

The role of taekwondo training on the subjective wellbeing of adolescents in Addis Ababa, Ethiopia

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ORIGINAL PAPER

Abstract

The purpose of this study was to investigate the role of taekwondo (TKD) training on the subjective well-being (SWB) of adolescents (12-18 years old) in Addis Ababa city. A cross-sectional survey method was used; self-administered questionnaire was the main data collection tool. A total number of 162 adolescents (108 TKD adolescents from four randomly selected TKD clubs and 54 non-TKD adolescents from a randomly selected public high school), participated in the study. The study sought to determine TKD adolescents' level of SWB as measured by the Personal Wellbeing Index - School Children (PWI-SC). Besides, adolescents in different groups (TKD adolescents in three groups according to rank/belt level and TKD adolescents and non-TKD adolescents) were compared based on their score of PWI-SC. Results of the study showed that: (1) TKD adolescents had high level (mean points) of SWB as measured by the PWI-SC, i.e., 81.95 (95%CI: 79.70 to 84.20); (2) there was no significant difference in SWB among the three groups of TKD adolescents (lower, middle and high level belts) ($F_{(2, 81)} = 1.58, p > .05$); and (3) when compared with non-TKD adolescents, TKD adolescents were found to have a significantly higher mean points of SWB, ($t = 4.25_{(77.97)}, p < 0.001; d = 0.79$). Overall, the results of this study indicated the training of TKD can have a positive contribution to adolescents' well-being.

Keywords: Adolescent; combat sports; martial arts; taekwondo; well-being; subjective well-being.

El papel del entrenamiento en taekwondo en el bienestar subjetivo de adolescentes en Adís Abeba, Etiopía

Resumen

El objetivo de este estudio fue investigar el papel del entrenamiento en taekwondo (TKD) en el bienestar subjetivo (BS) de adolescentes (12-18 años) en la ciudad de Adís Abeba. Se utilizó un método de encuesta transversal, y un cuestionario autoadministrado como principal herramienta para la recolección de datos. Un total de 162 adolescentes (108 practicantes de TKD de cuatro clubes de TKD seleccionados aleatoriamente y 54 adolescentes no practicantes de TKD de una escuela pública secundaria seleccionada aleatoriamente), participaron en el estudio. El trabajo trató de determinar el nivel de bienestar subjetivo de los adolescentes de TKD a través del Personal Wellbeing Index - School Children (PWI-SC). Además, se compararon los adolescentes por grupos (adolescentes de TKD en tres grupos según su grado/cinturón y adolescentes practicantes - no practicantes) de acuerdo a sus puntuaciones de PWI-SC. Los resultados del estudio mostraron que: (1) los adolescentes de TKD tenían un nivel alto (puntuación media) de BS medido por el PWI-SC (81,95 ; 95%IC: 79,70 a 84,20); (2) no hubo diferencias significativas en el BS entre los tres grupos de adolescentes de TKD (cinturones de nivel bajo, medio y alto) ($F_{(2, 81)} = 1.58, p > .05$); y (3) en comparación con los adolescentes no practicantes de TKD, los adolescentes de TKD tuvieron una puntuación media de BS significativamente más alta ($t = 4,25_{(77.97)}, p < 0,001; d = 0,79$). En general, los

O papel do treino no taekwondo e o bem-estar subjetivo dos adolescentes em Adis Abeba, Etiópia

Resumo

O objetivo deste estudo foi investigar o papel do treino no taekwondo (TKD) no bem-estar subjetivo (BS) dos adolescentes (12-18 anos) na cidade de Adis Abeba, Etiópia. Utilizou-se um método transversal e um questionário autoadministrado, como principal ferramenta para a recolha de dados. Um total de 162 adolescentes (108 praticantes de TKD de quatro clubes de TKD seleccionados aleatoriamente e 54 adolescentes não practicantes de TKD de uma escola pública secundária seleccionada aleatoriamente) participaram no estudo. O trabalho tratou de determinar o nível de bem-estar subjetivo dos adolescentes de TKD através do "Personal Wellbeing Index-School Children" (PWI-SC). Por outro lado, comparou-se os adolescentes por grupos (adolescentes de TKD em três grupos segundo a graduação/cinto e adolescentes practicantes - não practicantes), de acordo com as suas pontuações de PWI-SC. Os resultados do estudo revelam que: (1) os adolescentes de TKD tinham um nível elevado (pontuação média) de BS medido pelo PWI-SC (81,95; 95%IC: 79,70 a 84,20); (2) não houve diferenças significativas no BS entre os três grupos de adolescentes de TKD (gradações de baixo nível, médio e alto) ($F_{(2, 81)} = 1.58, p > .05$); e (3) em comparação com os adolescentes não practicantes de TKD, os adolescentes tiveram uma pontuação média de BS significativamente mais alta ($t = 4,25_{(77.97)}, p < 0,001; d = 0,79$). Em geral, os resultados deste estudo indicam que o

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resultados de este estudio indican que el entrenamiento en puede suponer una contribución positiva al bienestar de los adolescentes.

Palabras clave: Adolescente; deportes de combate; artes marciales; taekwondo, bienestar, bienestar subjetivo.

treino pode contribuir positivamente para o bem-estar dos adolescentes.

Palavras-chave: Adolescente; desportos de combate; artes marciais; taekwondo, bem-estar, bem-estar subjetivo.

1. Introduction

These days, it is common to observe that many Asian martial arts training centers (especially, world and international TKD, Karate, and Kung Fu) are opened in urban parts of Ethiopia and many of their students are adolescents. As a social worker and as a person who has some experience in the martial arts, I always wondered about the role of such trainings on the well-being of adolescents.

Adolescence is a stage of human development where multifaceted changes (physical, cognitive, emotional, social, and behavioral) occur. The occurrence of such changes, unless handled effectively, threatens the well-being (good life or quality life) of adolescents by resulting in a myriad of problems including aggression, mood swings, sexuality related problems, suicidal tendencies, concerns about body image, unrealistic experimentation or risk taking behaviors (like use of alcohol and drugs), and etc. (APA, 2002; Archer, 2005; Compas, 2004; Moshman, 2005; Salkind, 2002; UNICEF, 2011). One way to help adolescents successfully adjust to changes that occur during adolescence and promote their well-being could be allowing them to participate in martial arts training.

“Martial arts are considered to be systems that blend the physical components of combat with strategy, philosophy, tradition, or other features that distinguish them from pure physical reaction...” (Green, 2001, p. xvi). In the world, there are more than 100 types of martial arts and TKD is one of the most popular ones (Lewis, 1996). TKD has been practiced in 205 countries, including Ethiopia (WTF, n.d.) by more than 30 million people (Park, Park, & Gerrard, 2009). TKD is the national sport of South Korea and in its modern form it is an Olympic sport. Literally, the word TKD can be understood by identifying or isolating its constituent words, i.e., *Tae*, *Kwon*, and *Do*. *Tae* means “to kick” using the feet; *Kwon* means “to punch” using fists or hands; and *Do* means “way” or “method” or “art” or “discipline.” Therefore, literally, TKD can be defined as the way or art of kicking and punching or more broadly, as a way of unarmed combat using the body. Nevertheless, as it is the case in other oriental martial arts, TKD is beyond combat and fighting techniques – it is a way of life; way of thinking; unit of mind, body and life; development of moral character (Khan & Joshi, 2011; Park, Park, & Gerrard, 2009, 2009; Tausk, 2001; WTF, n.d.).

Studies regarding the effects of the martial arts began to emerge around the 1960s in the behavioral sciences and expanded especially after the mid of 1990s (Vertonghen & Theeboom, 2010). Two recent literature reviews regarding the psychosocial impact of martial arts practice on practitioners, Binder (2007) and Vertonghen and Theeboom (2010), found out that findings of such studies are inconsistent: while most of the researchers found evidences of positive effects of such trainings, some researches (especially recent ones) found evidences of no and negative effects.

The positive effect of the martial arts found by different studies can be broadly classified as physical benefits (see, Draxler, Ostermann, & Honekamp, 2010; Fong, Fu, & Ng, 2011; Fong, Tsang, & Ng, 2011; Khan & Joshi, 2011) and psychosocial benefits (see, Goldsmith, 2013; Kurian, Verdi, Caterino, & Kulhavy, 1994; Lakes & Hoyt, 2004; Movahedi, Bahrami, Marandi, & Abedi, 2013; Steyn & Roux, 2009; Zivin, et al., 2001). The negative effect of the martial arts found by different studies can be categorized as psychosocial problems (see, Endresen & Olweus, 2005; Lotfian, Ziaee, Amini, & Mansournia, 2011), health related problems (see, Wargo, Spirrison, Thorne, & Henley, 2007), injury related problems (see, Kazemi, et al., 2009; Landa, 2004; Pieter, 2005; Zetaruk, et al., 2004), and unhealthy weight management of athletes (see, Kazemi, Alima, & Ciantis, 2011). There are also researches that showed even participating in different types of the same martial arts (i.e., modern and traditional) can result in different outcomes. The traditional martial arts are usually found to have positive effect while the modern ones have the opposite (see, Nosanchuk & MacNeil, 1989; Trulson, 1986).

Though there are many studies that are concerned with the martial arts and their roles on practitioners, none of them was done in Ethiopia. This current study took the initiative to attempt to contribute in filling this knowledge gap by researching the role of TKD training on the subjective well-being of adolescents in Addis Ababa city. In so doing, the study made effort to answer the following research questions and hypotheses.

1.1. Research questions and hypotheses

Question 1: What is TKD adolescents' level of subjective well-being (SWB), in Addis Ababa?

Question 2: Is there a statistically significant difference in subjective well-being between TKD adolescents with different belt rankings?

Hypothesis 1: There is a statistically significant difference in subjective well-being between TKD adolescents with different belt rankings (lower level belts, middle level belts, and higher level belts).

Question 3: Is there a statistically significant difference in subjective well-being between TKD adolescents and non- taekwondo adolescents?

Hypothesis 2: There is a statistically significant difference in subjective well-being between TKD adolescents and non- taekwondo adolescents.

1.2. Specific objectives of the study

(1) To determine TKD adolescents' level of subjective well-being, in Addis Ababa City.

(2) To compare TKD adolescents with different belt rankings based on their levels of subjective well-being.

(3) To compare TKD adolescents with non- taekwondo adolescents based on their levels of subjective well-being.

2. Research methodology

This study is part of a research conducted in 2014 to investigate the role of TKD training on the wellbeing of adolescents in Addis Ababa. The purpose of this particular part was to investigate the role of Taekwondo TKD training on the subjective wellbeing (SWB) of adolescents. This study utilized a descriptive, cross-sectional survey design.

2.1. Participants

This study was conducted in Addis Ababa city which is the capital city of Ethiopia. In addition to being a host for many continental and international organizations, Addis Ababa is a city where different martial arts are practiced by its dwellers.

The population of this study was adolescent (12-18 years old) practitioners of TKD in Addis Ababa city. According to Addis Ababa's WTF and Addis Ababa Sport Commission (personal communications, 07/03/2014), the total number of adolescent practitioners of world TKD in Addis Ababa was unknown, but the total number of registered world TKD clubs. Accordingly, there were 42 registered world TKD clubs in Addis Ababa. There were also clubs which were not registered by Addis Ababa WTF and Addis Ababa Sport Commission because of different reasons (e.g., failure to fulfill minimum requirements like facilities of shower and toilet). The researcher attempted to identify these unregistered clubs with the help of TKD coaches. Accordingly, 11 clubs were identified. Therefore, the total number of world TKD clubs in Addis Ababa city was supposed to be around 53 (42 officially registered + 11 unregistered). This study also sought to compare TKD adolescents with non-TKD adolescents. In this case, school adolescents (9th graders) who did not do any martial arts were included in this study from a randomly selected public high school in Addis Ababa. In this school, there were a total of 1,132 grade nine students in 25 classes.

This study sought to do two major comparisons using subjective wellbeing as dependent variable. The first comparison was among TKD adolescents of different belt levels (lower, middle, and higher level belts) using one way ANOVA and the second was between TKD and non-TKD adolescents using independent samples *t*-test. The independent variable, in the ANOVA case was TKD adolescents' belt level and in the *t*-test it was adolescents' group (TKD adolescents and non-TKD adolescents).

Cohen (1992) strongly recommends that researchers determine sample size for studies which test hypotheses based on the concept of power analysis, so that sufficient sample size is secured that enables researchers to minimize statistical errors. Cohen (1992) provided a handbook that has a calculated sample size table specifying sufficient amount of sample size for different statistical tests given particular values for α (.01, .05 and .10), power (.80), and effect size (small, medium and large).

Based on Cohen's (1992) advice and expectation of some attrition rate, the sample size of this study was determined. Specifying a two-tailed test with the conventional α (.05) and power (.80) and with a large effect size (expecting large magnitude of mean difference) for both the ANOVA (.40) and for the *t*-test (.80), the sufficient sample size required for this study was known. For the ANOVA which has three groups, a total of 63 TKD adolescents (21 in each group) can be sufficient. For the two sample *t*-test, 26 adolescents from each group can suffice. Since this study conducted the two analyses, 63 TKD adolescents and 26 non-TKD adolescents or a total of 89 adolescents were required. However, the final sample size was made to be 162 (108 TKD and 54 non-TKD) adolescents to compensate for a possible dropout of respondents and missing data.

To select participants for this study, one-stage cluster sampling was utilized mainly because of the absence of sampling frame for TKD adolescents and because the size of each TKD club was unknown. Of the total 53 world TKD clubs in Addis Ababa, four TKD clubs were sampled randomly using lottery method. And all of the adolescents in the four clubs were included in the study. In the case of the non-TKD adolescents, two classes (of the 25 classes of ninth grade) were randomly sampled (using lottery method) and all the adolescents in these classless were included in the study. Further information on the characteristics of participants is provided in the 'results' section of this paper. The researcher considered the characteristics of the participants as a finding because TKD clubs were the primary samples of the study and they did not have organized data about their trainees' characteristics.

2.2. Instruments

As said, this study used the subjective wellbeing of adolescents as dependent variable and TKD adolescents' belt level and adolescents' group as independent variables. Conceptually, belt level in TKD can be defined as practitioner's rank in the hierarchy of TKD. This ranking system starts from white belt (new student) and continues to progress to higher color belts: yellow, green, blue, brown (not found in the official WTF list), red, and different Dan/ degrees of black belts (1st Dan to 9th Dan). Belt level in TKD was measured in this study at ordinal level by identifying the belt ranks of the TKD adolescents and dividing them into three categories as per the suggestion of TKD coaches. The categories are: lower level belts (white, yellow, and green), middle level belts (blue and brown) and higher level belts (red and above).

Adolescent group was defined as adolescents' status in terms of participating or not participating in TKD training. This variable was measured at nominal level by identifying whether the adolescents participated in TKD or not. In this case there were two groups, i.e., TKD and non-TKD adolescents. The non-TKD adolescents did not have training in the martial arts.

Conceptually, Subjective Wellbeing is defined as "a normally positive state of mind that involves the whole life experience" (Tomyn, Norrish, & Cummins, 2011). Adolescents' SWB in this study was measured using a seven-items scale called the Personal Well-being Index-School Children (PWI-SC). (See Appendix A). PWI-SC is one of the parallel forms of Personal Well-being Index-Adult (PWI-A) which originated in Australia.

The Personal Well-being Index (PWI) scale contains seven items of satisfaction each one corresponding to a quality of life domain as: standard of living, health, achieving in life, relationships, safety, community-connectedness, and future security. These seven domains are theoretically embedded, as representing the first level deconstruction of the global question: 'How satisfied are you with your life as a whole?' (IWbG, 2013, p. 10).

In the case of all versions of PWI, the scale asks respondents how satisfied they are with the different domains of their quality of life. The PWI has 11-point satisfaction scale that range from 0-10, for each domain or question. The lowest point (0) indicates 'no satisfaction at all' while the highest point (10) indicates 'complete satisfaction'. The middle point (5) indicates 'neither dissatisfaction nor satisfaction' or 'neutral' position (IWbG, 2013).

In this study, the scale was scored and analyzed by summing and averaging the scores of all the seven domains in order to get the score of Subjective Wellbeing or PWI-SC. In so doing, some standardization of the scores was performed. This was done by converting the scores that ranged from 0-10 into points that range from 0-100. To do so, one can simply bring the decimal point to the right. For instance, a score of 8 is converted into 80 points and a mean score of 7.56 is converted into 75.6 points. This standardization is designed to enable direct comparison among results of different versions of PWI and other scales (IWbG, 2013).

The PWI-A scale has acceptable psychometric properties (validity and reliability). In the case of construct validity, IWbG (2013) reported that "the combination of both unique and shared variance by the seven domains typically explains about 40-60 % of the variance in 'Satisfaction with Life as a Whole'" (p. 10). In addition, "the seven domains also consistently form a single stable factor and account for about 50% of the variance in Australia and other countries" (IWbG, 2013, p. 10).

In the case of convergent validity, this scale was correlated with satisfaction with life scale, 0.78 correlation was found (Thomas, 2005, cited in IWbB, 2013). This scale also has good record of reliability. Lau and Cummins (2005, cited in IWbG, 2013), reported a Cronbach's alpha of 0.70 – 0.85, both in Australia and other countries. A moderate inter-domain correlation (0.30 - 0.55) and item-total correlation (0.50) were also reported. In addition, a result on test-retest reliability (1-2 week interval) was reported to be good with 0.84 intra-class correlation coefficient.

PWI-SC was used in this study because it was found to be the best available measure of adolescents' Subjective Wellbeing. First, PWI-SC, unlike other measures of well-being, is designed to be used with adolescents aged 12 – 18 years. In relation to this, PWI-SC is proven by different studies to be parallel with that of (measuring the same construct as) PWI-A (Tomy & Lau, 2013). Second, PWI-SC can be applicable in different cultures. It has already been tested in different cultures, such as Brazil, Chile, and Spain by Casas et al. (2012). In addition, it was tested on adolescents of Indigenous Australians by Tomy, Norrish, and Cummins (2011). In all cases, it is reported that the PWI-SC is a valid and reliable measure of adolescents' Subjective Wellbeing (Norrish & Cummins, 2011). Third, PWI-SC has short list of items (seven items). This is important in terms of reducing respondents' feeling of fatigue while filling the questionnaire. Finally, it is important to note that there is no restriction to use PWI-SC for a non-commercial purpose.

Before administration, this scale was reviewed by four experts at Mizan-Tepi University's psychology and sociology departments (two experts from each department), for content validity and cultural issues. The scale was also back translated by two psychologists and commented by a language professional. During the double translation what was done was: first the scale was translated from English to Amharic language by a psychologist. Then the Amharic translation was back translated into English language by another psychologist. Finally, a comparison was made between the original scale and the last translation and the translations were accepted.

2.3. Tool and procedure of data collection

The main source of data for this study was primary data. Self-administered questionnaire was used as a tool of data collection. (See Appendices A & B). The self-administered questionnaire had both close- and open-ended forms. And it included background information on adolescents and

a measure of adolescent subjective wellbeing. The questionnaire was prepared in English language and administered in Amharic language after it passed through a back translation.

The first step in the data collection was to contact the head instructors of each sampled TKD club and the high school vice principal to explain about the research and arrange schedules for delivering consent forms and administering questionnaires. Schedules for data collection were fixed by all clubs and the school for different times.

The questionnaires were presented and collected when adolescents came to their clubs or school for training or learning. During data collection, the researcher was present in the gyms or the class rooms with the coaches and teachers, coordinating and monitoring the process. For those few adolescents who did not appear in the gyms or the class rooms at that particular day of data collection, questionnaires were delivered to them through their coaches/teachers and collected from the coaches/teachers later on.

2.4. Research design and data analysis

Data analysis was done in this study using the following steps. After the quantitative data were collected using the questionnaire, the first step was data cleaning and management. Each questionnaire was checked for problems like response sets, inappropriate responses, no response, and illegible respondents. All these problems were found, but only illegible respondents, i.e., two TKD adolescents above 18 years and a martial arts student in the non-TKD group, were excluded from further analysis. However, questionnaires with response sets, no response, and inappropriate responses were not thrown away. Instead, they were retained to be entered into SPSS version 20 as missing values, because these questionnaires had other appropriate and necessary responses for other questions.

After this, the data that was used for parametric analysis were checked using SPSS for meeting two of the fundamental assumptions, i.e., normality and homogeneity of variance. Other assumptions (random samples, interval/ratio level dependent variable, and an independent variable having independent categorical groups) had already been met. Normality and outliers were checked using descriptive statistics (like mean, SD, range, etc), histograms, and box plots. The dependent variable was found to be approximately normally distributed in all groups of the independent variables. Homogeneity of variance was also checked for both the ANOVA and the independent samples *t*-test using Levene's test. It was found that the three groups in the ANOVA had equal variance ($F_{(2,81)} = 2.60, p = .772$). The two groups in the *t*-test did not have equal variance ($F_{(133)} = 9.42, p < .05$). But, this did not pose a threat since SPSS adjusted its computation in a situation when equal variance is not assumed.

After this, descriptive statistics was used to summarize the samples characteristics and then three major statistical procedures were carried out using SPSS. First, estimation of TKD adolescents' level of Subjective Wellbeing was done using the PWI-SC. Both point and interval estimations were done at 95% confidence level. Second, one way ANOVA was computed to see whether there was a difference, in terms of Subjective Wellbeing, between TKD adolescents classified into three groups (lower, middle, and higher belts). Third, independent samples *t*-test was done to compare TKD adolescents with non-TKD adolescents, in terms of Subjective Wellbeing. In this case effect size was also calculated.

2.5. Ethical Consideration

The following important points were given attention in the case of ethical consideration: informed consent/assent/permission at different levels; anonymity of participants; confidentiality of information given by participants; and avoidance of possible harm to participants as a result of participating in the study. Permission and consent to conduct the study and to collect data was secured at different levels from different parties. The first was from the Addis Ababa University's School of social work that reviewed the proposal of this study for approval. The second level of

permission was gained from each TKD club selected for this study. And, finally, each individual participant was asked for his or her informed assent.

The nature and purpose of the study was explained at all levels of permission before consent/assent was secured. In relation to this, the researcher made clear to participants the level of harm or discomfort that this research might cause to participants. The potential risk of participating in this study was believed to be limited to some discomfort as adolescents were asked how happy they were with the different domains of their subjective wellbeing. In addition, the issue of anonymity and confidentiality was assured for both the clubs/school and adolescents. In this case, the researcher assured participants that any identifiable information about them would never be used. To do so, participants were not asked to write or tell their names in the questionnaire. In addition, pseudonyms/ code numbers were used to present results. Furthermore, the researcher assured participants that the findings of this study would be used only for academic and professional purpose. Participants were also told that they could withdraw from the study anytime they want.

All these were done through consent/assent forms that were prepared for this purpose. Consent/assent forms were prepared for TKD clubs/head instructors and TKD and non-TKD adolescents. The consent forms for the TKD clubs/head instructors enabled the researcher to get permission of the clubs to have their students participate in this study (as gate keepers and adult guardians). In the case of adolescents, assent forms were prepared and presented on the cover letter of the questionnaire. And, they were informed to show their assent by filling in the questionnaire. (See Appendices A & B).

3. Results

3.1. Background information on participants

Adolescents of both sexes participated in this study. Out of the 108 TKD adolescent respondents, 57 (52.8 %) were males while 51 (47.2%) were females. In the case of non-TKD adolescents, the figure is somewhat reversed. Of the 54 non-TKD adolescents, 29 (53.7 %) were females and the rest 25 (46.3 %) were males. However, overall, the numbers of male and female respondents is almost equal; the number of males is 82 (50.6 %) while the number of females is 80 (49.4%). In the case of respondents' age, there is also some difference between the two groups of adolescents. The mean age of TKD adolescents ($M = 14.6$, $SD = 1.9$) was slightly smaller than the non-TKD adolescents ($M = 15.8$, $SD = 1.0$).

TKD adolescent respondents were of different belt rankings. Out of 106 TKD adolescent respondents who indicated their belt levels, majority of them, 54 (50.9%) were found in the lower belt category. And, the rest of them were found, in equal amount, in the middle and higher level belt categories, 26 (24.5 %) for each.

3.2. Taekwondo adolescents' level of subjective wellbeing and comparisons of adolescents based on their subjective wellbeing (PWI-SC) scores

The result of the ANOVA came up with two important findings. The first finding showed the TKD adolescents' level of subjective wellbeing, as measured by the PWI-SC. Accordingly, the TKD adolescents' mean point of PWI-SC was found to be 81.95 (95%CI: 79.70 to 84.20).

However this does not tell the whole story. The next logical step, i.e., comparing TKD adolescents of different belt rankings, is needed to be taken here. The second important finding showed that there was no significant difference in subjective wellbeing scores between TKD adolescents with different belt rankings, $F_{(2, 81)} = 1.58$, $p = .21$. Lower level belts ($M = 83.88$, $SD = 10.20$), middle level belts ($M = 80.37$, $SD = 11.24$), and higher level belts ($M = 79.54$, $SD = 9.53$) did not differ on their mean points of PWI-SC.

Now, the next step is to find out whether TKD adolescents had a different level of SWB when compared to other non-TKD adolescents (sampled from a public high school). In this case, 85 TKD

adolescents and 50 non-TKD adolescents gave valid responses. The Levene's test of equality of variance showed that the assumption of homogeneity of variance was violated, $F_{(133)} = 9.42$, $p = .003$). Because of this, a t statistic not assuming homogeneity of variance was computed. The independent samples t -test revealed that there was a significant difference in terms of mean points of PWI-SC between the two groups. TKD adolescents ($M = 81.76$, $SD = 10.43$) reported significantly higher levels of subjective wellbeing than non-TKD adolescents ($M = 71.64$, $SD = 14.80$), $t_{(77.97)} = 4.25$, $p < 0.001$; $d = 0.79$. The 95% CI of the difference is 5.38 to 14.85. The effect size ($d = 0.79$) was found to be equal with Cohen's convention for a large effect ($d = 0.80$). And this suggested high practical significance. The effect size for this analysis was calculated using the formula: $d = M_1 - M_2 / \sigma_{\text{pooled}}$

4. Discussion

From the results of the study, a number of important findings are noted. Though some of the findings discussed here are not central to this study, they are discussed anyway because they are found to be interesting enough. The first is the gender gap in World TKD in Addis Ababa, Ethiopia. This gender gap can be seen from two directions. One is in light of TKD adolescents and the other is in the case of TKD coaches. Of the 108 TKD adolescent respondents in this study, 57 (52.8 %) were males while 51 (47.2%) were females. These figures do tell us that the number of female adolescents who participate in TKD is almost equal with that of male adolescents'. Observing this kind of very narrow gender gap in a developing country where women are not encouraged to participate in activities outside of home is really encouraging and it may be indicative of the narrowing gender gap in other spheres of the society's life in Ethiopia, like primary education. Nevertheless, the gender gap remains very wide when it comes to TKD coaches. All of the coaches of the four participant TKD clubs in this study were males. In addition, there was no one single female coach of TKD on the list of registered world TKD clubs by the Addis Ababa Sport Federation. The researcher has heard of only one female coach of World TKD in Addis Ababa. This situation may indicate that, like in other aspects of society in Ethiopia, e.g., education and work, the number of women in TKD decreases as the level of TKD increases.

With regard to subjective wellbeing of adolescents, the ANOVA result showed two important findings. The first finding is regarding TKD adolescents' level of SWB, as measured by the PWI-SC. Accordingly, the TKD adolescents' mean point was found to be 81.95 (95%CI: 79.70 to 84.20). A group's mean score of the PWI-SC can be interpreted and referenced by comparing it with the normal distribution of other normative group means. In this case, the normative range of Western means is between 70-80 points and Australian mean is between 73.4 and 76.4 points (IWbG, 2013). The normal distribution of group means of non-Western countries, specifically, Asians (China and East Asia) is some 10% lower than that of the Western and Australian, i.e., it has a range of 60-70 points and a mean of 65 (Lau, 2013). Based on such comparison, it can be claimed that TKD adolescents level of SWB or mean point of PWI-SC is very high, since it surpasses all the three normative ranges of the means of PWI-SC.

Knowing TKD adolescents had a very high level of subjective wellbeing; one may wonder whether there is a difference in the mean points of PWI-SC of TKD adolescents with different belt levels. The second ANOVA finding, contrary to the research hypothesis, showed that there was no significant difference in subjective wellbeing scores between TKD adolescents with different belt rankings. This finding indicates that adolescents who are at the lower level ranking of TKD have the same level of subjective wellbeing as those TKD adolescents who have higher ranks.

TKD adolescents had a very high level of subjective wellbeing and there was no significant difference in the level of subjective wellbeing between TKD adolescents themselves. These findings in turn is tempting to do further comparison within Ethiopian context, to know whether TKD adolescents have a different level of subjective wellbeing when compared to other non-TKD adolescents. A comparison was made between TKD adolescents and non-TKD adolescents sampled from a public high school. The independent samples t -test, as hypothesized, revealed that there is a statistically significant difference between the two groups in terms of their mean points of PWI-SC. TKD adolescents reported significantly higher levels of SWB than non-TKD adolescents. The

magnitude of the difference between the two groups (effect size or $d = 0.79$) is large as it is equivalent with Cohen's (1992) convention for a large effect ($d = 0.80$). And this shows a high practical significance. From this finding, it can also be understood that the non-TKD adolescents mean point of PWI-SC (71.64) is lower than the normative ranges of Australian mean (73.4 - 76.4 points) but closer to the minimum of Western means (70-80 points) and the maximum of the non-Western normative range (67-70 points).

In general, the result of the current study seems to be consistent with what most of the literature say about the role of the martial arts. Many studies have examined the role of different martial arts training on the lives of practitioners and most of them came up with positive results showing the positive effect of martial arts training (see, for example, Binder, 2007; Draxler, Ostermann, & Honekamp, 2010; Fong, Fu, & Ng, 2011; Fong, Tsang, & Ng, 2011; Goldsmith, 2013; Khan & Joshi, 2011; Kurian, Verdi, Caterino, & Kulhavy, 1994; Lakes & Hoyt, 2004; Movahedi, Bahrami, Marandi, & Abedi, 2013; Steyn & Roux, 2009; Vertonghen & Theeboom, 2010; Zivin, et al., 2001).

5. Implication, conclusion, and limitation of the study

5.1. Implication of the Study

The researcher believes that the findings of this study have some implications for practice. This study is the first of its kind (that studies about the role of martial arts on well-being) in Ethiopia. This by itself can be considered as a contribution since it paves the way for future researchers to do further studies. The findings of this study could serve as a starting point for researchers who are interested in measuring and promoting well-being, in addition to studying the role of the martial arts. In this regard, the researcher suggests that interested researchers study different types of martial arts and even other sports in relation to well-being.

The findings of this study also have implication for social work and psychology practitioners. It is well-understood by social workers and psychologists that adolescence is a developmental stage characterized by multidimensional changes and challenges of adaption. The results of this study and most of the literature showed that TKD contributes for the well-being of adolescents. In order to help adolescents successfully adapt the developmental changes they encounter, prevent problems associated with the changes, and promote their well-being, practitioners might consider using TKD as an intervention strategy.

5.2. Conclusion

Adolescence is a time of multifaceted changes and associated problems resulting from maladjustment. Successful adaption during this stage helps adolescents to have well-being and lead a better life as adults. And, this positive development of adolescents is of paramount importance not only for adolescents but also for their families, communities, societies, and even for the world.

The training of TKD/martial arts could be one way to bring about desirable adolescent development. The literature in the area of exercise/sport and the martial arts mostly reported positive outcomes of such activities for the lives of adolescents. This study examined the role of TKD training on the subjective well-being of adolescent practitioners. In so doing, it addressed TKD adolescents' level of subjective wellbeing and it compared adolescents based on their level of subjective wellbeing. Overall, the results of this study showed that the training of TKD could contribute positively to the subjective well-being of adolescents.

Therefore, the researcher advises different concerned parties about the well-being of adolescents to consider using TKD (preferably the traditional one) to enable adolescents develop positively in physical, psychological, social, and spiritual dimensions of their lives. I encourage parents to send their children for such training, after carefully studying the nature of the coach and the club. I advise social workers and other professionals working with adolescents to use such training as intervention strategy. Coaches of TKD should give more emphasis to the traditional elements of the training; improve gym facilities, and reconsider adolescents' participation in

competitions. Finally, the government of the country also should support TKD in every way possible.

5.3. Limitation of the study

This study examined the role of TKD training on the subjective well-being of adolescents in Addis Ababa and it is not without limitations. Therefore, one needs to be cautious when making generalizations based on this study.

In this study, only one of the many martial arts, i.e., TKD is studied. The study was delimited to studying TKD clubs in Addis Ababa, not in other parts of the country. It is also important to note that two of the TKD clubs asked to participate in this study (after random sampling), failed to do so after agreeing to participate. Nevertheless, they were replaced by two other randomly selected clubs. The question why these clubs failed to participate may raise a suspicion. However, the researcher believes that they failed to participate in this study not because they were trying to hide something, but because of their coaches' busy schedules (for example, one of them worked in his part time at different gyms and the other had positions in the Addis Ababa World TKD Federation).

In this study it was found that TKD adolescents had a higher level of subjective wellbeing (mean points of PWI-SC), when referenced to the normal distribution of group means (Asian, Australian, and European means) and when compared with the non-TKD groups. Nevertheless, this does not imply any cause and effect relation between the training of TKD and adolescents' SWB; other factors than the training of TKD might have played a role in this case. Therefore, further investigations in this direction, more preferably experimental studies, are needed.

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Appendix A: Questionnaire for TKD Adolescents

Addis Ababa University - School of Social Work

The Role of Taekwondo Training on the well-being of Adolescent in Addis Ababa

Dear respondent, my name is _____ and I am a master of social work student at Addis Ababa University. Currently, I am doing a research to know the role of taekwondo training for adolescent practitioners of taekwondo like you. Therefore, I am kindly asking you to voluntarily participate in this study by responding to the questions found in this questionnaire. Please note that your participation in this study is so valuable for this study which is probably the first of its kind in Ethiopia.

Here are some important points you should be aware of before agreeing to participate in the study. First, participation in this study is completely voluntary. You can refuse to participate in this study any time you want to. You can also skip answering to any question in the questionnaire, if you want to. Second, you must not write your name in the questionnaire so that your anonymity will be secured. Since you are not going to be asked any identifiable information, no one will be able to know that this questionnaire is filled by you. In addition, the information you give in this questionnaire will never be used for any other purposes than academic and professional use.

Third, participation in the study will not gain you financial or material rewards. But you may get mental satisfaction and some experience since you are contributing to this study which is probably the first research in Ethiopia that studies the role of taekwondo for the well-being of adolescents like you. Finally, by filling in this questionnaire and returning it to the researcher, you give your consent/assent (you inform the researcher that you voluntarily agreed) to participate in this study.

If you have any question regarding this study, you can contact me by the following addresses: Mobile phone number: _____ or E-mail: _____.

Thank you so much, in advance, for your voluntary participation!

Directions on how to fill in the Questionnaire:

- Please do not write your name.
- Please read the questions carefully.
- Please indicate your answer for questions with boxes by ticking in the boxes or by putting ✓ in the boxes.
- Please answer questions with blank space by writing on the provided blank spaces.
- There is no time limit in filling this questionnaire.

Part One: Please tell us something about you.

1. How old are you? _____
2. What is your sex? _____
3. What is your religion? _____
4. What grade student are you in your school? _____
5. What is your belt level in Taekwondo? _____

Part Two: Now, you will be asked a few questions about how happy you feel, using a scale from zero to 10. On this scale, zero means you feel VERY SAD, 10 means you feel VERY HAPPY. And the middle of the scale is 5, which means you feel neither HAPPY nor SAD.

There are no right or wrong answers. It's what you think that matters.

1. How happy are you with your life as a whole?

Very Sad												Very Happy
0	1	2	3	4	5	6	7	8	9	10		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



2. How happy are you about the things that you have? Like the money you have and the things you own?

Very Sad 0 1 2 3 4 5 6 7 8 9 10 Very Happy

Not happy or sad

3. How happy are you with your health?

Very Sad 0 1 2 3 4 5 6 7 8 9 10 Very Happy

Not happy or sad

4. How happy are you with the things that you want to be good at?

Very Sad 0 1 2 3 4 5 6 7 8 9 10 Very Happy

Not happy or sad

5. How happy are you about getting on with the people you know?

Very Sad 0 1 2 3 4 5 6 7 8 9 10 Very Happy

Not happy or sad

6. How happy are you with how safe you feel?

Very Sad 0 1 2 3 4 5 6 7 8 9 10 Very Happy

Not happy or sad

7. How happy are you about doing things away from your home?

Very Sad 0 1 2 3 4 5 6 7 8 9 10 Very Happy

Not happy or sad

8. How happy are you about what may happen to you later on in your life?

Very Sad 0 1 2 3 4 5 6 7 8 9 10 Very Happy

Not happy or sad

Thank you very much for your participation!

Appendix B: Questionnaire for Non-TKD Adolescents

Addis Ababa University - School of Social Work

The Role of Taekwondo Training on the well-being of Adolescents in Addis Ababa

Dear respondent, my name is _____ and I am a social work student at Addis Ababa University. Currently, I am doing a research to know about the well-being of adolescents. Therefore, I am kindly asking you to voluntarily participate in this study by responding to the questions found in this questionnaire. Please note that your participation in this study is so valuable for this study.

Here are some important points you should be aware of before agreeing to participate in the study. First, participation in this study is completely voluntary. You can refuse to participate in this study any time you want to. You can also skip answering to any question in the questionnaire, if you want to. Second, you must not write your name in the questionnaire so that your anonymity will be secured. Since you are not going to be asked any identifiable information, no one will be able to know that this questionnaire is filled by you. In addition, the information you give in this questionnaire will never be used for any other purposes than academic and professional use.

Third, participation in the study will not gain you financial or material rewards. But you may get mental satisfaction and some experience since you are contributing to this study. Finally, by filling in this questionnaire and returning it to the researcher, you give your consent/assent (you inform the researcher that you voluntarily agreed) to participate in this study.

If you have any question regarding this study, you can contact me by the following addresses: Mobile phone number: _____ or E-mail: _____.

Thank you so much, in advance, for your voluntary participation!

Directions on how to fill in the Questionnaire:

- Please do not write your name.
- Please read the questions carefully.
- Please indicate your answer for questions with boxes by ticking in the boxes or by putting ✓ in the boxes.
- Please answer questions with blank space by writing on the provided blank spaces.
- There is no time limit in filling this questionnaire.

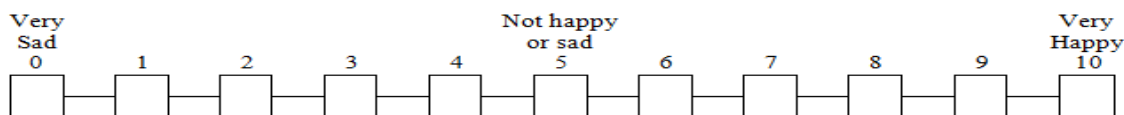
Part One: Please tell us something about you.

1. How old are you? _____
2. What is your sex? _____
3. What is your religion? _____
4. What grade student are you in your school? _____
5. Do you participate in any martial arts activity? Yes No
- 5.1. If your answer for question number 6 is “yes”, (a) What is the name of the martial arts? _____, (b) How long have you been doing it? _____, (c) Where do you do it? _____

Part Two: Now, you will be asked a few questions about how happy you feel, using a scale from zero to 10. On this scale, zero means you feel VERY SAD, 10 means you feel VERY HAPPY. And the middle of the scale is 5, which means you feel neither HAPPY nor SAD.

There are no right or wrong answers. It’s what you think that matters.

1. How happy are you with your life as a whole?



2. How happy are you about the things that you have? Like the money you have and the things you own?

Very Sad 0 1 2 3 4 Not happy or sad 5 6 7 8 9 Very Happy 10

— — — — — — — — — — —

3. How happy are you with your health?

Very Sad 0 1 2 3 4 Not happy or sad 5 6 7 8 9 Very Happy 10

— — — — — — — — — —

4. How happy are you with the things that you want to be good at?

Very Sad 0 1 2 3 4 Not happy or sad 5 6 7 8 9 Very Happy 10

— — — — — — — — — —

5. How happy are you about getting on with the people you know?

Very Sad 0 1 2 3 4 Not happy or sad 5 6 7 8 9 Very Happy 10

— — — — — — — — — —

6. How happy are you with how safe you feel?

Very Sad 0 1 2 3 4 Not happy or sad 5 6 7 8 9 Very Happy 10

— — — — — — — — — —

7. How happy are you about doing things away from your home?

Very Sad 0 1 2 3 4 Not happy or sad 5 6 7 8 9 Very Happy 10

— — — — — — — — — —

8. How happy are you about what may happen to you later on in your life?

Very Sad 0 1 2 3 4 Not happy or sad 5 6 7 8 9 Very Happy 10

— — — — — — — — — —

Thank you very much for your participation!