

Perceived yoga exercise benefits and barriers of university students by gender: Results of a survey research

Roghaiyeh Kabiri, Syed Kamaruzaman Syed Ali, Hutkemri Zulnaidi

Department of Education, University of Malaya, Kuala Lumpur, Malaysia.

Abstract. This study was conducted to explore perceived yoga exercise benefits and barriers of university students based on their gender. Participants (n=210) were university of Malaya undergraduate students from faculty of education in Kuala Lumpur. The method of sampling was cluster random sampling. This study utilized a quantitative methodology research to investigate the perceived benefits and barriers towards yoga exercise among university students using the health belief model. This was a survey study of data collection. One-way MANOVA was used to determine the differences. Some 197 subjects completed the questionnaire and the results of inferential analysis demonstrated that males and females are similar in reporting perceived benefits in the Psychological dimension $F(1,195) = .55$, $sig = .46$ ($p > .05$), Physical dimension $F(1,195) = .05$, $sig = .835$ ($p > .05$), Disease Prevention dimension $F(1,195) = 1.11$, $sig = .29$ ($p > .05$), Social dimension $F(1,195) = .09$, $sig = .92$ ($p > .05$). They are also similar in reporting perceived barriers in the Negative Preconception dimension $F(1,195) = .20$, $sig = .66$ ($p > .05$), Cost dimension $F(1,195) = 2.36$, $sig = .13$ ($p > .05$), Time Prevention dimension $F(1,195) = .71$, $sig = .40$ ($p > .05$) and Fears dimension $F(1,195) = .71$, $sig = .40$ ($p > .05$). This study tried to determine how students' gender could influence their perceptions about yoga exercise. The results of this study show that males and female are similar in their perceived benefits and barriers to yoga exercise. Hence, in creating yoga exercise intervention for university students, gender is not a vital component to consider.

Keywords. Perceived benefits, perceived barriers, yoga.

Introduction

It has been proven that there are a large number of benefits for doing exercise in a regular base.

Research has shown that people who are physically active are at a reduced risk for developing a host of chronic illnesses, such as cardiovascular diseases, type 2 diabetes, some types of cancer, and osteoporosis (Chiuve et al., 2008; Jeon et al., 2007; Krall & Dawson-Hughes, 1994; Kramer & Wells, 1996; Powell et al., 1987). It has also proven that exercise can have huge effects on mood improvements, cognitive functioning, and reductions in depression and anxiety (Berger & Motl, 2000; Colcombe & Kramer, 2003; Craft & Landers, 1998; Petruzzello et al., 1991; Rejeski & Mihalko, 2001).

Yoga, as an ancient discipline that applies a combination of practices including asana, breath work (breathing technique), and meditation, has recently shown potential as an intervention targeting a number of consequences related with lifestyle-related health conditions. Yoga as a physical activity can be differentiated from many typical forms of exercise in a number of ways according to yoga experts. One noticeable difference is that yoga is non-competitive, while most type of physical exercise are competitive. In fact, yoga place greater emphasis on a person's relationship to themselves than to others (Marshall, 1978; Iyengar, 2001). Additionally, normal types of physical exercises often contain quick, forceful, repetitive movements with heavy breathing (Iyengar, 2001; Saraswati, 1987). These kinds of exercises could help to improve the skeletal and muscular systems but can also cause overwork, tension and exhaustion (Iyengar, 2001). Such exercises increase energy levels

by boosting nerve function, but can also exhaust endocrine glands and cellular reserves, hence increasing cellular toxins (Iyengar, 2001).

On the other hand, Asana are performed slowly and in a relaxed way, bringing steadiness to the body, mind and senses (Iyengar, 2001; Saraswati, 1987). Although many postures are simulative, they nonetheless do not lead to breathlessness, and are said to result in a sense of rejuvenation rather than fatigue following the practice (Iyengar, 2001). When the muscles and joints are used in a slow way, the practitioner could develop a pleasant feeling and it reduces the chances of injury (Marshall, 1978).

It has proven that the qualities of slowness, concentration and relaxation with which the movements are executed allow the asanas to affect not only the skeletal and muscular systems, but also the nervous system, endocrine glands, internal organs, and the mind (Saraswati, 1987; Iyengar, 2001). Asanas usually provide a more thorough range of postures for the body, particularly in terms of their focus on movement of the spine, which is vital to nervous system functioning (Marshall, 1978). This is why yogis consider the practice of yoga to be one of the most comprehensive forms of health practice (Saraswati, 1987).

Currently university students are dealing with some issues as followed:

First of all, obesity is a serious problem among students. For instance, Over the previous 20 years obesity in the United States has reached epidemic proportions and has become a public health concern (U.S. Department of Health and Human Services, 2010). One contributor to obesity is a dearth of exercise (Desai, Miller, Staples, & Bravender, 2008). The health risks related to inactivity is a serious public health problem (Blair, 2009). A large number of college students (33.7%) are classified as overweight or obese (American College Health Association, 2013). The largest rise in overweight and obesity is seen in young adults aged between 18 to 29 years (Racette et al., 2005). More importantly, the tendency to gain weight and lower physical activity is prevalent during this transition time (Egeli et al., 2011; Nelson et al., 2006).

Secondly, it is also a critical time for youths to make independent lifestyle decisions because of freedom

from parental control. At this life stage, young adults are adopting long-lasting health behaviors (Lerner et al., 2011; Nelson et al., 2008), with research showing that adolescent PA habits usually last into adulthood (Keating et al., 2005; Verplanken & Melkevik, 2008; Yang et al., 2007). Those who have high level of PA have been shown to have better chances for establishing lifelong involvement in adult PA (Telama et al., 2005).

Lastly, students lead complex, busy lives. Most of them juggle for their classes and assignments along with their family life. Depression is one of the main public health problems (Adewuya et al., 2006) and high level of stress is another serious issue which students are coping with (Schleicher et al., 2009).

Lack of physical activity among university students is due to low perceived benefits and high perceived barriers to exercise. In fact, the perceived benefits and barriers to exercise are vital mediators of physical activity behavior change (Nahasa et al., 2003).

Effective PA promotion programs and interventions require an evidence base of students' attitudes toward exercise in terms of perceived benefits and barriers. Previous research has found a significant relationship between perceived benefits and barriers to exercise and current exercise habits (Grubbs & Carter, 2002). Perceived benefits and barriers to exercise are crucial mediator of exercise behavior change (Lovell et al., 2010). To the best of our knowledge, there is no survey study in terms of university students' attitudes toward yoga. Therefore, there is a gap in knowledge related to the perceived benefits and barriers to yoga exercise among university students.

Furthermore, based on previous research, both genders do not necessarily indulge in sport for the same motivations. Kelinske et al. (2001, as cited in Campbell et al., 2008) indicated that there is little difference between men and women and their perceived benefits when engaging in sport. Tergerson & King (2002) revealed there is significant difference between male and female perceived benefits and barriers to physical activity. Hence, it is crucial to study both males and females' perception towards yoga exercise to identify if there are gender differences.

Based on Atkinson (2009), Quantitative research is needed to assess the extent of perceptions in general

and to make comparisons based on gender and racial groups.

The purpose of present study is to identify perceived benefits and barriers related to yoga exercise based on the gender difference among university students to yoga.

Methods

This study investigates the perceived benefits and barriers of university students about yoga at University of Malaya. In fact, this study shows how those benefits and barriers may differ by gender.

The instrument was a questionnaire from previous study (Nayak et al., 2014) has adapted for this study; In fact, they designed the instrument based on Health Belief Model and previous research including 13 benefit items and 13 barrier items. Based on literature review and discussion with experts, some changes had been made to the questionnaire such as organizing items in factors, deleting and adding few items to have current questionnaire. Then the pilot study was implemented in this study to have validate questionnaire prior to actual data collection. The questions include: The perceived benefits dependent variable has 4 factors (Psychological Benefits, Physical Benefits, Disease Prevention and Social Benefits). Psychological Benefits has 6 items (Increases body awareness, Improves my mental ability, Reduces my stress level, Makes me feel relaxed, Helps me to accept myself better, Inspires me for a mindful approach to life). Physical Benefits has 4 items (Improves posture, Improves Balance, Improves Coordination, Improves Flexibility). Disease Prevention involves 5 items (Improves immune response, Eases the symptoms of asthma, Lowers blood pressure, Reduces arthritic pain, Prevents chronic fatigue). Social Benefits has 3 items (Helps me socialize, Helps me make new friends, Improve the quality of relationships). The last part of questionnaire contains 13 Likert type scale questions about perceived barriers of yoga to find out about the barriers. The perceived barriers dependent variable has 4 factors (Negative Preconception, Cost, Time, and Fears). Negative Preconception has 4 items involved (Female dominated, Lack of aerobic challenge, Negative first experience, and Negative impression of yoga teacher). Cost allocated has 3 items (Needs special equipment, Needs special clothes, Costs too much).

Time has 3 items involves (I do not have time, the class is too long, long Time to find good instructor or facility). Fears dimension has 3 items (It will hurt my muscles and joints, it will worsen my health problems, Interferes with my faith).

The accessible population in this study is University of Malaya undergraduate students from the Faculty of Education in Kuala Lumpur. The sampling technique for the present study was cluster random sampling. Subjects were selected randomly from 372 students University of Malaya in education faculty in the undergraduate level. With the assistance of the lecturers of the University of Malaya 210 students were randomly chosen to get the survey questionnaire. Of these 210 students, 13 students were absent, and 197 students responded to the survey, and accomplished the survey and their responses were employed in this analysis.

This study utilizes a quantitative methodology research to investigate the perceived benefits and barriers to yoga exercise among university students using the health belief model. This is a survey study of data collection. Quantitative data will be collected to obtain statistical results from the sample using questionnaires. Data collection procedure was carried out by hand among 210 University of Malaya students in the Faculty of Education. Questionnaire should be contributed among undergraduate students for the sake of understanding perceived benefits and barriers. The data then analyzed statistically using SPSS (Statistical Packages for the Social Sciences) 23 for Windows. In the inferential statistics analysis, One-way MANOVA (multivariate of variance) was used to determine the differences. Multivariate normality and homogeneity of variance-covariance matrices assumption were also tested before applying any data analysis.

Results

Some 197 subjects completed the questionnaire and the age of participants ranged from 20 to 28 years of age ($M= 22.12$ years, $SD= 1.500$). The majority of participants were women (84.8%).

Homogeneity of Variance-Covariance Matrices for perceived benefits to yoga exercise among university students differ by gender: Homogeneity of Variance

assumes that all groups have the same or similar variance. Box M of Equality of Variance was used to assess equality of variances and result is: $F(10, 11699.183) = 1.22$, $sig = .27$ ($p > .05$) Therefore, it can be concluded that the variances were approximately equal and there was homogeneity of variance of the dependent variables among the groups.

Mean score and standard deviations were used to investigate whether students' perceived benefits differ by gender (in four different dimensions, 18 items).

Table 1 shows that students had little difference in mean score and dimensions such as psychological, Disease prevention and social for both males and females. However, the difference in Physical variable observed higher than other dimensions for both males and females.

One-Way MANOVA test was performed on the four dependent variables (Psychology, Physical,

Disease Prevention and Social) by gender. The results showed no significant difference effect of gender on the combined dependent variables of Perceived Benefits: $F(1,195) = .314$, Wilks Lambda = .99, $sig = .87$ ($p > .05$).

Table 2 provides summary results of the one-way MANOVA analysis based on gender. Males and females are similar in reporting perceived benefits in the Psychological dimension $F(1,195) = .55$, $sig = .46$ ($p > .05$), Physical dimension $F(1,195) = .05$, $sig = .835$ ($p > .05$), Disease Prevention dimension $F(1,195) = 1.11$, $sig = .29$ ($p > .05$), Social dimension $F(1,195) = .09$, $sig = .92$ ($p > .05$).

According to Pallant (2001), Partial Eta Squared shows the proportion of variance in the dependent variable which can be explained by independent variable. According Cohen (1988) the level of effect will be as followed: <0.3 Low, $0.3-0.8$ Moderate, >0.8 High.

Table 1

The means and standard deviations of scores for perceived benefits to yoga exercise dimensions (Mean \pm SD).

| Variables | Gender | n | Mean | SD |
|--------------------|--------|-----|------|-----|
| Psychological | Male | 30 | 3.98 | .53 |
| | Female | 167 | 3.89 | .63 |
| Physical | Male | 30 | 4.21 | .62 |
| | Female | 167 | 4.18 | .68 |
| Disease prevention | Male | 30 | 3.65 | .70 |
| | Female | 167 | 3.51 | .67 |
| Social | Male | 30 | 3.68 | .72 |
| | Female | 167 | 3.66 | .81 |

Table 2. Results of a one-way MANOVA on difference in the mean scores for perceived benefits dimensions to yoga exercise by gender.

| Dependent Variables | df | Mean Square | F | p | η^2 |
|---------------------|----|-------------|------|-----|----------|
| Psychological | 1 | .21 | .55 | .46 | .03 |
| Physical | 1 | .02 | .05 | .83 | .00 |
| Disease Prevention | 1 | .50 | 1.11 | .29 | .06 |
| Social | 1 | .06 | .09 | .92 | .00 |

The value of Partial Eta Squared in this case involves (Psychological = .03, Physical = .00, Disease Prevention = .06 and Social = .00) which presents all factors have low effect size.

Based on the result of this analysis, the researcher accepts the null hypothesis and reported that overall gender is not a factor for interference perceived benefits towards yoga exercise among university students.

Homogeneity of Variance-Covariance Matrices for perceived barriers to yoga exercise among university students differ by gender:

Homogeneity of variance assumes that all groups have the same or similar variance. Box M of Equality of Variance was used to assess equality of variances and result is: $F(10, 11699.183) = .30$, sig. = .98 ($p > .05$). Therefore, it can be concluded that the variances were approximately

equal and there was homogeneity of variance of the dependent variables among the groups.

Mean score and standard deviations were used to investigate whether students' perceived barriers differ by gender (in four different dimensions, 13 items).

Table 3 shows that students had little difference in mean score and dimensions such as Negative Preconception, Cost and Fear for both males and females. However, the difference in Time variable observed higher than other dimensions for both males and females.

One-Way MANOVA test was performed on the four dependent variables (Negative Preconception, Cost, Time and Fears) by gender. The results showed no significant difference effect of gender on the combined dependent variables of Perceived barriers: $F(1,195) = 1.166$, Wilks Lambda = 0.98, sig. = .33 ($p > .05$).

Table 3

The means and standard deviations of scores for perceived barriers to yoga exercise dimensions.

| Dependent Variables | Gender | n | Mean | SD |
|------------------------|--------|-----|------|-----|
| Negative Preconception | Male | 30 | 1.73 | .53 |
| | Female | 167 | 1.69 | .48 |
| Cost | Male | 30 | 1.81 | .74 |
| | Female | 167 | 2.02 | .67 |
| Time | Male | 30 | 2.17 | .66 |
| | Female | 167 | 2.26 | .56 |
| Fears | Male | 30 | 1.80 | .65 |
| | Female | 167 | 1.69 | .62 |

Table 4

Results of a one-way MANOVA on difference in the mean scores for perceived Barriers dimensions to yoga exercise by gender.

| Dependent Variables | df | Mean Square | F | p | η^2 |
|------------------------|----|-------------|------|-----|----------|
| Negative Preconception | 1 | .05 | .20 | .66 | .01 |
| Cost | 1 | 1.09 | 2.36 | .13 | .01 |
| Time | 1 | .24 | .71 | .40 | .04 |
| Fears | 1 | .28 | .71 | .40 | .04 |

Table 4 provides summary results of the one-way MANOVA analysis based on gender. Males and females are similar in reporting perceived barriers in the Negative Preconception dimension $F(1,195) = .20$, $sig = .66$ ($p > .05$), Cost dimension $F(1,195) = 2.36$, $sig = .13$ ($p > .05$), Time Prevention dimension $F(1,195) = .71$, $sig = .40 > .05$ and Fears dimension $F(1,195) = .71$, $sig = .40$ ($p > .05$).

The value of Partial Eta Squared in this case involves (Negative Preconception = .01, Cost = .012, Time = .04 and Fears = .04) which presents all factors have low effect size.

Based on the result of this analysis, the researcher accepts the null hypothesis and reported that overall gender is a factor which cannot affect perceived barriers to yoga exercise among university students.

Discussion

Of 197 participants 84.8% was female and 15.2% was male. The results presented no significant difference related to gender in perceived benefits of yoga exercise among university students. Results showed that males and females have almost same opinion in terms of Psychological, Physical, Negative Preconception, and Social benefits. However, the mean score of female students was slightly lower than male students in all factors. This study found that males have positive views toward yoga which is inconsistent with past studies (Van Niekerk, 2010). Both males and females have scored higher in physical benefits towards yoga exercise which involves items such as Improves posture, Improves Balance, Improves Coordination, Improves Flexibility. This study showed that yoga was widely supposed to be helpful for overall health regardless of actual experience.

According to Ross (2012), there is no gender difference in any of the yoga practice variables, including social aspects of yoga. However, female yoga practitioners reported higher levels of subjective well-being and social support and lower consumption of fruits and vegetables and caffeine than male practitioners. This finding is similar to the finding of this research which has lower level of perceived barriers for male students. Moreover, Yan et al. (2015) found no gender differences among college students' reasons for exercise.

In terms of perceived barriers, analysis showed that both genders are similar in reported Negative Preconception, Cost, Time, and Fears. Both males and females have scored higher in Time Barriers towards yoga exercise which involves items such as I do not have time, The class is too long, long Time to find good instructor or facility. Moreover, Male students have scored higher in Negative Preconception, Cost and Fears dimensions more than female students. One of the reasons for the gender difference in willingness to participate in yoga maybe related to the fact that males do not perceive an aerobic challenge with yoga, another reason being more female dominated.

Also another research done in Pakistan to recognize sex-based difference in the perception of exercise found that women perceived more barriers to exercise than its benefits as a result of which they are more likely to be physically inactive and less likely to get involved in physical activity and maintain healthy lifestyle (Naseer et al., 2013).

This finding is consistent with many previous researches which found the lack of time as a dominant factor among students of both genders (e.g. Gyurcsik et al., 2004). In fact, it shows that males and females have similar perceived barriers towards yoga exercise.

Universities should focus on overcoming the top barriers which is time and cost. Hence, yoga exercise class can be set in campus by university in order to overcome time barriers which have been reported the top barrier among subjects. The class fees must be affordable for students to solve cost hindrance in joining yoga classes. Building an attractive environment with suitable yoga mats and other equipment can encourage students to take part in yoga exercise classes. Furthermore, university administration can provide opportunity for students to uses the yoga class facilities during their free time to practice on their own.

Students should manage their time to join yoga exercise classes in order to be physically active and learn how to handle their stress and anxiety. They can consider that yoga exercise would help them to be more focused while they are studying. In fact yoga exercise could support them to save a lot of time.

This study employed a quantitative methodology research to investigate university students' perceived

benefits of and barriers to yoga exercise. Qualitative method can be conducted for future research to obtain in-depth understanding of university students' perception. In fact, comprehensive information can be gathered through interview and observation. Research sample was selected from the Faculty of Education at the University of Malaya. Future research can be conducted on a larger sample size among other faculties and universities. The sample of current study involved only undergraduate students; future study can be done on postgraduate students as well. In this research the effect of gender and race on perceived benefits and barriers towards yoga exercise were surveyed; future research can be guided to identify the effect of Personality and Socioeconomics on students' perception.

Conclusion

This study tried to determine how students' gender could influence their perceptions about yoga exercise. The results of this study show that males and female are similar in their perceived benefits and barriers to yoga exercise. Hence, in creating yoga exercise intervention for university students, gender is not a vital component to consider.

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