zuckerman, 1979, p. 156). Low sensation seekers have been found to be high on the control scale of the 16PF

(Cattell, Saunders, & Stice, 1950) (Zuckerman et al., 1979). There is also evidence that intolerance for ambiguity is characteristic of the low sensation seeker, which is the tendency to view ambiguous situations and ideas as a threat (Bone & Cowling, 1974; cited in Zuckerman, 1979, pp. 264-265).

These psychometric indicators show the tendency of the low sensation seeker to exhibit similar characteristics to those who are clinically diagnosed with an obsessive-compulsive disorder. Although this sample is not a clinical one, it is interesting to note the similarity of some of the low sensation seeking behaviors of the aerobics participants and those of persons diagnosed to have an obsessive-compulsive personality dimension. In fact, compulsive individuals have been shown to be low sensation seekers (Miller & Magaro, 1977; cited in Zuckerman, 1979, p. 161).

The obsessive-compulsive person is distrustful that the world is generally consistent and controllable, so nothing can be left to chance (Mallinger, 1984). Thus, there is a tremendous need to control events as much as possible, and to keep regulated and regimented as many personal behaviors as possible.

Three domains of control have been cited. They are the need to control one's own feelings, which is carried out by the obsessive-compulsive person behaving in a manner of self-denial, and non-goal oriented, persevering behaviors. The aerobics participants also exhibited this quality in that they attended all year round with no breaks but indicated no consistent reasons to be at the classes. There is a need

by obsessive-compulsive people to control how others feel toward them by appearing to be in control of the situation. The aerobics participants also behaved in an inflexible, controlling manner with regards to this activity by always going at specific times and scheduling all other activities, which would include interactions with others, around classes. Finally, there is the obsessive-compulsive's need to control miscellaneous events that might affect them. The aerobics participants controlled the chance of changes in schedule by going to classes in a very regular manner and not planning to quit. Pursuing these controlling mechanisms entails exercising behavior that is rigid, ritualistic, and self-disciplined.

In addition to the psychometric connections and the behavioral parallels between low sensation seekers and the obsessive-compulsive dimension is the biological one. Drug treatment of severe cases obsessive-compulsive disorders encompass the same neural mechanisms presumed to underlie the trait of sensation seeking. Generally monoamine oxidase (MAO) determines the sensitivity of the neural system it regulates. High levels of MAO reduce sensitivity by breaking down neural transmitters which would normally accumulate in the neurons. Low levels of MAO would, therefore, allow the accumulation of neurotransmitters in the neurons and would, then increase sensitivity. The highest levels of MAO are found in the limbic brain systems which regulate appetite, pleasure, pain, reward and punishment sensitivity, and general emotional and motivational states. There is a link between sensation seeking and MAO which indicates high sensation seekers have low levels of MAO and low sensation seekers have high levels of MAO, females have higher levels

of MAO at all age levels than males (Murphy, 1973; Murphy et al., 1976; Neis, et al., 1983; Schooler, et al., 1978; Zuckerman et al., 1980).

MAO inhibiting drugs have been used in the treatment of depression. In addition, in a recent study by Jenike, Surman, Cassem, Zusky, and Anderson (1983), the value of using MAO inhibiting drugs for the treatment of severe cases of obsessive-compulsive disorders has been shown. They concluded that at least a subgroup of patients with obsessive-compulsive disorder respond dramatically to MAO inhibiting drugs. They recommend trying the MAO inhibiting drugs in the treatment of this disorder.

Males

The main hypothesis of the study that males involved in aerobic exercise classes would be low on sensation seeking was not statistically confirmed. The males had lower sensation seeking scores than each of the comparison groups of age-matched Australians and age-matched university students. However, only the difference between the over 25 yrs aerobic exercise participants and the over 25 yrs students was significant. Unfortunately, this difference could not be assessed because there were no male students in the aerobics sample. The other differences were expected to be significantly different, as they were for the females, if there had been a larger sample size of males. This expectation seems reasonable because the difference was highly significant when the sample size was sufficiently large. As with the females, the male high sensation seekers in this sample were only moderately high, with only a few having sensation seeking scores ≥ 1 SD above the mean of most typical samples.

Few conclusions may be reached from the male data due to the lack of differences in sensation seeking scores and the small sample size. However, the pattern of responses to the Aerobic Exercise Questionnaire was very similar to the female pattern and indicates a generally low sensation seeking sample.

Most of the subjects participated persistently, regularly, and over a long period of time. Most subjects indicated they did not participate in other sports besides aerobics. The higher sensation seekers tended to use aerobics classes to train for another sport. As with the females, almost all subjects felt that aerobics classes were fun rather than boring.

Almost all the respondents could not see themselves quitting in the foreseeable future and reported they would not quit for many reasons, including inability to afford classes. The higher sensation seekers in the group indicated that they would be more likely to quit for a variety of reasons.

The low sensation seeking response pattern of males on the Aerobic Exercise Questionnaire continued with reasons why they did or did not participate in aerobics classes. Most of the individuals were not involved in aerobics for commonly expected reasons. Most were not at classes to lose weight, probably due to the fact that most reported they perceived themselves to be near their correct weight. Social reasons were listed as unimportant for attracting the generally low sensation seeking participants to aerobics classes. Paradoxically most subjects wanted instructors of the opposite sex and to have classes with members of the opposite sex. As is typical of male samples, the higher sensation seekers

tended to make more use of the social aspects of going to aerobics classes. The least likely reasons to have started classes were due to pressure from friends or from significant others. The most frequently given reasons for starting classes were the socially acceptable reasons of "toning up", increasing physical endurance, and increasing long term health - particularly cardiovascular health.

Due to the small number of male participants in this study, this pattern of responding was not evaluated across marital status or club cost, nor was a factor analysis carried out.

Implications/Avenues for Further Research

The most useful information which came out of this study was finding and describing an activity which generally attracted low sensation seeking females. This will enhance the sensation seeking literature in a domain that up until now has been deficient. Males in this study tended to respond similarly to the females. However, the small number of male participants in this study prevented drawing many conclusions based on statistical significance about their behaviors in regards to aerobics participation and their sensation seeking scores. This lack of information regarding males gives rise to a further avenue of study which would demand a large sample of male participants.

In addition to the few males obtained in the sample is the lack of high sensation seekers included. The high sensation seekers have obviously either never tried this activity or probably quit (Rowland et al., 1986). It would be useful to collect a very large sample to include more of

the high sensation seekers in order to compare them to the low sensation seekers.

Expansion of the Aerobic Exercise Questionnaire to include items suggested by the participants and items relating to the obsessive-compulsive dimension of aerobic exercise behaviors, and then distributing it across a second sample would lend support for or against the hypothesis raised in the discussion.

A longitudinal study would also give more insight into the behavior of aerobics participants. Tracking who quits classes would be a very valuable piece of information because it would describe who is involved in the aerobics classes and what keeps them there. This is especially important for further research into adherence to exercise programs, particularly those programs relating to cardiac rehabilitation.

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Appendix A

Background on Aerobic Exercise

The interest in physical fitness over the past thirty years has increased dramatically. Some statistics regarding the fitness activity of the American population have surfaced in magazines and surveys. The sale of running shoes, athletic apparel, exercise equipment, weight loss programs, health foods, and so forth was estimated to be near 35 billion dollars last year (Day, 1984). Over three billion dollars was spent on health clubs and over 300 marathons were held last year. There are some skeptics who think the physical fitness boom is just a fad. However, the movement is almost thirty years old, involves the participation of millions of people, and involves the expenditure of billions of dollars. It can hardly be called a passing fancy (Conrad, 1983).

The 1986 Statistical Abstracts of the United States indicated there were 7,544 registered establishments of sport and recreation clubs. This is a 116.7% increase over the 1977-1982 period. The 1974 National Adult Fitness Survey indicated walking was the most prevalent physical activity, followed by bicycling, swimming, and calisthenics. Most of the participants in jogging and weight training were men aged 22 - 29. Generally, the more education men and women had, the greater their participation in exercise. Generally, the higher the income the more likely the person was to exercise. The most frequent reason given for exercising was to improve health. Weight control was given three times more frequently by females compared to males as a reason for exercising. Not

(Appendix A continued)

having enough time was the most frequent reason given for not exercising.

A government survey in 1976 indicated walking was the most common form of exercise for Canadians. Calisthenics, bicycling, swimming, and jogging accounted for most of the remaining exercising done. Enjoyment was the reason most frequently given for exercising. More leisure time, more clubs/facilities, less expensive clubs/facilities, and closer clubs/facilities all contributed toward making exercising more prevalent. There was a positive association between education and sports activity, and between income and sports activity. There was over a 100% increase in jogging, skiing, and tennis during the years 1972 - 1976.

A survey in 1981 revealed that most Canadians who don't exercise, do not because of a lack of time. Another study in 1981 showed men and women participate in exercise in similar proportions. Married persons, blue collar workers, native persons, the elderly, and those who are geographically and/or socially isolated tend to exercise less.

A survey in 1983 indicated that jogging was the activity Canadians would most like to begin. The main reason given for exercising was to attain a sense of well-being. People who exercised more were more aware of the obstacles to get around in order to find time to exercise and were more likely to respond favorably to the removal of such obstacles.

From the results of these articles and surveys, it is clear that governments and individuals are taking an active interest in physical fitness. One of the prime movers of the physical fitness movement is Kenneth Cooper. In the 1960s the United States Air Force commissioned

(Appendix A continued)

Cooper to produce airmen who were fit and ready for action. The program Cooper developed utilized running, bicycling, rope-skipping, swimming, running in place, and walking. These sports all have two things in common; they are of fairly low intensity and can be done for long periods of time with a sustained effort. Cooper's theory was that fitness came with more efficient use of oxygen in the body. His program was used by young men entering the air force, but it was published in 1968 as Aerobics. It sold two million copies. He has since published The New Aerobics so that anyone, regardless of age and sex, could use the program to increase their physical fitness levels. He published another book, with the help of his wife, in 1972 specifically aimed at women, Aerobics for Women. He continued to do research in this area in the 1970s and published another book in 1977, The Aerobics Way.

One of the more current ways to keep physically fit is through aerobic exercise classes, or more commonly called, aerobics. In 1969 Jacki Sorenson was asked to host a televised exercise program for the air force base in Puerto Rico where her husband was stationed. Sorenson choreographed her music so that vigorous physical exercise, the type Cooper was trying to obtain with his program, would occur. The dances she choreographed were well received so the next step was a research project with the air force wives. After refining and testing her dance routines, she took them to the public in 1971 (McCloy, 1982).

A report by Harris (1978) makes many claims to the psychological benefits of participating in physical activity. One may become involved in

(Appendix A continued)

aerobics at first to lose weight or get into shape, but in the process of doing this, people discover exercise is fun and they experience a sense of total integration never reached before. It has been labeled exhilaration, euphoria, ecstasy, peak experience, and getting high. Physical fitness is then pursued as an end in itself. There is a sense of mastery, control, and competence over oneself that is not able to be obtained in any other way.

People are intrinsically motivated to reduce uncertainty and to feel capable of dealing effectively with the environment. They get this through physical fitness. When exercise first became popular, its benefits were measured in health and medical terms. However, these benefits are far removed from the exercise activity itself and may not keep the person motivated. Those who did persevere, found that exercise did something for them psychologically as well as physically. They exercised more to feel good than for health reasons. A series of studies by Morgan (1969, 1970, 1976) and Morgan, Roberts, Brand, and Feinerman (1970) have made wide claims as to the effectiveness of regular physical activity on depressed persons.

Not all persons are enjoying these benefits. A growing body of research suggests that at least half of the people who start an exercise program will stop, often within the first three months (Martin & Dubbert, 1982, 1984).

Physical activity has also been looked at in relation to psychological measurements. A study by Tillman (1964), where he grouped university students at the upper, middle, and lower positions on the fitness

(Appendix A continued)

continuum, indicated that the upper physically fit group was more dominant, more enthusiastic, more group dependent, and less tense than the lower physical fitness group. Harris (1963) found that women who were higher on the physical fitness scales obtained higher scores on endurance, exhibition, and intraception indices of the Edward's Personality Preference Scale (1959). Intraception is a measure of how one analyzes one's motives, observes others, and how well one puts oneself in another's place. The lower group had higher scores on deference, succorance, heterosexuality, and change. Another study by Harris (1965) of physical fitness and characteristics of university women, indicated those scoring lowest on physical fitness demonstrated more feelings of inferiority and insecurity than the highly fit group. Those that were highly fit displayed less need for suggestions from others, cared less about what others thought, were less compelled to do what was expected of them, were less willing to let others make decisions for them, and were less willing to accept leadership compared to the middle physically fit group.

There are drawbacks to participation in aerobics classes. At an aerobic dance symposium Vetter, Helfet, Spear, and Matthews (1985) reported there were 61 patients who came to a medical clinic in Boston, Massachusetts for injuries sustained in aerobics classes over an 18 month period. Eighty-two per cent of the injuries from aerobics classes were to the lower extremities. Only five patients came to the clinic within one week of noticing the pain. All except five of the injuries were overuse injuries. However, there were relatively few significantly acute

(Appendix A continued)

injuries to aerobic dancers. As well, Richie, Kelso, & Bellucci (1985) concluded from their study of 28 aerobic dance facilities in the Sacramento and Long Beach, California areas, that most injuries due to aerobic exercise were not debilitating and few required medical treatment.

Another study of 135 instructors from the San Diego, California area (Francis, Francis, & Welshons-Smith 1985), indicated that 94% of instructors were women, 77% were between the ages 20 and 35, 44% had no formal qualifications to teach an aerobics class, and 103 of the 135 had sustained or aggravated one or more injuries from aerobic dancing. To earn an acceptable salary, many instructors taught an excessive number of classes.

Appendix B

Cover Letter, Aerobic Exercise Questionnaire, and Form V of the Sensation Seeking Scale

Cover Letter

July, 1986

Dear Participant,

We are doing research in the area of sports psychology. We are explicitly interested in the styles and preferences shown by individuals in their quest for new life experiences. We feel understanding these styles and preferences will assist in the development of physical fitness programs which fit individual needs and will enhance a general understanding of human nature.

We are asking you to complete two questionnaires. The first asks for information regarding your participation in aerobics. The other is the Interest and Preference Test. It should take approximately forty-five minutes to complete the two questionnaires.

We hope that you will participate in this study. You are guaranteed anonymity. We do not ask for your name or any other information which would lead us to know who you are. At no time do you write your name anywhere on the questionnaires. We will appreciate it if you complete both questionnaires in their entirety. However, if you feel you do not want to complete the study once you have begun, you are free to do so. We do ask, though, that you return all unused portions of the questionnaires to us.

If you desire information about the results of this study, please contact me, Theresa Hobson, in the psychology department at the University of Calgary.

Thank you for your time and effort, sincerely,



Theresa J. Hobson
Department of Psychology
500 University Dr., N.W.
Calgary, Alberta
T2N 1N4
220-5910

(Appendix B continued)

Aerobic Exercise Questionnaire

DEMOGRAPHICS

Please fill in the following information.

Age _____

Sex _____

Highest level of education attained _____

Present occupation _____

Please circle your current living arrangement:

- a. living with parent/parents
- b. living alone
- c. living with a roommate
- d. living with spouse

Please circle your current marital status:

- a. single
- b. cohabitating
- c. married
- d. separated
- e. divorced

Number of children _____

Please go on to the next page.

(Appendix B continued)

AEROBICS PARTICIPATION

Each of the next items contains multiple choice answers. Please indicate on your IBM computerized answer sheet the letter corresponding to your selection. In some cases you may find items in which more than one selection is appropriate for you. In this case select the item which most reflects your experience in aerobics. In some cases you may find items in which none of the selections are appropriate for you. In this case select the item most closely reflecting your experience in aerobics. Be sure to completely fill in the "bubbles" that correspond to your selection. Use a soft lead pencil when filling in your selection. Hard lead and ink marks will not be picked up by the computer. Make your erasures complete and neat as these and other stray marks and dots on the sheet will be picked up by the computer.

DO NOT FILL IN ANY OF THE INFORMATION ON THE TOP HALF OF THE ANSWER SHEET. THIS WILL ENSURE YOUR ANONYMITY.

1. How long have you been active in aerobics classes?
 - a. less than one month
 - b. one to three months
 - c. four to twelve months
 - d. one to two years
 - e. more than two years
2. How many times a week do you attend aerobics classes?
 - a. once
 - b. twice
 - c. three times
 - d. four to five times
 - e. six to seven times
3. How many hours per week do you attend aerobics classes?
 - a. one
 - b. two
 - c. three
 - d. four to five
 - e. more than five

(Appendix B continued)

4. Do you attend aerobics classes at the same time every week?
 - a. yes
 - b. no
5. What level is the aerobics class you attended?
 - a. beginner
 - b. intermediate
 - c. advanced
6. Over time, has your attendance at aerobics classes . . .
 - a. remained the same
 - b. increased
 - c. decreased
 - d. has not been consistent
7. How long were you active at home in aerobics prior to enrolling in aerobics classes?
 - a. never
 - b. less than one month
 - c. one to six months
 - d. seven to twelve months
 - e. more than one year
8. How many times a week do you do aerobics at home (in addition to your classes)?
 - a. never
 - b. one
 - c. two
 - d. three to five
 - e. six to seven
9. Did you begin to do aerobics at home after you enrolled in classes ?
 - a. yes
 - b. no

(Appendix B continued)

10. If the answer to Question 9 above is yes, when after your enrollment in classes did you start to work out at home?
 - a. immediately
 - b. within the first month
 - c. one to three months
 - d. four to six months
 - e. after six months
11. Have you ever participated in aerobics classes, quit, and then started up again?
 - a. never
 - b. once
 - c. twice
 - d. three to five times
 - e. more than five times
12. In total, how long have you been active at this club/organization?
 - a. less than one month
 - b. two to three months
 - c. four to twelve months
 - d. one to two years
 - e. more than three years
13. At how many clubs/organizations have you participated in aerobics?
 - a. one
 - b. two
 - c. three
 - d. four to six
 - e. more than six
14. Do you work out on holidays (i.e., Christmas)?
 - a. yes
 - b. no
15. Do you work out when on a trip?
 - a. yes
 - b. no

(Appendix B continued)

16. Are there seasons when you don't do aerobics?
 - a. yes
 - b. no
17. Do you compare your improvements to your own, internal standards?
 - a. yes
 - b. no
18. Do you compare your ability with your classmates'?'
 - a. yes
 - b. no
19. Do you keep a daily log of your training (e.g. heartrate, time spent at class, etc.)?
 - a. yes
 - b. no
20. Do you read magazines on aerobics?
 - a. yes
 - b. no
21. Would you like to be an aerobics instructor?
 - a. yes
 - b. no
22. Would you like to participate in aerobics competitions?
 - a. yes
 - b. no
23. Do you tend to schedule your other activities around the time you do aerobics?
 - a. yes
 - b. no

(Appendix B continued)

24. In how many other sports do you participate on a regular basis (at least once a week)?
- a. none
 - b. one
 - c. two to three
 - d. four to five
 - e. more than five
25. Do you use aerobics as training/conditioning for another sport?
- a. yes
 - b. no
26. Have you ever been injured doing aerobics?
- a. never
 - b. once
 - c. twice
 - d. three to five times
 - e. more than five times
27. If you have been injured, your most severe injury _____
- a. required rest
 - b. needed professional attention, e.g., physiotherapy
 - c. needed corrective surgery and/or hospitalization
28. Did you continue to work out while recovering from the above injury?
- a. yes, continued aerobics
 - b. yes, but used other workout methods (e.g. weight lifting)
 - c. no
29. If for any reason you have been forced to stop participation in aerobic exercises for some extended period of time, did you experience "withdrawal symptoms" (e.g. irritability, depression, etc.)?
- a. not at all
 - b. minimal
 - c. moderate
 - d. severe

(Appendix B continued)

30. If you did experience withdrawal, to what degree was your life disrupted?
- a. none
 - b. minimally
 - c. moderately
 - d. severely
31. To what degree did a desire to improve your long term health, (particularly cardiovascular) influence your decision to start aerobics?
- a. not at all
 - b. was a minor consideration
 - c. was a major consideration
32. To what degree did a desire to "tone up" or avoid flabbiness influence your decision to start aerobics?
- a. not at all
 - b. was a minor consideration
 - c. was a major consideration
33. Do you perceive yourself to be . . .
- a. underweight
 - b. the correct weight
 - c. slightly overweight (up to 10 pounds more than your correct weight)
 - d. overweight (more than 10 pounds over your correct weight)
34. To what degree did a desire to lose weight influence your decision to start aerobics?
- a. not at all
 - b. was a minor consideration
 - c. was a major consideration
35. To what degree did a desire to improve physical endurance and conditioning influence your decision to start aerobics?
- a. not at all
 - b. was a minor consideration
 - c. was a major consideration

(Appendix B continued)

36. To what degree did a desire to improve your physical attractiveness to others influence your decision to start aerobics?
- a. not at all
 - b. was a minor consideration
 - c. was a major consideration
37. Was your decision to start aerobics influenced by a desire to investigate or to participate in a new trend?
- a. not at all
 - b. was a minor consideration
 - c. was a major consideration
38. Was your decision to start aerobics influenced by a desire to enter a new social group?
- a. not at all
 - b. was a minor consideration
 - c. was a major consideration
39. Was your decision to start aerobics influenced by pressure from friends to join them in this activity?
- a. not at all
 - b. was a minor consideration
 - c. was a major consideration
40. Was your decision to start aerobics influenced by pressure from significant others (friends, spouse, family) to improve your physical appearance?
- a. not at all
 - b. was a minor consideration
 - c. was a major consideration
41. Did you purchase specialized clothing in anticipation of starting aerobics classes?
- a. yes
 - b. no
42. Did you purchase specialized clothing after starting classes?
- a. yes
 - b. no

(Appendix B continued)

43. Do you purchase new clothing to keep up with the latest aerobics fashions?
 - a. yes
 - b. no
44. To what degree is the opportunity to wear fashionable aerobics clothes an attraction of these classes?
 - a. not at all
 - b. is a minor consideration
 - c. is a major consideration
45. Have you ever considered dressing in an "outrageous" fashion just to create an impact on your aerobics class?
 - a. yes
 - b. no
46. My choice of this club/organization depended primarily on its being close to work/home.
 - a. yes
 - b. no
47. My choice of this club/organization depended primarily on the reputation of its workouts.
 - a. yes
 - b. no
48. My choice of this club/organization depended primarily on the quality of its instructors.
 - a. yes
 - b. no
49. My choice of this club/organization depended primarily on economic considerations.
 - a. yes
 - b. no

(Appendix B continued)

50. Do you like having different instructors for each workout?
- a. yes
 - b. no
51. Do you like having instructors of the opposite sex?
- a. yes
 - b. no
52. Do you like to take classes with members of the opposite sex?
- a. yes
 - b. no
53. Without the social support of classes I probably wouldn't exercise regularly.
- a. true
 - b. false
54. To what extent is the opportunity to be around other people an incentive to attend aerobics classes?
- a. none
 - b. very little
 - c. of some importance
 - d. is a primary attraction
55. To what extent is the opportunity to meet other people in order to make friends an incentive attend aerobics classes?
- a. none
 - b. very little
 - c. of some importance
 - d. is a primary attraction
56. To what extent is the opportunity to meet other people in order to establish sexual relationships an incentive to attend aerobics classes?
- a. none
 - b. very little
 - c. of some importance
 - d. is a primary attraction

(Appendix B continued)

57. To what extent is the sponsorship of social functions outside of classes an incentive to join a particular club/organization?
- a. none
 - b. very little
 - c. of some importance
 - d. is a primary attraction
58. I consider aerobics to be _____.
- a. entertaining/fun
 - b. hard, boring work/a chore
59. I am often aware of the artistic beauty of the movements in aerobic exercises.
- a. yes
 - b. no
60. I enjoy aerobic exercises because they are much like dancing which I also enjoy.
- a. yes
 - b. no
61. I get a pleasurable euphoric feeling (high) from an aerobic workout.
- a. never
 - b. rarely
 - c. usually
 - d. always
62. To what degree does the "revived" feeling after an aerobic workout influence you to continue with classes?
- a. none
 - b. very little
 - c. is of some importance
 - d. is a primary attraction

(Appendix B continued)

63. I feel that I look more attractive in my aerobics clothing than in regular clothing.
- a. yes, I look more attractive
 - b. no, I look less attractive
 - c. no difference
64. One incentive which attending aerobics classes provides me is the opportunity to show off what I think is a good body.
- a. yes
 - b. no
65. One incentive which attending aerobics classes provides me is the opportunity to girl/boy watch.
- a. yes
 - b. no
66. Aerobics classes can provide an escape from the stresses of work. How important is this for your participation?
- a. none
 - b. very little
 - c. of some importance
 - d. is a primary attraction
67. Aerobics classes can provide an escape from the stresses of a relationship. How important is this for your participation?
- a. none
 - b. very little
 - c. of some importance
 - d. is a primary attraction
68. When do you see yourself quitting doing aerobics?
- a. in another month
 - b. within three months
 - c. within six months
 - d. within one year
 - e. not in the foreseeable future

(Appendix B continued)

69. Did you quit or do you think that you will quit when you had/have lost the desired amount of weight?
- a. yes
 - b. no
70. Did you quit or do you think that you will quit when the classes had/have become too much of a routine?
- a. yes
 - b. no
71. Did you quit or do you think that you will quit when you became/ become too busy with other things ?
- a. yes
 - b. no
72. Did you quit or do you think that you will quit when you found/find another activity which will keep you in shape?
- a. yes
 - b. no
73. Did you quit or do you think that you will quit because you found/ will find the exercises too structured with not enough emphasis put on individual creativity?
- a. yes
 - b. no
74. Did you quit or do you think that you will quit when you no longer could/can afford the classes?
- a. yes
 - b. no
75. Did you quit or do you think that you will quit when/if you didn't/don't see an improvement in your weight, toning, energy level, etc.?
- a. yes
 - b. no

(Appendix B continued)

76. Did you quit or do you think that you will quit because of a lack of time, or because you could not fit the classes into your schedule?
- a. yes
 - b. no

On the remaining space on this page please list any other reasons for your starting, continuing or quitting aerobics which we have not covered in the above items.

Please go on to the next page.

(Appendix B continued)

Form V of the Sensation Seeking Scale

INTERESTS AND PREFERENCES

Each of the items below contains two choices, a and b. Please continue to indicate, starting with number 77, on your IBM computerized answer sheet which of the choices most describes your likes or the way you feel. In some cases you may find items in which both choices describe your likes or the way you feel. Please choose the one which better describes your feelings. In some cases you may find items in which you do not like either choice. In these cases mark the choice you dislike least. It is important you respond to all items with only one choice, a or b. We are interested only in your likes and feelings, not in how others feel about these things or how one is supposed to feel. There are no right or wrong answers as in other kinds of tests. Be frank and give an honest appraisal of yourself.

77. a. I like "wild" uninhibited parties.
b. I prefer quiet parties with good conversation.
78. a. There are some movies I enjoy seeing a second or even a third time.
b. I can't stand watching a movie that I've seen before.
79. a. I often wish I could be a mountain climber.
b. I can't understand people who risk their necks climbing mountains.
80. a. I dislike all body odors.
b. I like some of the earthy body smells.
81. a. I get bored seeing the same old faces.
b. I like the comfortable familiarity of everyday friends.
82. a. I like to explore a strange city or section of town by myself, even if it means getting lost.
b. I prefer a guide when I am in a place I don't know well.
83. a. I dislike people who do or say things just to shock or upset others.
b. When you can predict almost everything a person will do and say, he or she must be a bore.

(Appendix B continued)

- 84. a. I usually don't enjoy a movie or play where I can predict what will happen in advance.
b. I don't mind watching a movie or play where I can predict what will happen in advance.
- 85. a. I have tried marijuana or would like to.
b. I would never smoke marijuana.
- 86. a. I would not like to try any drug which might produce strange and dangerous side effects on me.
b. I would like to try some of the new drugs that produce hallucinations.
- 87. a. A sensible person avoids activities that are dangerous.
b. I sometimes like to do things that are a little frightening.
- 88. a. I dislike "swingers".
b. I enjoy the company of real "swingers".
- 89. a. I find that stimulants make me uncomfortable.
b. I often like to get "high" (drinking liquor or smoking marijuana).
- 90. a. I like to try new foods that I have never tasted before.
b. I order the dishes with which I am familiar, so as to avoid disappointment and unpleasantness.
- 91. a. I enjoy looking at home movies or travel slides.
b. Looking at someone's home movies or travel slides bores me tremendously.
- 92. a. I would like to take up the sport of water-skiing.
b. I would not like to take up water-skiing.
- 93. a. I would like to try surf-board riding.
b. I would not like to try surf-board riding.
- 94. a. I would like to take off on a trip with no pre-planned or definite routes or timetable.
b. When I go on a trip I like to plan my route and timetable fairly carefully.
- 95. a. I prefer the "down-to-earth" kinds of people as friends.
b. I would like to make some friends in some of the "far out" groups like artists or "hippies".

(Appendix B continued)

- 96. a. I would not like to learn to fly an airplane.
b. I would like to learn to fly an airplane.
- 97. a. I prefer the surface of the water to the depths.
b. I would like to go scuba diving.
- 98. a. I would like to meet some persons who are homosexual (men or women).
b. I stay away from anyone I suspect of being "queer".
- 99. a. I would like to try parachute jumping.
b. I would never want to try jumping out of a plane with or without a parachute.
- 100. a. I prefer friends who are excitingly unpredictable.
b. I prefer friends who are reliable and predictable.
- 101. a. I am not interested in experience for its own sake.
b. I like to have new and exciting experiences and sensations even if they are a little frightening, unconventional, or illegal.
- 102. a. The essence of good art is in its clarity, symmetry of form, and harmony of colors.
b. I often find beauty in the "clashing" colors and irregular forms of modern painting.
- 103. a. I enjoy spending time in the familiar surroundings of home.
b. I get very restless if I have to stay around home for any length of time.
- 104. a. I like to dive off the high board.
b. I don't like the feeling I get standing on the high board (or I don't go near it at all).
- 105. a. I like to date members of the opposite sex who are physically exciting.
b. I like to date members of the opposite sex who share my values.
- 106. a. Heavy drinking usually ruins a party because some people get loud and boisterous.
b. Keeping the drinks full is the key to a good party.
- 107. a. The worst social sin is to be rude.
b. The worst social sin is to be a bore.

(Appendix B continued)

- 108. a. A person should have considerable sexual experience before marriage.
b. It's better if two married persons begin their sexual experience with each other.
- 109. a. Even if I had the money I would not care to associate with flighty persons like those in the "jet set".
b. I could conceive of myself seeking pleasure around the world with the "jet set".
- 110. a. I like people who are sharp and witty even if they do sometimes insult others.
b. I dislike people who have their fun at the expense of hurting the feelings of others.
- 111. a. There is altogether too much portrayal of sex in movies.
b. I enjoy watching many of the "sexy" scenes in movies.
- 112. a. I feel best after taking a couple of drinks.
b. Something is wrong with people who need liquor to feel good.
- 113. a. People should dress according to some standards of taste, neatness, and style.
b. People should dress in individual ways even if the effects are sometimes strange.
- 114. a. Sailing long distances in small sailing crafts is foolhardy.
b. I would like to sail a long distance in a small but seaworthy craft.
- 115. a. I have no patience with dull or boring persons.
b. I find something interesting in almost every person I talk with.
- 116. a. Skiing fast down a high mountain slope is a good way to end up on crutches.
b. I think I would enjoy the sensations of skiing very fast down a mountain slope.

Thank you for filling out these questionnaires. Please return the questionnaires and the IBM computerized answer sheet in the enclosed, self-addressed, stamped envelope.

Appendix C

The Most Frequent Alternative (MFA) Endorsed, the Proportion who Chose the MFA, and
the Correlation with Total Sensation Seeking Scores for Each of the Items on the Aerobic
Exercise Questionnaire for the Total Sample of Males (N = 48) and Females (N = 177)¹

<u>Short Description of Item</u>	<u>Males</u>			<u>Females</u>		
	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>
1. how long active	over 2 yrs	0.42	0.04	over 2 yrs	0.61	0.10
2. how many times a week	three	0.46	0.22	three	0.46	0.17*
3. how many hours a week	three	0.35	0.29*	three	0.41	0.17*
4. attend at same or different time	same time	0.73	-0.14	same time	0.68	-0.25**
5. level of class attended	advanced	0.48	0.20	advanced	0.37	0.14*
6. attendance over time	constant	0.60	0.26*	constant	0.45	0.04
7. active at home prior to classes	never	0.81	0.19	never	0.68	0.11
8. home workouts plus classes	never	0.79	0.05	never	0.75	0.00
9. active at home after starting	no	0.81	-0.19	no	0.85	0.05
10. when active at home after	after 1 mo	0.36	-0.20	after 6 mo	0.34	0.09
11. start, quit, restart classes	never	0.67	0.04	never	0.45	0.11
12. how long active at this club	over 3 yrs	0.33	-0.09	over 3 yrs	0.32	0.00
13. how many clubs attended	one	0.71	0.23	two	0.32	0.29**
14. work out on holidays	yes	0.52	0.31*	yes	0.52	0.04
15. work out on trips	yes	0.54	0.21	no	0.58	-0.02

¹ males : M age = 34.02; SD age = 8.58; M sss = 18.27; SD sss = 5.43

females : M age = 30.66; SD age = 7.72; M sss = 16.59; SD sss = 6.05

(Appendix C continued)

<u>Short Description of Item</u>	Males			Females		
	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>
16. seasons when don't work out	no	0.85	0.05	no	0.82	-0.01
17. compare to internal standards	yes	0.90	0.00	yes	0.94	0.07
18. compare to classmates	yes	0.58	0.16	yes	0.54	0.00
19. keep a daily log of workouts	no	0.96	-0.04	no	0.93	0.01
20. read aerobics magazines	no	0.77	-0.06	no	0.57	0.02
21. want to be an instructor	no	0.69	0.02	no	0.63	0.03
22. want to be in competitions	no	0.79	0.17	no	0.80	0.09
23. schedule activities around class	yes	0.81	0.27*	yes	0.78	0.05
24. number of other sports active in	none	0.35	0.04	none	0.40	0.13*
25. use aerobics as conditioning	no	0.60	0.35**	no	0.68	0.15*
26. number if injuries	none	0.67	0.38**	none	0.59	0.10
27. severity of injury	needed rest	0.88	0.28*	needed rest	0.77	0.09
28. continue workouts when injured	continued	0.58	0.29*	continued	0.41	0.05
29. withdrawal if forced to quit	moderate	0.41	0.32*	minimal	0.41	0.08
30. disruption if forced to quit	minimal	0.53	0.33*	minimal	0.57	0.02
31. consideration of long-term health	major	0.71	0.13	major	0.56	-0.11
32. consideration of "toning-up"	major	0.87	0.00	major	0.86	0.10
33. perception of weight	<10 lbs over	0.54	-0.06	<10 lbs over	0.48	-0.04
34. consideration of losing weight	major	0.40	0.09	major	0.54	-0.02
35. improve physical endurance	major	0.73	-0.01	major	0.67	-0.01
36. improve physical attractiveness	minor	0.44	0.20	major	0.47	0.07
37. participate in a new trend	not at all	0.77	0.03	not at all	0.77	-0.04

(Appendix C continued)

<u>Short Description of Item</u>	Males			Females		
	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>
38. enter a new social group	not at all	0.81	0.16	not at all	0.88	-0.02
39. pressure from friends	not at all	0.81	0.25*	not at all	0.85	-0.10
40. pressure from significant others	not at all	0.77	-0.18	not at all	0.86	-0.16*
41. special clothes before classes	no	0.77	-0.15	no	0.70	-0.14*
42. special clothes after classes	yes	0.67	0.03	yes	0.75	0.11
43. keep up with latest fashions	no	0.94	0.13	no	0.79	-0.10
44. wearing fashionable clothes	not at all	0.88	0.17	not at all	0.73	-0.11
45. dressing outrageously	no	0.88	0.11	no	0.93	0.05
46. chose club: convenience	yes	0.69	0.07	yes	0.72	0.05
47. chose club: workouts	no	0.56	-0.02	yes	0.51	0.03
48. chose club: instructors	yes	0.50	0.06	yes	0.57	0.04
49. chose club: economics	no	0.53	-0.22	no	0.55	-0.09
50. different instructors	yes	0.71	-0.03	yes	0.58	-0.01
51. opposite sex instructors	yes	0.90	0.08	yes	0.68	0.09
52. opposite sex classmates	yes	0.98	0.11	yes	0.87	0.06
53. social support of classes	yes	0.50	-0.02	no	0.64	0.01
54. importance to be around others	some	0.48	0.24	some	0.46	-0.03
55. importance to meet new friends	little	0.35	0.18	none	0.45	-0.02
56. importance to meet sex partners	none	0.77	0.38**	none	0.93	-0.06
57. club: social functions	none	0.77	0.30*	none	0.80	-0.06
58. aerobics: fun vs. boring	fun	0.96	-0.22	fun	0.97	0.03
59. see artistic beauty of exercises	yes	0.52	0.17	yes	0.62	0.04

(Appendix C continued)

<u>Short Description of Item</u>	Males			Females		
	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>
60. exercises like dancing	yes	0.54	0.31*	yes	0.74	0.09
61. euphoric after workout	usually	0.52	0.20	usually	0.62	-0.02
62. revived after workout	some	0.52	-0.01	some	0.47	0.00
63. attractive in aerobics clothes	no different	0.68	-0.12	no different	0.72	0.00
64. show off good body	no	0.83	0.34**	no	0.95	-0.11
65. boy/girl watch	no	0.52	0.48**	no	0.93	0.03
66. importance escape work stress	some	0.56	0.02	primary	0.46	0.02
67. importance escape relationship	none	0.44	0.16	none	0.35	0.05
68. predict when will quit	not in future	0.68	-0.17	not in future	0.97	0.08
69. quit: lose weight	no	0.98	0.33*	no	0.99	0.02
70. quit: routine workouts	no	0.85	0.25*	no	0.94	0.02
71. quit: too busy	no	0.92	0.33*	no	0.84	0.03
72. quit: another activity	no	0.75	0.26*	no	0.77	0.04
73. quit: structured exercises	no	0.96	0.24*	no	0.93	0.08
74. quit: afford classes	no	0.64	0.17	no	0.62	-0.02
75. quit: no improvement	no	0.77	0.41**	no	0.80	0.13*
76. quit: scheduling problems	no	0.72	0.21	no	0.69	0.04

notes: M = mean; SD = standard deviation; N = sample size; sss = total sensation seeking scores;

* = $p < .05$; ** = $p < .01$; ns = not significant ; - indicates there was more than one most common response

Appendix D

The Most Frequent Alternative (MFA) Endorsed, the Proportion who Chose the MFA, and
the Correlation with Total Sensation Seeking Scores for Each of the Items on the
Aerobic Exercise Questionnaire for Females Attending Clubs Costing Less
than \$100 per Year (N = 31) or more than \$400 per year (N = 20)²

<u>Short Description of Item</u>	<u>less than \$100 per year</u>			<u>more than \$400 per year</u>		
	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>
1. how long active	over 2 yrs	0.62	-0.02	over 2 yrs	0.60	0.28
2. how many times a week	three	0.42	-0.06	four - five	0.45	-0.06
3. how many hours a week	three	0.55	-0.10	four - five	0.45	-0.05
4. attend at same or different time	same time	0.81	0.35*	same time	0.50	0.40*
5. level of class attended	intermediate	0.68	0.03	advanced	0.60	-0.08
6. attendance over time	constant	0.42	0.19	constant	0.65	0.46*
7. active at home prior to classes	never	0.71	0.17	never	0.65	0.30
8. home workouts plus classes	never	0.71	0.03	never	0.75	-0.07
9. active at home after starting	no	0.84	0.04	no	0.90	0.49*
10. when active at home after		-	0.14		-	0.00
11. start, quit, restart classes	never	0.48	0.20	never	0.60	0.40*
12. how long active at this club	over 3 yrs	0.33	-0.05	1 - 2 yrs	0.50	0.39*
13. how many clubs attended	one	0.32	0.26	two	0.40	0.52*
14. work out on holidays	no	0.65	0.33*	yes	0.90	-0.17
15. work out on trips	no	0.71	0.20	yes	0.68	0.13

² less than \$100 per year: M age = 38.48; SD age = 7.51; M sss = 18.34; SD sss = 5.76

more than \$400 per year : M age = 30.05; SD age = 7.49; M sss = 15.05; SD sss = 5.88

(Appendix D continued)

	less than \$100 per year			more than \$400 per year		
<u>Short Description of Item</u>	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>
16. seasons when don't work out	no	0.73	0.24	no	0.85	-0.01
17. compare to internal standards	yes	0.94	0.10	yes	0.95	-0.46*
18. compare to classmates	yes	0.68	-0.31	yes	0.50	0.48*
19. keep a daily log of workouts	no	0.87	0.22	no	0.90	0.29
20. read aerobics magazines	no	0.58	-0.04	yes	0.50	-0.03
21. want to be an instructor	no	0.58	0.00	no	0.65	0.08
22. want to be in competitions	no	0.81	0.12	no	0.85	0.35
23. schedule activities around class	yes	0.68	-0.18	yes	0.85	-0.26
24. number of other sports active in	none	0.42	0.24	2 - 3	0.50	0.04
25. use aerobics as conditioning	no	0.68	-0.18	no	0.65	-0.65**
26. number if injuries	none	0.52	0.11	none	0.80	0.00
27. severity of injury	needed rest	0.94	0.06	needed rest	0.78	0.19
28. continue workouts when injured	continued	0.50	-0.09	continued	0.67	0.25
29. withdrawal if forced to quit	minimal	0.38	0.15	-	-	-0.13
30. disruption if forced to quit	minimal	0.58	-0.16	minimal	0.73	0.01
31. consideration of long-term health	major	0.52	0.22	major	0.65	-0.04
32. consideration of "toning-up"	major	0.77	0.07	major	0.95	-0.37
33. perception of weight	-	-	0.26	<10 lbs over	0.50	0.16
34. consideration of losing weight	major	0.39	-0.17	major	0.65	-0.09
35. improve physical endurance	major	0.58	0.17	major	0.75	-0.33
36. improve physical attractiveness	-	-	-0.12	major	0.50	0.17
37. participate in a new trend	not at all	0.77	-0.21	not at all	0.80	-0.18

(Appendix D continued)

<u>Short Description of Item</u>	less than \$100 per year			more than \$400 per year		
	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>
38. enter a new social group	not at all	0.90	-0.22	not at all	0.90	-0.30
39. pressure from friends	not at all	0.77	-0.25	not at all	0.75	0.39*
40. pressure from significant others	not at all	0.87	-0.07	not at all	0.95	0.13
41. special clothes before classes	no	0.77	0.23	no	0.65	0.19
42. special clothes after classes	yes	0.86	-0.17	yes	0.80	-0.50*
43. keep up with latest fashions	no	0.81	0.18	no	0.60	0.14
44. wearing fashionable clothes	not at all	0.84	-0.20	not at all	0.65	-0.58**
45. dressing outrageously	no	0.94	-0.18	no	0.90	0.00
46. chose club: convenience	yes	0.90	0.19	yes	0.84	-0.10
47. chose club: workouts	yes	0.52	0.22	no	0.60	-0.02
48. chose club: instructors	yes	0.61	0.26	yes	0.55	0.02
49. chose club: economics	yes	0.61	0.17	no	0.65	0.15
50. different instructors	no	0.87	0.07	yes	0.90	0.29
51. opposite sex instructors	yes	0.55	-0.09	yes	0.83	0.41
52. opposite sex classmates	yes	0.87	-0.02	yes	0.95	0.39
53. social support of classes	yes	0.57	-0.11	no	0.75	-0.22
54. importance to be around others	little	0.42	-0.13	some	0.50	-0.51*
55. importance to meet new friends	none	0.52	-0.06	little	0.50	-0.18
56. importance to meet sex partners	none	0.90	-0.20	none	0.90	0.20
57. club: social functions	none	0.87	-0.52**	none	0.70	0.37
58. aerobics: fun vs. boring	fun	1.00	0.00	fun	0.95	0.25
59. see artistic beauty of exercises	yes	0.71	-0.10	yes	0.55	0.17

(Appendix D continued)

<u>Short Description of Item</u>	less than \$100 per year			more than \$400 per year		
	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>
60. exercises like dancing	yes	0.84	0.21	yes	0.70	-0.33
61. euphoric after workout	usually	0.61	-0.01	usually	0.70	-0.03
62. revived after workout	some	0.52	0.07	some	0.60	-0.08
63. attractive in aerobics clothes	no different	0.77	-0.08	no different	0.80	-0.08
64. show off good body	no	1.00	0.00	no	0.95	0.39
65. boy/girl watch	no	0.97	0.37*	no	0.95	-0.19
66. importance escape work stress	some	0.65	-0.26	primary	0.65	0.07
67. importance escape relationship	-	-	-0.09	-	-	-0.07
68. predict when will quit	not in future	0.90	0.34*	not in future	1.00	0.00
69. quit: lose weight	no	1.00	0.00	no	1.00	0.00
70. quit: routine workouts	no	0.94	0.25	no	0.90	-0.26
71. quit: too busy	no	0.77	-0.09	no	0.85	-0.01
72. quit: another activity	no	0.74	-0.05	no	0.75	-0.47*
73. quit: structured exercises	no	0.90	-0.02	no	1.00	0.00
74. quit: afford classes	yes	0.58	-0.10	no	0.65	0.20
75. quit: no improvement	no	0.73	-0.27	no	0.80	0.57**
76. quit: scheduling problems	no	0.52	-0.19	no	0.70	-0.12

notes: M = mean; SD = standard deviation; N = sample size; sss = total sensation seeking scores;

* = $p < .05$; ** = $p < .01$; ns = not significant ; - indicates there was more than one most common response

Appendix E

The Most Frequent Alternative (MFA) Endorsed, the Proportion who Chose the MFA,
and the Correlation with Total Sensation Seeking Scores for Each of the Items on the
Aerobic Exercise Questionnaire for Married (N = 93) and Single (N = 58) Females³

<u>Short Description of Item</u>	married			single		
	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>
1. how long active	over 2 yrs	0.71	0.12	over 2 yrs	0.47	0.22*
2. how many times a week	three	0.46	0.19*	three	0.48	0.09
3. how many hours a week	three	0.39	0.26**	three	0.75	0.01
4. attend at same or different time	same time	0.66	0.26**	same time	0.74	0.19
5. level of class attended	intermediate	0.45	0.26**	intermediate	0.37	0.24*
6. attendance over time	constant	0.47	0.06	increased	0.36	-0.02
7. active at home prior to classes	never	0.66	0.04	never	0.74	0.37**
8. home workouts plus classes	never	0.72	-0.08	never	0.78	0.01
9. active at home after starting	no	0.86	-0.06	no	0.83	0.03
10. when active at home after	immediately	0.38	-0.04	after 6 mo	0.43	0.01
11. start, quit, restart classes	never	0.40	0.21*	never	0.38	0.09
12. how long active at this club	over 3 yrs	0.37	0.01	4-12 mo	0.33	0.19
13. how many clubs attended	two	0.37	0.35**	three	0.28	0.30*
14. work out on holidays	no	0.51	0.00	yes	0.54	-0.13
15. work out on trips	no	0.55	0.03	no	0.61	-0.03
16. seasons when don't work out	no	0.79	-0.09	no	0.81	0.09

³ married : M age = 33.68; SD age = 7.45; M sss = 15.47; SD sss = 5.89

single : M age = 25.66; SD age = 4.03; M sss = 18.33; SD sss = 5.60

(Appendix E continued)

<u>Short Description of Item</u>	married			single		
	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>
17. compare to internal standards	yes	0.95	-0.05	yes	0.95	-0.08
18. compare to classmates	yes	0.58	-0.01	yes	0.53	0.06
19. keep a daily log of workouts	no	0.92	-0.13	no	0.90	-0.19
20. read aerobics magazines	no	0.55	0.07	no	0.60	-0.21
21. want to be an instructor	no	0.63	0.02	no	0.60	-0.25*
22. want to be in competitions	no	0.84	-0.16	no	0.72	-0.09
23. schedule activities around class	yes	0.74	0.04	yes	0.81	-0.31**
24. number of other sports active in	none	0.40	0.08	none	0.45	0.29*
25. use aerobics as conditioning	no	0.58	-0.17*	no	0.79	-0.14
26. number if injuries	none	0.61	0.07	none	0.55	0.12
27. severity of injury	needed rest	0.72	0.20	needed rest	0.87	0.04
28. continue workouts when injured	continued	0.44	0.04	-	-	-0.16
29. withdrawal if forced to quit	moderate	0.43	0.05	minimal	0.39	0.18
30. disruption if forced to quit	minimal	0.59	0.10	minimal	0.59	0.07
31. consideration of long-term health	major	0.52	-0.16	major	0.62	-0.15
32. consideration of "toning-up"	major	0.88	-0.01	major	0.88	0.22*
33. perception of weight	<10 lbs over	0.44	-0.15	<10 lbs over	0.57	-0.04
34. consideration of losing weight	major	0.57	-0.08	major	0.66	0.07
35. improve physical endurance	major	0.73	-0.05	major	0.62	-0.11
36. improve physical attractiveness	minor	0.47	-0.02	major	0.57	0.22*
37. participate in a new trend	not at all	0.79	0.00	not at all	0.74	-0.16
38. enter a new social group	not at all	0.91	-0.19*	not at all	0.79	0.07

(Appendix E continued)

<u>Short Description of Item</u>	married			single		
	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>
39. pressure from friends	not at all	0.86	0.12	not at all	0.88	-0.24*
40. pressure from significant others	not at all	0.82	-0.12	not at all	0.86	-0.25*
41. special clothes before classes	no	0.70	0.21*	no	0.69	-0.03
42. special clothes after classes	yes	0.73	-0.13	yes	0.78	-0.23*
43. keep up with latest fashions	no	0.80	0.03	no	0.76	0.09
44. wearing fashionable clothes	not at all	0.77	-0.08	not at all	0.69	-0.24*
45. dressing outrageously	no	0.94	0.01	no	0.90	-0.15
46. chose club: convenience	yes	0.69	-0.10	yes	0.79	0.10
47. chose club: workouts	yes	0.55	0.02	yes	0.50	-0.21
48. chose club: instructors	yes	0.58	0.02	yes	0.59	-0.15
49. chose club: economics	no	0.60	0.13	yes	0.50	0.20
50. different instructors	yes	0.58	0.04	yes	0.59	-0.11
51. opposite sex instructors	yes	0.59	-0.03	yes	0.81	-0.04
52. opposite sex classmates	yes	0.85	0.01	yes	0.93	0.05
53. social support of classes	no	0.54	-0.05	no	0.52	0.12
54. importance to be around others	some	0.50	-0.06	some	0.45	0.10
55. importance to meet new friends	none	0.46	-0.12	-	-	0.11
56. importance to meet sex partners	none	0.98	0.09	none	0.83	0.01
57. club: social functions	none	0.84	-0.03	none	0.74	-0.04
58. aerobics: fun vs. boring	fun	0.98	-0.04	fun	0.98	-0.06
59. see artistic beauty of exercises	yes	0.63	-0.06	yes	0.55	0.07
60. exercises like dancing	yes	0.70	-0.14	yes	0.83	-0.07

(Appendix E continued)

<u>Short Description of Item</u>	married			single		
	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>
61. euphoric after workout	usually	0.66	0.10	usually	0.50	-0.13
62. revived after workout	some	0.48	0.09	primary	0.53	-0.11
63. attractive in aerobics clothes	no different	0.73	0.07	no different	0.66	-0.10
64. show off good body	no	0.95	0.21*	no	0.95	0.06
65. boy/girl watch	no	0.98	-0.06	no	0.84	0.04
66. importance escape work stress	some	0.44	0.05	primary	0.53	0.01
67. importance escape relationship	none	0.39	0.01	little	0.35	0.10
68. predict when will quit	not in future	0.99	0.07	not in future	0.95	0.16
69. quit: lose weight	no	0.98	0.00	no	1.00	0.00
70. quit: routine workouts	no	0.94	-0.05	no	0.93	-0.12
71. quit: too busy	no	0.86	-0.09	no	0.76	0.01
72. quit: another activity	no	0.80	-0.15	no	0.76	0.19
73. quit: structured exercises	no	0.95	0.02	no	0.95	-0.27*
74. quit: afford classes	no	0.66	-0.01	no	0.52	0.15
75. quit: no improvement	no	0.82	-0.08	no	0.73	-0.14
76. quit: scheduling problems	no	0.70	-0.04	no	0.63	0.14

notes: M = mean; SD = standard deviation; N = sample size; sss = total sensation seeking scores;

* = $p < .05$; ** = $p < .01$; ns = not significant ; - indicates there was more than one most common response

Appendix F

The Most Frequent Alternative (MFA) Endorsed, the Proportion who Chose the MFA, and
the Correlation with Total Sensation Seeking Scores for each of the Items on the
Aerobic Exercise Questionnaire for Males Attending Clubs Costing Less
than \$100 per Year (N = 6) and more than \$400 per year (N = 2)⁴

	less than \$100 per year	more than \$400 per year
<u>Short Description of Item</u>	<u>MFA</u> <u>proportion</u> <u>r_(sss)</u>	<u>MFA</u> <u>proportion</u> <u>r_(sss)</u>

Due to the small number of male participants, N = 6 for clubs costing less than \$100 per year and N = 2 for clubs costing more than \$400 per year, the MFA, the proportions, and the correlations are not reported.

notes: M = mean; SD = standard deviation; N = sample size; sss = total sensation seeking scores

⁴less than \$100 per year: M age = 36.50; SD age = 6.66; M sss = 17.50; SD sss = 8.67

more than \$400 per year : M age = 35.50; SD age = 9.19; M sss = 20.50; SD sss = 9.19

Appendix G

The Most Frequent Alternative (MFA) Endorsed, the Proportion who Chose the MFA, and the Correlation with Total Sensation Seeking Scores for Each of the Items on the Aerobic Exercise Questionnaire for Married (N = 28) and Single (N = 14) Males⁵

<u>Short Description of Item</u>	married			single		
	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>
1. how long active	over 2 yrs	0.54	0.01	-		-0.17
2. how many times a week	three	0.57	0.18	-		0.15
3. how many hours a week	three	0.46	0.27	-		0.32
4. attend at same or different times	same time	0.75	0.12	same time	0.57	0.10
5. level of class attended	advanced	0.50	0.27	advanced	0.57	0.21
6. attendance over time	constant	0.64	0.14	-		-0.11
7. active at home prior to classes	never	0.82	0.35*	never	0.86	-0.12
8. home workouts plus classes	never	0.75	0.07	never	0.79	-0.04
9. active at home after starting	no	0.79	0.39*	no	0.79	-0.44
10. when active at home after	within 1 mo	0.42	-0.83*	-		--
11. start, quit, restart classes	never	0.68	-0.05	never	0.57	-0.07
12. how long active at this club	over 3 yrs	0.50	-0.07	4-12 mo	0.36	0.07
13. how many clubs attended	one	0.79	0.40*	one	0.57	-0.39
14. work out on holidays	yes	0.50	-0.35*	yes	0.64	-0.03
15. work out on trips	yes	0.54	-0.37*	yes	0.57	0.54*
16. seasons when don't work out	no	0.86	0.08	no	0.79	0.39

⁵ married : M age = 37.82; SD age = 8.02; M sss = 16.75; SD sss = 6.78

single : M age = 26.29; SD age = 3.67; M sss = 22.07; SD sss = 3.71

(Appendix G continued)

<u>Short Description of Item</u>	married			single		
	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>
17. compare to internal standards	yes	0.93	-0.03	yes	0.79	-0.19
18. compare to classmates	yes	0.54	-0.12	yes	0.71	0.21
19. keep a daily log of workouts	no	0.96	0.02	no	1.00	0.00
20. read aerobics magazines	no	0.68	0.01	no	0.86	0.49*
21. want to be an instructor	no	0.68	-0.02	no	0.57	0.33
22. want to be in competitions	no	0.93	-0.01	yes	0.50	-0.11
23. schedule activities around class	yes	0.79	-0.36*	yes	0.79	-0.14
24. number of other sports active in	none	0.50	-0.17	2 - 3	0.57	0.38
25. use aerobics as conditioning	no	0.64	-0.44**	yes	0.57	-0.32
26. number if injuries	none	0.68	0.58**	none	0.57	0.06
27. severity of injury	needed rest	0.92	0.08	needed rest	0.89	-0.70*
28. continue workouts when injured	continued	0.54	-0.44	continued	0.67	0.25
29. withdrawal if forced to quit	moderate	0.40	0.17	moderate	0.46	-0.46
30. disruption if forced to quit	minimal	0.58	-0.15	minimal	0.54	-0.27
31. consideration of long-term health	major	0.79	0.30	major	0.64	-0.30
32. consideration of "toning-up"	major	0.85	-0.18	major	0.86	0.26
33. perception of weight	<10 lbs over	0.54	-0.21	<10 lbs over	0.57	0.11
34. consideration of losing weight	minor	0.39	-0.21	major	0.50	0.44
35. improve physical endurance	major	0.79	0.11	major	0.64	-0.23
36. improve physical attractiveness	minor	0.50	0.12	major	0.57	-0.19
37. participate in a new trend	not at all	0.82	-0.23	not at all	0.64	0.41
38. enter a new social group	not at all	0.86	0.28	not at all	0.71	-0.18

(Appendix G continued)

<u>Short Description of Item</u>	married			single		
	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>
39. pressure from friends	not at all	0.89	0.22	not at all	0.64	0.17
40. pressure from significant others	not at all	0.71	-0.25	not at all	0.86	0.02
41. special clothes before classes	no	0.82	0.33*	no	0.64	-0.16
42. special clothes after classes	yes	0.71	-0.05	yes	0.64	0.02
43. keep up with latest fashions	no	0.93	-0.01	no	0.93	-0.36
44. wearing fashionable clothes	not at all	0.86	0.07	not at all	0.86	0.39
45. dressing outrageously	no	0.89	-0.12	no	0.79	-0.05
46. chose club: convenience	yes	0.75	0.15	yes	0.57	-0.38
47. chose club: workouts	yes	0.54	-0.03	no	0.64	0.08
48. chose club: instructors	yes	0.57	-0.05	yes	0.50	-0.02
49. chose club: economics	no	0.56	0.06	no	0.57	0.04
50. different instructors	yes	0.61	0.05	yes	0.79	0.03
51. opposite sex instructors	yes	0.86	-0.15	yes	0.93	0.42
52. opposite sex classmates	yes	0.96	-0.14	yes	1.00	0.00
53. social support of classes	yes	0.54	0.06	no	0.57	0.20
54. importance to be around others	some	0.46	0.30	some	0.50	-0.24
55. importance to meet new friends	little	0.43	0.17	some	0.50	-0.15
56. importance to meet sex partners	none	0.89	0.49**	none	0.43	0.31
57. club: social functions	none	0.82	0.38*	none	0.57	0.04
58. aerobics: fun vs. boring	fun	0.93	-0.22	fun	1.00	0.00
59. see artistic beauty of exercises	yes	0.50	0.00	yes	0.57	-0.21
60. exercises like dancing	no	0.54	-0.34*	yes	0.57	-0.39

(Appendix G continued)

<u>Short Description of Item</u>	married			single		
	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>	<u>MFA</u>	<u>proportion</u>	<u>r_(sss)</u>
61. euphoric after workout	usually	0.57	0.28	usually	0.50	-0.14
62. revived after workout	some	0.62	-0.08	some	0.57	-0.30
63. attractive in aerobics clothes	no different	0.75	-0.10	no different	0.71	-0.01
64. show off good body	no	0.79	-0.46**	no	0.93	-0.19
65. boy/girl watch	no	0.57	-0.51**	yes	0.64	-0.053
66. importance escape work stress	primary	0.64	0.12	some	0.50	-0.28
67. importance escape relationship	none	0.43	0.19	none	0.43	-0.29
68. predict when will quit	not in future	0.96	-0.21	not in future	0.93	-0.05
69. quit: lose weight	no	1.00	0.00	no	0.93	-0.05
70. quit: routine workouts	no	0.93	0.20	no	0.64	-0.28
71. quit: too busy	no	1.00	0.00	no	0.79	0.04
72. quit: another activity	no	0.82	-0.20	no	0.57	0.16
73. quit: structured exercises	no	0.96	0.01	no	0.93	-0.22
74. quit: afford classes	no	0.67	-0.03	no	0.57	-0.02
75. quit: no improvement	no	0.78	-0.32	no	0.64	-0.22
76. quit: scheduling problems	no	0.74	0.06	no	0.64	-0.10

notes: M = mean; SD = standard deviation; N = sample size; sss = total sensation seeking scores;

* = $p < .05$; ** = $p < .01$; ns = not significant ; - indicates there was more than one most common

response; -- indicates no correlation could be calculated