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ATTITUDES AND BEHAVIORS OF GREEK COLLEGE STUDENTS AND NON-COLLEGE RESPONDENTS TOWARDS BADMINTON

Key words: theory of planned behavior, badminton.

ABSTRACT

The aim of this study was to examine attitudes and behaviors of various groups of people towards badminton. The subjects were studied over a four-month period and included: (1) 14 college students – badminton players (8 men, 6 women); (2) 41 college students who participated in a badminton course (16 men, 25 women); (3) 26 college students who did not participate in a badminton course (12 men, 14 women); and (4) 40 non-college respondents (17 men, 23 women). These groups completed a planned behavior questionnaire. The results indicated that Group 1 scored higher in all variables except for knowledge and role identity, and that Group 4 attained higher scores in comparison with Group 3 in all variables except for attitudes. This pioneer study can help people get to know better and get involved in such non-widespread sports as badminton. It also demonstrates the important role such sports can play in athletic and academic communities.

INTRODUCTION

According to the theory of reasoned action, a subject's behavior is preceded by that his or her intention. The probability of exhibiting a specific behavior is referred to as 'behavioral intention'. The stronger the intention of a subject, the greater the likelihood that the subject will behave according to his or her intention [4]. Intention is determined by a combination of two factors: (i) attitude towards the behavior (i.e., a positive or negative predisposition towards a specific behavior); and (ii) subjective norms [3]. These subjective norms are of two kinds: (i) behavioral beliefs (which affect attitude towards the behavior); and (ii) normative beliefs (which reflect social factors). Each behavioral belief reflects whether important individuals would approve or disapprove of the behavior [14]. The reasoned action model is

effective in examining behaviors over which individuals have high control [15].

According to the planned behavior theory [1, 2], exhibition of a behavior does not only relate to one's intention. Although a behavior can be totally under one's control, in most cases various obstacles are present which impinge on the person's decision to display a particular behavior. Such obstacles can be internal factors (agility, knowledge, planning) or external factors (time, opportunity, cooperation with others, etc.) [5].

Two other variables have been added to the main model of planned behavior theory to predict exercise behavior [15]: role identity (a particular social object that represents a dimension of the self) and attitude strength (a variable that expresses how positive, strong, and important are the attitudes towards a given behavior). Role identity serves as a link between the individual self and society [8]. It is

based on Burke's [7] identity theory in which an individual's self-concept is organised into a hierarchy of role identities that correspond to one's position in the social structure. These might include being a parent, a spouse, or an employee [9].

Information is also mentioned as an important factor in understanding how behavior is consistent with attitude [5, 11, 15]. Limited information and knowledge about a behavior can represent a serious obstacle, preventing individuals from displaying the behavior in question [15]. Therefore, absence of this factor can reduce the accuracy of any assessment of behavior. Information is a construct that has not received much attention in recent research based on planned behavior theory. Although it is frequently reported as being an important factor in literature on attitudes, few studies have provided a clear definition of it. Krosnick et al., however did define information (or, rather, *interest in* relevant information, to use their terminology) as being 'the extent to which an individual is motivated to gather information about an attitude object' [11, p. 1133].

In addition, Palmer Burwitz, Smith and Collins [13] indicated in their research on the adherence to fitness among elite netball players that planned behavior is associated with self-motivation, enjoyment of fitness training, and the role of the players (who were key factors in fitness training behavior).

Wankel and Mummery [16] used the planned behavior model in a survey and found that physical activity was best predicted by the attitudes and norms of respondents across all age and gender groups. Further analysis of these results revealed that perceived behavioral control predicted intention differently across various age groups. More specifically, in the older age groups, perceived behavioral control and subjective norm became increasingly more important. In contrast, attitude became less important [17].

Even though there has been no specific research to demonstrate relationships between planned behavior theory and the sport of badminton, there has been a study showing a direct relationship between this theory and exercise behavior. Kerner, Matthew and Grossman [10] were able to demonstrate support for the assumption that planned behavior can be used to understand the exercise behavior of professional management personnel. In a separate study of older adults, Michels, Thomas and Kugler [12] produced

results which supported the hypothesis that planned behavior theory is a valid model for predicting both the intention to exercise and the actual exercise undertaken.

In addition, Blue [6] conducted a critical review of literature on exercise belief and intention to assess the efficacy of using planned behavior theory with respect to exercise behavior. Blue's study indicated that there was definite evidence for the predictive ability of the theory. More specifically, it was reported that planned behavior theory is an effective theory for the study of exercise because it includes beliefs about control of factors that would facilitate or inhibit the carrying out of exercise.

In the present investigation, planned behavior theory was used to predict the behaviors and attitudes of Greek college student badminton players, college students and non-college respondents towards badminton. In addition, possible changes in these attitudes and behaviors after a four-month period were studied.

METHODS

Subjects and procedure

The sample consisted of four different groups. Group 1 consisted of 41 Greek students (16 men and 25 women) of the Democritus University of Thrace, Komotini, where the sport of badminton is a fairly new course in the university curriculum. Group 2 consisted of 14 Greek student athletes (8 men 6 women) of the Democritus University of Thrace, Komotini. Group 3 consisted of 26 Greek students (12 men and 14 women) of the Democritus University of Thrace, Komotini. These students were not participating in the badminton course. Group 4 consisted of 40 randomly selected non-college respondents (17 men and 23 women).

All subjects completed a planned behavior theory questionnaire [5, 15] in two different periods: a 'pre-test' took place at the beginning of the fall semester (November) and a 'post-test' took place at the beginning of the spring semester (March).

The aim of this study was to examine the attitudes and intentions towards badminton in each of the four groups, and to take note of any changes that might have occurred after the end of a four-month period. The changes could have been

influenced by general information from newspapers, magazines, the 'Athens 2004' organising body and other media sources in view of the impending Olympic Games in Athens in 2004.

The particular components of the questionnaire included:

Intention

Intention was estimated by the total score of the responses to three different items:

1. 'I intend to play badminton regularly next month'.
2. 'I will try to play badminton regularly next month'.
3. 'I am determined to play badminton regularly next month'.

Responses to the first item ('I intend ... ') were rated on a 7-point scale from 'likely' to 'unlikely'. For the other two items ('I will try ... ' and 'I am determined ... '), responses were rated on a 7-point scale with endpoints 'yes, sure' to 'not at all'.

Attitudes

Attitudes were determined by the answers to the item: 'For me, to play badminton regularly next month is... '. Responses were rated on a 7-point scale, on six bipolar adjectives ('good – bad', 'foolish – smart', 'healthy – unhealthy', 'useful – not useful', 'nice – ugly', 'pleasant – unpleasant').

Subjective norms

Subjective norms were determined from the responses to the following four items:

1. 'If I to play badminton regularly next month, people who are important to me ... '.
2. 'Generally, I enjoy doing what some important people want me to do'.
3. 'Some people, who are important in my life, believe that I must play badminton regularly next month'.
4. 'Generally, I like doing what some important people want me to do'.

Responses were given on 7-point scales as follows:

- for the first item: ' ... will disagree – will agree';
- for the second item: 'disagree – agree';
- for the third item: 'possible – impossible'; and
- for the fourth item: 'disagree – agree'.

Perceived behavioral control

The total score of three items was used to estimate individuals' perception of control over the specific behavior. Two propositions were put to participants:

1. 'If I wanted to, I could play badminton regularly next month'.
2. 'How much control do you exert over playing badminton regularly next month?'

Participants' responses on 7-point scales were as follows:

- to the first proposition: from 'likely' to 'unlikely';
- to the second proposition: from 'complete control' to 'no control'.

Role identity

Four items were used to measure role identity:

1. 'I consider myself to be able to play badminton regularly next month'.
2. 'I consider myself a person who will play badminton regularly next month'.
3. 'It is in my character (temperament) to play badminton regularly next month'.
4. 'Generally, I am the type who is going to be playing badminton regularly next month'.

Responses were given on 7-point scales from 'agree' to 'disagree'.

Attitude strength

Eight items were used to measure attitude strength (Theodorakis, 1994):

1. 'Is it certain that you are going to be playing badminton regularly next month?'
2. 'Is it right for you to play badminton regularly next month?'
3. 'I feel very sure that I will play badminton regularly next month'.
4. 'Is it important for you, personally, to play badminton regularly next month?'
5. 'How interested are you in playing badminton regularly next month?'
6. 'For me to play badminton regularly next month is ... '.
7. 'With the knowledge I have, I think I will play badminton regularly next month'.
8. 'Do you find it interesting to play badminton regularly next month?'

Responses were given on 7-point scales as follows:

- for the first item: ‘very sure – very unsure’;
- for the second and sixth items: ‘not at all – very much so’;
- for the third and seventh items: ‘agree – disagree’;
- for the fourth item: ‘very important – not important at all’; and
- for the fifth and eighth items: ‘very much – not at all’.

Knowledge

Four items were used to measure the knowledge that people had on the specific subject:

1. ‘Some of us are very well informed about playing badminton regularly, whereas other individuals are not. How well informed about playing badminton regularly do you believe you are?’
2. ‘If someone told you to write anything you know about playing badminton regularly, how much could you write?’
3. ‘In relation to other subjects, I believe that I am very well informed on the issue of the regular playing of badminton’.
4. ‘How much do you think you know on the issue of the regular playing of badminton?’
5. The answers on 7-point scales were as follows:
 - for the first item: ‘very well informed – not informed at all’;
 - for the second item: ‘very little – a lot’;
 - for the third item: ‘I agree – I disagree’;
 - for the last item: ‘no knowledge at all – a lot of knowledge’.

Information

Four items were used to measure information. These items were:

1. ‘Some individuals have told me that they pay attention to different information about playing badminton regularly. How much attention do you pay to different information about playing badminton regularly?’
2. ‘How often did you pay attention to different printed material with information about playing badminton regularly?’
3. ‘I am very interested in any information regarding playing badminton regularly’.
4. ‘How often do you pay attention to information regarding playing badminton regularly?’

Responses were given on 7-point scales as follows:

- for the first item: ‘I never pay attention – I very much pay attention’;
- for the second item: ‘never – very often’;
- for the third item: ‘I agree – I disagree’; and
- for the fourth item: ‘I never pay attention – I very much pay attention’.

The same questionnaire was completed in the post-test period.

RESULTS

Descriptive statistics

Table 1 shows that all scales of the questionnaire demonstrated acceptable internal consistency, i.e., for all of them, Cronbach’s alpha was higher than 0.61.

Table 1. Internal validity factors and descriptive characteristics of all variables

Variables	Mean (± d)	Number of subjects	Cronbach’s alpha
Pre-test			
Attitudes	5.05 (±1.1)	6	0.86
Intention	4.19 (±1.8)	3	0.86
Subjective norms	3.77 (±1.3)	4	0.62
Role identity	4.11 (±1.5)	4	0.82
Perceived behavioral control	4.00 (±1.5)	3	0.79
Attitude strength	4.05 (±1.5)	8	0.94
Knowledge	2.73 (±1.3)	4	0.87
Information	3.42 (±1.4)	4	0.80
Post-test			
Attitudes	5.18 (±1.1)	6	0.86
Intention	4.27 (±1.8)	3	0.87
Subjective norms	3.82 (±1.1)	4	0.61
Perceived behavioral control	4.06 (±1.5)	3	0.81
Role identity	4.08 (±1.5)	4	0.82
Attitude strength	4.12 (±1.5)	8	0.94
Knowledge	3.23 (±1.4)	4	0.87
Information	3.54 (±1.5)	4	0.83

ANOVAs and repeated measures

One-way ANOVA was conducted for all variables. The results did reveal significant differences in all variables except for the variable of subjective norms. Therefore, specifically for this variable, we proceeded to conduct a repeated measures analysis between pre-test and post-test periods, in order to detect any differences between the groups. The results indicated significant differences between groups $F(3,110) = 3.91$, $p < 0.05$.

ANCOVAs

We continued with an ANCOVA analysis in the post-test period in order to examine whether these differences resulted from groups' differences from the pre-test measurement (see Table 2). The results showed that 'attitudes' was a significant factor in the differences $F(1,115) = 74.39$, $p < 0.001$. Following this adjustment, significant differences remained between the groups $F(3,115) = 19.59$, $p < 0.001$.

these differences were the result of the groups' differences from the pre-test measurement. The results showed that 'role identity' was a significant factor in the differences $F(1,115) = 48.73$, $p < 0.001$. Following this adjustment, the significant differences remained between the groups $F(3,115) = 6.32$, $p < 0.001$.

We continued with an ANCOVA analysis in the post-test period in order to find out whether these differences were the result of the groups' differences from the pre-test measurement. The results showed that 'attitude strength' was a significant factor in the differences $F(1,115) = 34.51$, $p < 0.001$. Following this adjustment, the significant differences remained between the groups $F(3,115) = 6.53$, $p < 0.001$.

We continued with an ANCOVA analysis in the post-test period in order to find out whether these differences were the result of the groups' differences from the pre-test measurement. The results showed that 'perceived behavioral control' was a significant factor in the differences $F(1,114) = 31.98$, $p < 0.001$. Following this adjustment, the

Table 2. Means adjusted and standard errors of all variables according to groups

Variables	Group 1		Group 2		Group 3		Group 4	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
Attitudes	0.796	0.113	0.624	0.211	-0.265	0.137	-0.424	0.116
Intention	0.787	0.188	0.427	0.335	-0.782	0.242	-0.182	0.179
Role identity	0.454	0.189	0.733	0.329	-0.611	0.232	-0.467	0.182
Attitude strength	0.597	0.163	0.305	0.299	-0.604	0.202	-0.110	0.159
Perceived behavioral control	0.462	0.166	0.427	0.294	-0.584	0.206	-0.159	0.158
Information	0.541	0.168	0.127	0.293	-0.385	0.211	-0.018	0.162
Knowledge	1.00	0.157	1.33	0.284	-0.348	0.203	0.168	0.153

Group 1 – students taking part in a badminton course; Group 2 – student athletes; Group 3 – students who did not take part in a badminton course; Group 4 – non-college subjects.

We continued with an ANCOVA analysis in the post-test period in order to find out whether these differences were the result of the groups' differences from the pre-test measurement. The results showed that 'intention' was a significant factor in the differences $F(1,115) = 38.15$, $p < 0.001$. Following this adjustment, the significant differences remained between the groups $F(3,115) = 8.23$, $p < 0.001$.

We continued with an ANCOVA analysis in the post-test period in order to find out whether

significant differences remained between the groups $F(3,114) = 4.95$, $p < 0.01$.

We continued with an ANCOVA analysis in the post-test period in order to find out whether these differences were the result of the groups' differences from the pre-test measurement. The results showed that information was a significant factor in the differences $F(1,115) = 26.35$, $p < 0.001$. Following this adjustment, the significant differences remained between the groups $F(3,115) = 3.95$, $p < 0.01$.

We continued with an ANCOVA analysis in the post-test period in order to find out whether these differences were the result of the groups' differences from the pre-test measurement. The results showed that knowledge was a significant factor in the differences $F(1,114) = 44.43$, $p < 0.001$. Following this adjustment, the significant differences remained between the groups $F(3,114) = 13.53$, $p < 0.001$.

DISCUSSION

The obtained results support the validity of the planned behavior model in the sport domain, i.e. both attitudes and perceived behavioral control contributed to respondents' intentions regarding badminton. The results also indicate that role identity, attitude strength, knowledge and information explain additional variance among the respondents' intentions to was already explained by planned behavior variables [15].

The understanding and prediction of behaviors is improved by theories that take into account the variables of preferences, individual norms, self-identities and intentions in assessing role identity. In addition, attitude strength shows how important it is for people to express positive and strong attitudes they have towards a given behavior. The more certain people are about their intentions to play badminton, and the more assured they are about the importance of this participation, the more frequently they play it (i.e., hold their intentions constant). Moreover, the planned behavior model is more successful when the variables of attitude strength and role identity are used in the analysis.

More specifically, the results show that subjects from Group 1 (students taking a badminton course) have the highest scores of all groups, except for the variables of role identity and knowledge. In addition, they express their strong attitudes and intentions towards the specific behavior, and remain well informed about any topics on the subject of badminton. Especially Group 2 demonstrated that social aspects (role identity) play an important role in their overall behavior and involvement with badminton. This demonstrates how important it is for people to be supported by others (parents, peers, friends) in order to maintain the decision to undertake a new sport such as badminton, and then keeping to this behavior.

The analysis also revealed some interesting results between Group 3 (students who did not take the badminton course) and Group 4 (non-college respondents). Those in Group 4 demonstrate stronger intentions and attitudes, and feel more confident upon starting this new behavior and following it in the future. They also feel that this behavior serves as a link between themselves and the rest of society [5, 12].

In addition, significant differences are shown for the variables of knowledge and information [15]. The non-college respondents from Group 4 again scored higher than Group 3 (students who did not take the badminton course). An explanation for this might be that Komotini is the town, where the first Greek badminton club was established (by the university students), and it remains one of the few areas in Greece with a badminton club. The people of the district thus have a greater opportunity to get to know more about the sport. Also, the people from Komotini may believe they are better informed about the sport than the students, because many of the students come from other areas of Greece, where badminton clubs do not exist.

Finally, the respondents from Group 4 might feel the need to be better informed as compared with the students of the Physical Education Department who are already considered by the rest of Greek society to be 'experts' in the area of sports. In addition, the students themselves might believe that they already have enough information about similar (sporting) subjects as a result of their university studies.

There are, however, some limitations in attempting to generalise from the findings of the present investigation to other settings. In particular, there were initial differences between the groups in some variables, and the investigation was conducted in the town of Komotini, where a badminton club has existed for quite some time.

It should be stressed that the present study is of pioneering character. In Greece, badminton is not a well-known or widespread sport. Getting familiar with badminton and other non-widespread sports will definitely enhance knowledge of sports not only among university students but also among the wider Greek population. Similar studies may improve the understanding of sportsmanship as well as voluntarism.

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