

RESEARCH ARTICLE

A Pilot Study Examining the Effects of Kouk Sun Do on University Students with Anxiety Symptoms

Jong-Ho Kim^{1*†}, Heewon Yang¹ & Stephen Schroepel II²

¹Department of Health Education and Recreation, Southern Illinois University Carbondale, Carbondale, IL 62901, USA

²Department of Educational Psychology, Southern Illinois University Carbondale, Carbondale, IL 62901, USA

Abstract

The effects of Kouk Sun Do (KSD), a mind–body exercise on mental health in university students, were investigated in this pilot study. University students ($N=30$) with self-reported anxiety symptoms were randomly assigned to either the treatment group or the waiting list control group. Eighteen participants ($N=18$; seven in the treatment group and 11 in the waiting list control group) completed a pre-test and a post-test, and 12 participants dropped out before or during the intervention. Ten 70-min KSD exercise sessions were conducted three times per week over a 4-week period. Trait anxiety, depressive symptoms and general self-efficacy in coping with stress were measured with the pre-test and the post-test. Qualitative data were collected using open-ended questions regarding benefits of KSD at the last session. A two (group) by two (time) repeated-measure analysis of variance was used to analyse the data. Trait anxiety and depressive symptoms decreased whereas general self-efficacy increased over a 4-week period. The treatment group had significantly reduced trait anxiety and depressive symptoms compared with the control group across time. Qualitative data provided support that the self-induced relaxation effects of KSD may lead to reduced anxiety. Copyright © 2012 John Wiley & Sons, Ltd.

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Keywords

mindfulness; meditation; yoga; mind–body exercise; mental health

*Correspondence

Jong-Ho Kim, Department of Health Education and Recreation, Southern Illinois University, Carbondale, IL 62901, USA.

†Email: jonghokim@siu.edu

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Anxiety is the most prevalent class of mental disorders (Kessler, Berglund, Demler, Jin, & Walters, 2005) and is highly associated with other psychiatric conditions such as mood disorders (Hettema, Neale, & Kendler, 2001), substance abuse, avoidant behaviour (Roy-Byrne et al., 2009) and depression (Reiter, Otto, & Pollack, 1991). People with anxiety disorders feel persistently uneasy and anxious about the future because of their overestimation of risks and unrealistic belief that catastrophic events will occur to them. Individuals with an anxiety disorder may also suffer from physical symptoms such as muscle tension, stiffness, shortness of breath, flushing and chills, palpitations, chest pains and dizziness (Roy-Byrne et al., 2009). These symptoms may interfere with physical and emotional role functioning, task efficiency, performance at work or school and social life, which deteriorates the overall quality of life (Mendlowicz & Stein, 2000).

Mindfulness exercises, characterized as an awareness that intentionally and non-judgmentally focuses attention to the present moment and sustains this attention over time, have been a recently growing regimen for

psychological treatments in western culture (Miller, Fletcher, & Kabat-Zinn, 1995; Rowa & Antony, 2005). Research studies report that a mindfulness-based stress reduction programme consisting of meditation and mindful stretching has significant treatment effects on people with a diverse set of medical and psychiatric conditions by reducing stress, anxiety and depression (e.g. Chang et al., 2004; Goldin & Gross, 2010; Gross et al., 2004; Lazar, 2005; Toneatto & Nguyen, 2007). *Sudarsham Kriya Yoga*, consisting of cycling yogic breathing, yoga postures, meditation, group processes and basic yogic knowledge, has contributed to significant reductions in anxiety, depression and post-traumatic stress disorder (Brown & Gerbarg, 2005). Yoga techniques have been historically conducive to fostering well-being, mood, attention, mental focus and stress tolerance. *Qigong*, an exercise technique where movements are synchronized with specific breathing patterns with fully inhaling and exhaling respirations, as well as acupressure, has lessened perceived stress and anxiety (Chow & Tsang, 2007; Griffith et al., 2008; Lee, Kang, Lim, & Lee, 2004; Posadzki, Parekh, & Glass, 2010). Overall, mindfulness

exercises may contribute to enhancing relaxation and acceptance, which can buffer stress responses (Bear, 2010; Lazar, 2005).

Kouk Sun Do (KSD), also known as Sun-Do, is a traditional Korean mind–body practice, which has been practised over thousands of years but has hardly been evaluated scientifically for efficacy. KSD is one of a group of therapies considered to be a mindfulness exercise, which combines characteristics of yoga, meditation, Tai-Chi, Zen and martial arts (Kouk Sun Do, 2008). KSD consists of three parts: warm-up exercises at the beginning, the meditation exercises with a sequence of postures in the middle and cool-down exercises at the end. A series of stretching exercises are performed along with some acupressure for the warm-up and cool-down sections. The meditation exercise involves lower-abdomen breathing through which the abdomen gently puffs out with inhalation and moves back in with exhalation following meditative chanting, which is repeated every 5 s (Catabia, 2007). Also, the in-and-out breathing exercise employs the nostrils and focuses on the lower abdomen (Kouk Sun Do). KSD is primarily based on lower-abdomen breathing techniques through which a lower part of the abdomen, called lower *danjeon*, the body's energy centre, located about 2 in. below the navel, is utilized to circulate universal life energy, *ki* or *qi*, throughout the body (Catabia). Breathing and the state of mind reciprocally respond. Emotional states affect respiratory rate and depth (Brown & Gerbarg, 2009). On the contrary, slow breathing is correlated with reduced psychological and physiological arousal through parasympathetic activity and emotional calmness with alertness (Brown & Gerbarg, 2005, 2009; Cappo & Holmes, 1984). Experimental research has also demonstrated that KSD implemented for community-dwelling elderly has contributed to improvements in mood and depression as well as in physical fitness of balance, flexibility and strength at a 16-week post-intervention in the treatment group (Lim & Hong, 2010). In brief, KSD is based on the deep-breathing exercises and may be conducive in enhancing a state of calmness with vigour and balance by training the mind and the body.

University students are especially vulnerable to elevations in anxiety and depression compared with the years preceding entry into university and their non-student peers. Many university students may worry about their future, as they transition into independence (Bewick, Koutsopoulou, Miles, Slaa, & Barkham, 2010). They may also experience rejection or disillusionment during this period of exploration and change (Arnett, 2000). Increasing prevalence of mental illness associated with stress in university students is an area of alarming concern (Bayram & Bilgel, 2008; Stallman, 2010). However, many students with mental health problems do not tend to seek help for their conditions, despite higher levels of anxiety and depressive symptoms requiring treatment (Armando et al., 2010; Eisenberg, Golberstein, & Gollust, 2007).

Although there have been anecdotal reports of the psychotherapeutic effects of KSD practices, little empirical research has been conducted on KSD, which might have a treatment effect on university students with anxiety symptoms. Therefore, the purpose of this pilot study was to examine the effects of KSD on mental health in university students with anxiety symptoms.

Method

Participants

A total of 30 participants with medium to high levels of self-reported anxiety symptoms at a large southwestern university were recruited for this study. The researcher put flyers on bulletin boards on campus and also distributed the flyers to potential participants. The only requirement for volunteering in this study was that the potential participants should be presently experiencing some anxiety symptoms. The flyers also included information such as the purpose of the study, session schedules and titles and compensation. Since the participants were chosen on the basis of their interests in KSD research described in the flyer, there was no particular screening procedure and no cut-off point for anxiety levels for the selection of participants for this study.

The participants' mean age was 24.83 years ranging from 18 to 46 years ($SD = 9.41$), and the ethnic representation in the study included nine Caucasians, six Asians, two African Americans and one other. The participants had moderate levels of trait anxiety ($M = 44.61$, $SD = 9.95$) at baseline. There were no significant differences in age, gender and ethnicity as well as baseline measures on trait anxiety, depressive symptoms and self-efficacy in coping with stress between completers ($n = 18$) and non-completers ($n = 12$). All treatment group members attended five to eight out of the total 10 KSD sessions including at least one of the final week's sessions and completed the post-test on the day after the last session.

Procedure

The plan of this research project was approved by the university's Institutional Review Board prior to the start of the study. Prior to taking the pre-test, the participants completed an informed consent form. The participants were randomly assigned to either a treatment group or a control group. Because of the limited number of staff and facility, the researcher provided the sessions to the treatment group first. Thus, the sessions were provided to the control group after the treatment group completed their sessions.

During the session, the primary researcher verbally explained the concepts of mind–body exercise and the mindfulness of the lower-abdomen breathing that would bring the awareness of the present and gratitude. The sessions used a translated English version of a KSD compact disc, which contained instructions to guide the participants through the KSD exercises with

background nature sounds and meditation chanting. The principal investigator and an assistant led each session by demonstrating KSD meditation exercise postures and teaching the exercises and basic concepts of KSD. To allow time for participants to become familiarized with the first level of KSD exercise, a total of 10 KSD sessions were implemented over a 4-week period in addition to an introductory session held in the first week. On the basis of the commonly held practice standard, the KSD sessions took place three times per week with each session lasting approximately 70 min.

Upon the completion of the sessions, the post-test was given to both groups. Among the treatment group, seven participants completed the pre-test and the post-test, whereas 11 participants in the control group completed the pre-test and the post-test. Twelve participants ($n=12$; seven in the treatment group and five in the waiting list control group) who participated in the last session of KSD provided their opinions through open-ended questions for qualitative data regarding the effects of KSD. A \$30 compensation was provided to participants who completed the pre-test and the post-test (\$10 for the pre-test and \$20 for the post-test). In addition, a \$10 incentive was awarded to participants who attended more than eight out of the total 10 sessions, and a KSD compact disc was provided to participants who completed at least six out of the total 10 sessions.

Instrumentation

Qualitative data regarding how the participants have experienced the entire KSD exercise over a 4-week period were collected upon the completion of the last session through open-ended questions to which the participants wrote answers. They are as follows: (1) What did you like about the KSD exercise the most?; (2) What did you like the least about the KSD exercise?; (3) What do you think about the benefits of the KSD exercise?; and (4) What is your overall impression about the KSD exercise? There were no follow-up questions.

To measure quantitative aspects of the effects of the KSD exercise programme, three different instruments were used. The questionnaires specifically measure the levels of trait anxiety, depressive symptoms and self-efficacy in coping with stress of the participants. The administration of the questionnaires were conducted approximately 1 week prior to the first session and after the last session. Demographic information was also collected at the time of the administration. The instruments are described in more detail below.

Trait anxiety

Trait anxiety was measured using the State Trait Anxiety Inventory (STAI), which assesses general feelings of anxiety (e.g. 'I worry too much over something that really doesn't matter') (Spielberger, Gorsuch, & Lushene, 1970). The STAI consists of 20 items ranked on a four-point Likert scale ranging from *almost never* (1) to *almost always* (4). Higher scores indicate higher trait anxiety.

The measure has been shown to have high internal consistency, estimated by a Cronbach's alpha greater than .90 in a variety of samples (Novy, Nelson, Goodwin, & Rowzee, 1993) and high test-retest reliability ($r=.86$) (Spielberger, Gorsuch, & Lushene, 1970). In the present study, Cronbach's alpha was .91, demonstrating high internal consistency.

Depressive symptoms

The Beck Depression Inventory (BDI-II), which measures the severity of depressive symptoms (e.g. pessimism, punishment feelings and irritability), was used to measure the level of depressive symptoms of the participants. The instrument consists of 21 items (Beck, Steer, Ball, & Ranieri, 1996), and each item is rated on a four-point Likert scale ranging from 0, indicating *not at all*, to 3, indicating *severe*. Higher scores indicate higher depressive symptoms. The measure showed high internal consistency and high test-retest reliability ($r=.93$) (Beck, Steer, & Brown, 1996). The scale's internal consistency in the present study was satisfactory, with a Cronbach's alpha of .85.

Self-efficacy

General self-efficacy, which refers to a broad and stable sense of personal belief in one's capability of dealing effectively with a variety of stress and adaptation after stressful life events (Luszczynska, Scholz, & Schwarzer, 2005), was assessed by using the general self-efficacy (GSE) scale (e.g. 'I can always manage to solve difficult problems if I try hard enough'). The scale consists of 10 items on a four-point Likert scale anchored by *not at all true* (1) and *exactly true* (4). Higher scores indicate higher general self-efficacy. Previous research showed adequate internal consistencies ($\alpha=.71-.91$) in numerous studies and acceptable test-retest reliabilities over a 1-year period ($r=.55-.75$) (Scholz, Dona, Sud, & Schwarzer, 2002). The scale yielded favourable internal consistency with a Cronbach's alpha of .83 in the present study.

Data analysis

From the participants' written answers in open-ended questions, the qualitative data were analysed with inductively emerging themes and categorization using grounded theory, which utilizes open coding, axial coding and selective coding (Corbin & Strauss, 2008). Open coding involves breaking the data into small, meaningful units; axial coding is comprised of comparing and contrasting the initial codes in the open coding to produce grouped categories; and selective coding sorts and integrates categories (Glaser & Strauss, 1967).

These methods were conducted by two separate researchers to avoid any possible researcher bias, also referred to as triangulation. More specifically, two coders individually analysed the qualitative data on responses to the open-ended questions by reading each response until

becoming familiar with the content following the grounded theory approach. Notes were taken to figure out key points of responses in each of the four questions among 12 participants (open coding). The concepts were developed through the process of the collection of codes of similar content that allowed the data to be grouped by comparing similarities and differences of the initial codes in each response to the four open-ended questions (axial coding). The themes for Questions 1, 3 and 4 were drawn from each response through the axial coding process and were comprehensively integrated because of the fact that those questions addressed the participants' overall feeling about the KSD session that they participated in. Responses to Question 2 were discarded because of the myriad of responses that did not allow for any concise data categorization (Webster-Stratton & Spitzer, 1996). Since the categories identified in the open and axial coding processes were mere descriptions of the qualitative responses, those various types of categories needed to be integrated to develop a theoretical framework (selective coding). That is, a central category (i.e. self-induced relaxation in this study), around which all other categories are based, was identified, and a theoretical framework (i.e. a storyline) was generated as a restatement that relates to the central category. These three steps of the coding process were separately conducted by two researchers, and the two researchers reached a consensus on the central category.

A two (group) by two (time) repeated-measure analysis of variance was used to examine both the interaction and the main effects of the KSD intervention. Effect size f using power analysis was calculated for the interaction terms. All alpha levels were set at .05, and all data were analysed using SPSS 17.

Results

Qualitative data

From qualitative data analysis using open coding from grounded theory (Corbin & Strauss, 2008; Webster-Stratton & Spitzer, 1996), 10 interrelated themes were drawn from the responses from 12 participants who completed the last KSD session. The identified themes are as follows: relaxation, mind and body rejuvenation, mind clearing, calmness, focus, alleviation of stress and anxiety, a learned breathing technique, use of the relaxation technique on one's own, breathing meditation and a new alternative to yoga. Through axial coding, two core themes, relaxation and usefulness of the relaxation technique in daily life, were drawn.

Relaxation

Out of 12 participants, 11 explicitly mentioned that they experienced relaxation effects as a result of having participated in KSD. For instance, one participant stated, 'I liked all the stretching involved especially after the breathing segment. It really helped me relax and stretch my body and mind. I always felt relaxed and

energized after the session.' It is probable that the participants' mind-body relaxation experiences have contributed to the reduction of their anxiety level.

Usefulness of the relaxation technique in daily life

After participating in KSD, seven out of 12 participants clearly reported that the breathing/stretching techniques from KSD were applicable to daily life. According to one participant, 'I feel like I'm able to focus my energy better during the day using breathing techniques learned in session.' The relaxation technique seems to have been useful to the participants in daily life when dealing with stress.

Overall, the theoretical integration drawn from the qualitative data was boiled down to self-induced relaxation (Margolis, 1987). This refers to individually controlled, individually induced relaxation that does not require external apparatuses or trained clinicians and aims to achieve calmness and psychological confidence, thus conducive to handling potentially stressful and anxiety-provoking situations.

Quantitative data

According to the ratio of the skewness to its standard error of less than 2, all the measures at baseline followed the distribution of normality. Also, there were no mean differences on the study variables between the two groups at baseline. Table I illustrates the mean differences in trait anxiety, depressive symptoms and general self-efficacy in relation to the response scales between treatment and control groups at pre-test and post-test along with the interaction between time and group.

Trait anxiety decreased over a 4-week period [$F(1, 16) = 11.24, p < .01, \eta_p^2 = .41$]. There was a significant interaction between time and group, which indicates that trait anxiety levels differed significantly depending on group membership [$F(1, 16) = 7.86, p < .05, \eta_p^2 = .33, f = .70$]. As shown in Figure 1, the treatment group had a significant reduction in trait anxiety compared with the control group.

There was a significant difference in depressive symptoms on the BDI-II within-subjects factors of the two time points, [$F(1, 16) = 11.45, p < .01, \eta_p^2 = .42$]. As illustrated in Figure 2, the interaction between time and group was significant, [$F(1, 16) = 12.45, p < .01, \eta_p^2 = .44, f = .88$], which indicates that depressive symptoms decreased significantly in the treatment group compared with those in the control group over a 4-week period.

There were significant main effects of time [$F(1, 16) = 6.93, p < .05, \eta_p^2 = .30$] and group [$F(1, 16) = 8.58, p = .01$] in general self-efficacy. The interaction between time and group was not significant [$F(1, 16) = 3.92, p = .065, \eta_p^2 = .20, f = .50$]. These results were illustrated in Figure 3.

Table I. Comparison of changes in measures on major variables in relation to the response scales used from the pre-test to the post-test for the participants in the treatment and control groups

Variable	Treatment				Control				Interaction		
	Pre-test		Post-test		Pre-test		Post-test		Group (2) by time (2)		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	η_p^2	<i>f</i>	<i>p</i>
STAI	2.21	0.57	1.80	0.54	2.25	0.47	2.21	0.40	0.33	0.70	0.013
BDI-II	0.79	0.51	0.36	0.34	0.74	0.28	0.75	0.42	0.44	0.88	0.003
GSE	2.11	0.41	2.50	0.40	1.83	0.34	1.88	0.33	0.20	0.50	0.065

Note: The interaction between time (2) and group (2) on each measure has been displayed with effect size and significance value. STAI, Trait Form of the State Trait Anxiety Inventory; BDI-II, Beck Depression Inventory; GSE, General Self-Efficacy Scale; *M*, mean; *SD*, standard deviation; η_p^2 , partial eta squared; *f*, effect size; *p*, significance value.

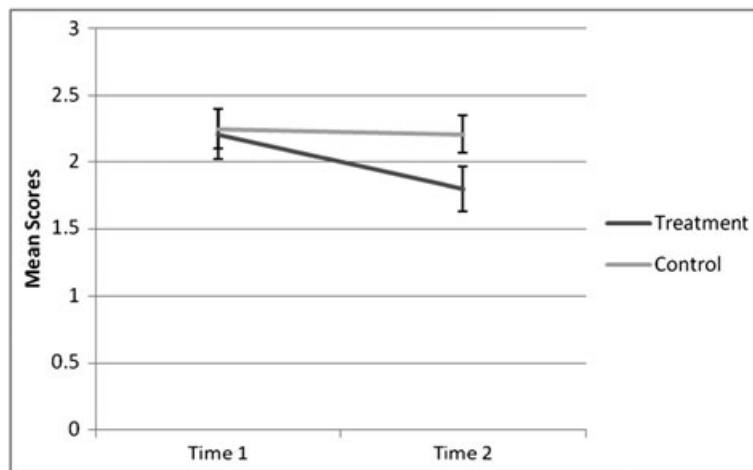


Figure 1 Trait anxiety levels of treatment and control groups at Time 1 and Time 2

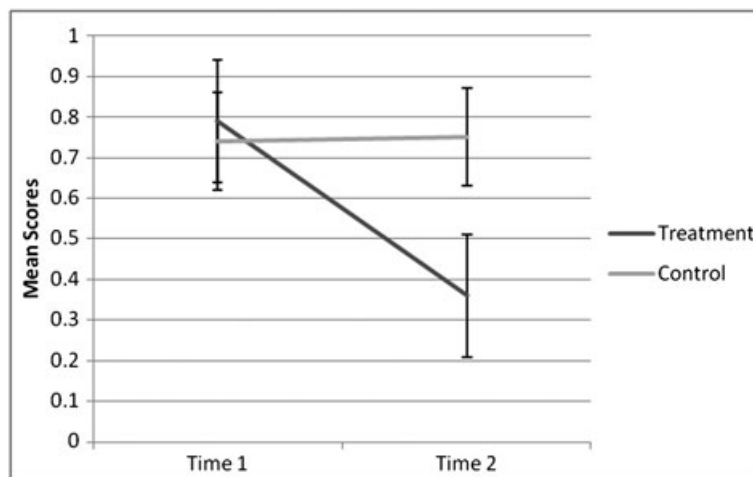


Figure 2 Depression levels of treatment and control groups at Time 1 and Time 2

Overall, a significant interaction between time and group as well as a significant main effect of time was found in trait anxiety and depressive

symptoms. Also, significant main effects of time and group were found in general self-efficacy in coping with stress.

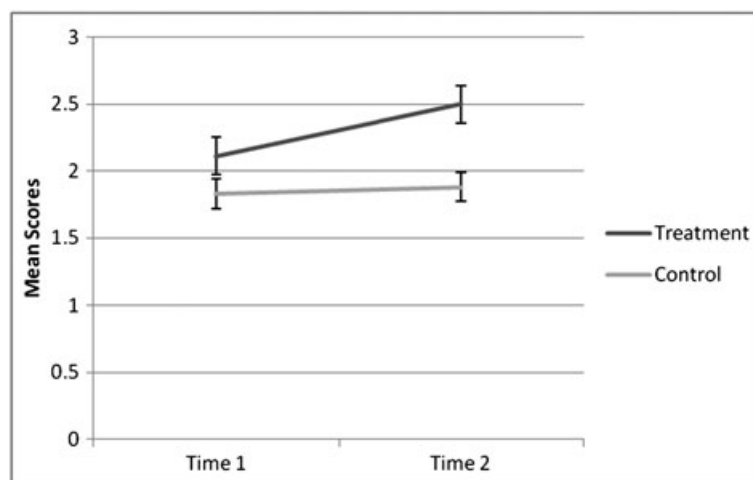


Figure 3 General self-efficacy levels of treatment and control groups at Time 1 and Time 2

Discussion

The purpose of this study was to investigate the effects of the KSD mind–body exercise on university students with self-reported anxiety symptoms. Self-induced relaxation effects were drawn from qualitative data using open-ended questionnaires. From the main effects of time and the interaction between time and group, it was found that KSD exercise, performed three times each week over a 4-week period, may be efficacious to reduce trait anxiety and depressive symptoms among university students. In addition, the KSD intervention resulted in a trend that may indicate enhanced self-efficacy in coping with stress. Although the correlation between trait anxiety on STAI and depressive symptoms on BDI-II at pre-test and post-test was very high (Pearson correlation $r = .81$ to $.87$), it is consistent with the previous finding showing that the measure of trait anxiety on STAI is highly correlated with depressive symptoms on BDI (Beck, Brown, Epstein, & Steer, 1988). Also, the high correlation may infer that anxiety is often co-morbid with depressive symptoms (Beck, Brown, Epstein, & Steer, 1988; Brown & Barlow, 1992; Reiter, Otto, Pollack, & Rosenbaum, 1991). Since these measures were used as outcome variables in the study, the result of high correlation between these variables would suggest that this study confirms the result of the previous research, demonstrating the high co-morbidity between anxiety and depression as well as the similarity in the measures between STAI and BDI.

One possible mechanism by which KSD meditation serves as a catalyst to reduce anxiety is that participants may feel a heightened sense of control against perceived stressors and tension in one's mind and body through relaxation (Benson et al., 2000; Tigunait, 2008). Core themes, extracted from the qualitative data analysis using a grounded theory approach, were as follows: (a) relaxation and (b) usefulness of the relaxation technique in daily life. The findings led to integrating

the recurring themes into a term, self-induced relaxation (Margolis, 1987). The self-induced relaxation may have played a mediating role between KSD and a reduction in anxiety. Mindfulness meditation, similar to those in KSD, activates frontal brain areas, which induces states of focused attention, associated with relaxation (Davanger, Ellingsen, Holen, & Hugdahl, 2010; Leite et al., 2010; Stefano, Fricchione, & Esch, 2006; Wallace & Shapiro, 2006). *Qigong*, another form of mindful exercise similar to KSD, mainly composed of five elements (visualization, meditation, relaxation, deep breathing and target *ki* circulation), contributes to a reduction in anxiety and an improvement in positive mood through relaxation (Chow & Tsang, 2007; Lee et al., 2001). Previous research has shown that an applied relaxation intervention is as effective as cognitive therapy in the treatment of cognitive and somatic anxiety and worry as well as generalized anxiety and fatigue (Arntz, 2003; Ost & Breitholtz, 2000; Pawlow, O'Neil, & Malcolm, 2003). In addition, slow breathing with prolonged respiratory expiration leads to a reduction in psychological and physiological arousal in an anxiety-provoking situation (Cappo & Holmes, 1984). Therefore, self-induced relaxation may have resulted in enhancing a personal sense of control over anxiety in the present study (Benson et al., 2000; Posadzki et al., 2010). Further quantitative research through a well-calibrated measure needs to be conducted to confirm the possible mediator, self-induced relaxation contributing to anxiety reduction.

A limitation of the present study is the small sample size that may have resulted in a lack of statistical power to detect a significant difference in anxiety between groups. However, since there were large effect sizes for the interaction term, these results seem to be promising for future study, which would allow investigation of the group differences using a larger sample size. Post-test power analyses showed that the minimum required

sample sizes to obtain a power of .8 are $N=40$ for trait anxiety on STAI. All the measures on STAI, BDI-II and GSE for the repeated-measures analysis of variance within-between interaction in the present study demonstrated strong power ($1 - \beta$ error probabilities = .995 to 1, critical $F=4.49$) according to *post hoc* computed achieved power analysis. In addition, this study showed test-retest internal consistencies below .7, ranging from .63 to .65 for GSE and BDI-II, which is often considered as the minimally acceptable reliability for these types of measures. Also, since the measurement was conducted to examine the immediate effect right after the intervention, a follow-up study appears to be necessary to investigate the long-term effects of KSD.

This study suffered from a high attrition rate. Out of 30 participants, 12 withdrew from the programme. More specifically, nine subjects dropped out at baseline, and three subjects withdrew during the intervention. Among the 12 participants, six participants reported that they had time conflicts, and one reported she disliked the session. The reason for withdrawing from the study is unknown for the remaining five participants. It is also probable that the duration of each session (about 70 min) and the frequency of the sessions per week (three times per week) may have hindered the participants from dedication to the programme. Although there were no significant differences between completers and non-completers in terms of demographic information, a future study may need to further examine participants' personal experiences or characteristics that may impact participation in KSD.

Participants recruited in the study were limited to university students with self-reported anxiety symptoms. Thus, the results may not generalize to other populations. Replication of this study must be necessary to assess the effects of KSD in patients with anxiety disorders in clinical settings as well as in more diverse populations in other settings such as people with chronic disease and the elderly with physical limitations.

Mind and body dualism is the traditionally underlying western philosophy that has influenced principles of science including the field of medicine. As a consequence, the notion that mind and body reciprocally interact in the context of holistic treatment may have

been regarded as myth or unscientific (Mehta, 2011). However, mind and body exercises recently have been implemented in a variety of medical and psychiatric settings globally as alternative therapies, taking psychological, social and environmental factors dealing with illness and health into account to optimize treatment effects (Pieri, 2008; Toneatto & Nguyen, 2007). This holistic approach may serve as a complementary regimen worldwide. The notion is also in alignment with the World Health Organization (1946), which defined that health is not merely absence of disease, but a state of complete physical, mental and social well-being. Also, many studies support the influence of mind-body unity on physical and mental health in which psychological stress reciprocally interacts with physical health (e.g. Gadalla, 2009; Kosuri & Sridhar, 2009; Lin & Korff, 2008; Marucha, Kiecolt-Glaser, & Favagehi, 1998).

Therefore, despite these limitations, the findings of the present study would shed light on the efficaciousness of KSD in aiding young adults with anxiety symptoms.

Conclusion

This pilot study revealed that the KSD intervention, held three times per week over a 4-week period, may have contributed to enhancing relaxation and reducing trait anxiety and depressive symptoms in university students with anxiety symptoms. Also, self-efficacy in coping with stress showed significant main effects of time and group. Self-induced relaxation found in qualitative data may have played a mediating role between KSD exercise and alleviations of anxiety. Overall, the results of this study illustrated the potential of KSD as an alternative approach to enhance mental health of university students. Although there is little research on the issue, more research conducted in this area with randomized controlled trials would be desirable and useful. This research may contribute to the literature by demonstrating that KSD, a new way of mind and body exercise, may reduce the level of anxiety symptoms through self-induced relaxation. In addition, this research may be meaningful in suggesting an alternative approach in which human potential can develop as a self-healing agent by using mind, body and breath.

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