Effects of Training-Workaholism of Athletes to Quality of Life: Using Health-Promoting Lifestyle as Mediating Effect

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ABSTRACT

The study aimed to discuss the effecting situations of training-workaholism, health-promoting lifestyle, and quality of life among national collegiate athletes from different categories of competitive sports. The subjects of present study were 492 valid samples of national collegiate athletes. The results indicate that training involvement served as the best predictor of training-workaholism to the factor of quality of life of athletes, and the second best was training enjoyment, with the total amount of explanation of variance of 14%; self-actualization served as the best predictor of health-promoting lifestyles to the factors of quality of life of athletes, and the second best was interpersonal support and stress management, with the total amount of explanation of variance of 23%; also, health-promoting lifestyle has reliable, complete mediation effect to training-workaholism and quality of life.

Keywords: training-workaholism, health-promoting lifestyle, quality of life

INTRODUCTION

Research Background and Motivation

It is known from flow theory that, once an individual thoroughly focuses on one subject, the process of concentration may bring joy and satisfaction and the individual may devote considerable time and energy, just as artists and athletes concentrate on their performances and sports events (Csikszentmihalyi, 1997). As one completely focuses and finds interest in his or her work, the individual may gain a good flow experience and perform well. Since work enthusiasm is one of the work feelings in flow experience, it is one positive emotion which can be used to predict an individual’s achievement and performance (Seligman & Csikszentmihalyi, 2000). However, according to Spence and Robbins (1992), workaholism involves two categories of people: work-enthusiasts and non-enthusiastic workaholics. Work-enthusiasts refer to individuals enjoying their work and do not feel particularly driven or compelled, while non-enthusiastic workaholics are individuals who are highly involved in their work but nevertheless lack of joy and feel compelled. Non-enthusiastic workaholism may harm one’s physical and mental health and even affect companions and working partners negatively, as well as causes familial and social problems (Chamberlin & Zang, 2009; Samela-Aro & Nurmi, 2004), also, reduces work production (Liang & Chu, 2009).

According to the points made above, it was found that the key encouraging more practice time is enthusiasm – which motivates an individual to achieve higher achievement (Ericsson, Krampe, & Tesch-Römer, 1993). Yet, some athletes blurred the boundary between work and private life, which caused workaholism to occur. Once an athlete was over worked in training, such attitude may cause a less satisfactory quality of life. Quality of life is not only an objective feeling of one’s well-being but an index to personal mental hygiene, which can be reflected on aspects of work, leisure, diet, sleep, salary, social
interaction, sex, family, environment, and self-acceptance (Blau, 1977). In other words, an athlete’s training-workaholism may hinder the qualities of leisure, a balanced diet, a good sleep, or well social interaction; it can be even said that other than work, there is no ground for the discussion of quality of life. Workaholism or concentrating too much on work impacts life satisfaction (Bonebright, Clay, & Ankenmann, 2000; Aziz & Zickar, 2006), while perfectionism even impinges the balance between work and private life and the well-being of health and life (Flaxman, Menard, Bond, & Kinman, 2012). Thus, the study’s speculation was that training-workaholism of an athlete affects quality of life. Many studies claimed that genders and workaholism are not related to each other (Aziz & Cunningham, 2008; Rosso & Waters, 2006), and no significant difference between workaholism and quality of life (Alimohammadi & Saeedi, 2014). But, according to Piotrowski and Vodanovich (2006), workaholism has negative impact toward physical and psychological tranquility, and such an impact affects family and peer relationship, eventually leads to unsatisfied quality of life. Therefore, this research aimed to inspect training-workaholism and its impact on quality of life in athletes.

Since athletes ought to maintain their physical and mental health in order to maintain a fine state, progress a smooth training process and performance as expected, thus to enhance athlete’s health is an issue which correlates with health-promoting lifestyle. Health-promoting lifestyle refers to physical and mental health as well as interpersonal and environmental interactions. Research of Wang et al. (2006) and Chen, Chang, Chang and Sung (2011) suggested a positive effect of health-promoting lifestyle to quality of life and was significantly related to the results of study of Kocoglu and Akin (2009). It was thus known that an athlete with good health-promoting lifestyle and quality of life is apt to perform better, and that the former is indeed an affecting factor to the later. Tol, Tavassoi, Shariferad and Shojaezezadeh (2013) pointed out that there was no significant difference between college students’ gender and health-promoting lifestyle; but, significant difference were found between health-promoting lifestyle and quality of life, for instance, in stress management aspect. Therefore, this study aimed to understand the effects of health-promoting lifestyle and its impact on their quality of life in athletes.

Nevertheless, as mentioned, quality of life involves objective feelings; as athletes considering the training process endurable, they may not realize the impact of training-workaholism, which may hinder them from achieving their goals. Therefore, athletes should beware if their training enthusiasm causes them to become stressful or prevents them from leisure, a balanced diet, or enough sleep. If athletes are unable to realize such impact then it will be an obstruction to both physical and mental health. Research has shown that workaholism may be the reason of negative social interaction and emotional problems (Sussman, 2012), and health-promoting lifestyle correlates to quality of life. Other studies point out that sleeping problems and fatigue caused by workaholism were not neutralized by good health-promoting lifestyle (Kubota, Shimazu, Kawakami, Takahashi, Nakata, & Schaufeli, 2010) may lead to a worsening of social and role function (McMillan & O’Driscoll, 2004), high blood pressure (Spence & Robbins, 1992), depression (Shimazu, Schaufeli, & Taris, 2010), body pains (Shimazu & Schaufeli, 2009), negative social relation and other health issues (Sussman, 2012). From mentioned studies, we can see that workaholism greatly influence quality of life, and health-promoting lifestyle and quality of life are closely related. Thus the study used health-promoting lifestyle as mediating variables in order to identify its effects. The present study aimed to bring attention to health promotion besides merely training and it will be of great value for athletes to take notice of their lifestyle and quality of life and thus have a better performance.
Purpose of the Study

The goal of the study was to examine the prediction of athletes’ training-workaholism and health-promoting lifestyle to quality of life and the influence of health-promoting lifestyle to training-workaholism and quality of life.

METHOD

Participants

After categorical analysis, factor analysis, and reliability analysis the formal questionnaire were formed: the participants consisted of departments of athletic performance of three colleges and universities from the northern part of Taiwan and one from the central region. 540 questionnaires were returned with 492 of them valid.

Measures

Training-workaholism Scale

The Training-Workaholism Scale used in the study was based on Liu’s (2010) workaholism scale according to Spence and Robbins (1992) and developed into training-workaholism scale; the emphasis of the scale was to discover the circumstances of training enthusiasm among athletes and used three constructs to identify: training involvement, training drive, and training enjoyment. It was found that the Critical Ratio (CR) value for the 16 questions was significantly different and correlated to the overall score, which indicated its discrimination. The study used principle factor in exploratory factor analysis to analyze the data: the chi square ($\chi^2$) for Barlett’s test for sphericity was 3690.26 and the KMO was .92, which indicated that the scale was fit for factor analysis. The results for total variance explained for the three factors were 60.46%; regarding reliability analysis, subscale Cronabach’s $\alpha = .70-.89$ and full-scale Cronabach’s $\alpha = .92$, which indicated that the scale had both validity and reliability. The scale was constructed as three subscales: the first, training involvement; the second, training drive; the third, training enjoyment.

Health-Promoting Lifestyle Scale

The Health-Promoting Lifestyle Scale used in the study was based on the shorter form of the Chinese health-promoting lifestyle profile by Wei and Lu (2005), which was based on Walker, Sechrist and Pender (1987). To understand the athletes’ situations in health-promoting lifestyle, six constructs were used for evaluation: self-actualization, health responsibility, stress management, interpersonal support, nutrition, and exercise. It was found that the CR value for the 24 questions was significantly different and correlated to the overall score, which indicated its discriminability. The study used principle factor in exploratory factor analysis to analyze the data: the chi square($\chi^2$) for Barlett’s test for sphericity was 3163.18 and the KMO was .92, which indicates that the scale was fit for factor analysis. The results for total variance explained for the six factors were 60.52%; regarding reliability analysis, subscale Cronabach’s $\alpha = .75-.82$ and full-scale Cronabach’s $\alpha = .92$. The scale analyzed the six constructs and was constructed as four subscales: the first factor is interpersonal support and stress management; the second, nutrition; the third, self-actualization, and the fourth, health responsibility.

Quality of Life Scale

The Quality of Life Scale used in present study was revised and adopted from World Health Organization’s Quality of Life survey (- Brief Version, Taiwan version) (Yao, 2002) in order to identify
the circumstances of athletes’ quality of life. The evaluation was done by evaluating four constructs – physical health, mental health, social relations, and environmental relations. It was found that the CR value for the 24 questions was significantly different and correlated to the overall score, which indicating its discriminability. The study used principle factor in exploratory factor analysis to analyze the data: the chi square($\chi^2$) for Barlett’s test for sphericity was 3072.20 and the KMO was .91, which indicates that the scale was fit for factor analysis. The results for total variance explained for the four constructs were 50.82%; regarding reliability analysis, subscale Cronabach’s $\alpha$ = .76-.82 and full-scale Cronabach’s $\alpha$ = .91. The scale analyzed the four constructs and was constructed as three subscales: the first, social relations and mental health; the second, physical health and environmental relations; the third, environmental relations and social relations.

**Background Variables**

The background variables of the study were athletes’ gender, age, grade, and rank.

**Data Analysis**

All the data were statistically analyzed through SPSS 19.0 software. The methods include: multiple stepwise regression analysis, Pearson's product-moment correlation coefficient analysis, multiple hierarchical regression analysis. $\alpha=.05$ was set for the test for significance of this study.

**RESULTS**

**Prediction of training-workaholism to quality of life**

Using multiple stepwise regression analysis to analyze the three constructs, it was found (Table 1) that involvement and enjoyment in training-workaholism were significantly different, $R^2 = .14$ indicates that the regression model efficiently presented the amount of explanation of variation as 14%. Training involvement had the most explanatory power ($\Delta R$) at 8%.

<table>
<thead>
<tr>
<th>Variable</th>
<th>$R$</th>
<th>$R^2$</th>
<th>$\Delta R$</th>
<th>$\beta$</th>
<th>$\Delta F$</th>
<th>$F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training enjoyment</td>
<td>.25</td>
<td>.06</td>
<td>.06</td>
<td>.35</td>
<td>33.38*</td>
<td>33.38*</td>
</tr>
<tr>
<td>Training involvement</td>
<td>.37</td>
<td>.14</td>
<td>.08</td>
<td>-.29</td>
<td>41.17*</td>
<td>38.64*</td>
</tr>
</tbody>
</table>

*p<.05

**Prediction of health-promoting lifestyle to quality of life**

As all four constructs undergo multiple stepwise regression analysis, it was found that self-actualization, interpersonal support and stress management in health-promoting lifestyle were significantly different (Table 2), $R^2 = .27$ indicates that the regression model efficiently presented the amount of explanation of variation as 27%. Self-actualization had the most explanatory power ($\Delta R$) at 23%.

<table>
<thead>
<tr>
<th>Variable</th>
<th>$R$</th>
<th>$R^2$</th>
<th>$\Delta R$</th>
<th>$\beta$</th>
<th>$\Delta F$</th>
<th>$F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-actualization</td>
<td>.48</td>
<td>.23</td>
<td>.23</td>
<td>.35</td>
<td>146.73*</td>
<td>146.73*</td>
</tr>
<tr>
<td>Interpersonal support and stress management</td>
<td>.52</td>
<td>.27</td>
<td>.04</td>
<td>.24</td>
<td>26.80*</td>
<td>90.63*</td>
</tr>
</tbody>
</table>

*p<.05
Mediating Effect Test of Health-promoting Lifestyle

Correlation test was performed among gender, grade/level, sports ranking, quality of life, health-promoting lifestyle, and training-workaholism. The results were shown as Table 3: gender was significantly correlated with health-promoting lifestyle and training-workaholism, while quality of life was significantly correlated with health-promoting lifestyle and training-workaholism.

Hierarchical regression analysis was performed by placing gender as the controlled variable, training-workaholism as the independent variable, and health-promoting lifestyle as the dependent variable. In Table 4, it is known that the sum of squares (R²) of health-promoting lifestyle rose from .02 to .19 (ΔR = .17), and ΔF indicated significance, R² significance rose.

Table 3: Correlation Matrix of Basic Information Variables, Quality of Life, Health-promoting Lifestyle, Training-Workaholism

<table>
<thead>
<tr>
<th></th>
<th>Gender</th>
<th>Grade/Level</th>
<th>Sports rankings</th>
<th>Quality of life</th>
<th>Health-promoting lifestyle</th>
<th>Training-workaholism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade/Level</td>
<td>-.01</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sports rankings</td>
<td>-.18*</td>
<td>-.33*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality of life</td>
<td>-.06</td>
<td>.04</td>
<td>-.02</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health-promoting lifestyle</td>
<td>-.14*</td>
<td>.06</td>
<td>-.05</td>
<td>.48*</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Training-workaholism</td>
<td>-.22*</td>
<td>-.05</td>
<td>-.05</td>
<td>.15*</td>
<td>.44*</td>
<td>1</td>
</tr>
</tbody>
</table>

*p < .05

Table 4: Hierarchical Regression Analysis of Training-Workaholism to Health-promoting Lifestyle

<table>
<thead>
<tr>
<th></th>
<th>R²</th>
<th>ΔR</th>
<th>F</th>
<th>ΔF</th>
<th>β(1)</th>
<th>β(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level one variable</td>
<td>.02</td>
<td>.02</td>
<td>9.31*</td>
<td>9.31*</td>
<td>-.14*</td>
<td>-.04</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level two variable</td>
<td>.19</td>
<td>.17</td>
<td>57.61*</td>
<td>103.96*</td>
<td></td>
<td>.43*</td>
</tr>
<tr>
<td>Training-workaholism</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05; dependent variable: health-promoting lifestyle; β(1): Before applying training-workaholism; β(2): After applying training-workaholism

Hierarchical regression analysis was performed by placing gender as the controlled variable, training-workaholism and health-promoting lifestyle as independent variables and quality of life as the dependent variable. It is discovered that by applying training-workaholism, health-promoting lifestyle would make significant difference to quality of life (Table 5). The explanatory power was 24%; after applying health-promoting lifestyle, the sum of squares (R²) of quality of life rose from .02 to .24, while ΔR = .22 and ΔF indicated significance, R² significance rose.

Table 5: Hierarchical Regression Analysis of Training-Workaholism and Health-promoting Lifestyle to Quality of Life

<table>
<thead>
<tr>
<th></th>
<th>R²</th>
<th>ΔR</th>
<th>F</th>
<th>ΔF</th>
<th>β(1)</th>
<th>β(2)</th>
<th>β(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level one variable</td>
<td>.01</td>
<td>.01</td>
<td>1.84</td>
<td>1.84</td>
<td>-.06</td>
<td>-.03</td>
<td>-.01</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level two variable</td>
<td>.02</td>
<td>.02</td>
<td>6.06*</td>
<td>10.25*</td>
<td>.15*</td>
<td>-.07</td>
<td></td>
</tr>
<tr>
<td>Training-workaholism</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level three variable</td>
<td>.24</td>
<td>.22</td>
<td>50.70*</td>
<td>136.60*</td>
<td></td>
<td></td>
<td>.51*</td>
</tr>
</tbody>
</table>

*p < .05; dependent variable: quality of life; β(1): Before applying training-workaholism; β(2): Before applying health-promoting lifestyle; β(3): After applying health-promoting lifestyle
DISCUSSION

Prediction Analysis of Athletes’ Training-Workaholism to Quality of Life

Regarding training-workaholism, the study used constructs, e.g. training involvement, drive, and enjoyment, to conduct predictive analysis on quality of life. It was found that training involvement had the best predictability while training enjoyment scored second. Regarding standard regression coefficients, training enjoyment ($\beta=.35, p<.05$) was positive, which meant that its impact to quality of life was positive; training involvement ($\beta=-.29, p<.05$) was negative, which indicated that the impact to quality of life was negative as well. The study’s finding was similar to the research findings of Burke and Matthiesen (2004) and Andreassen, Ursin and Eriksen (2007) that workaholism would worsen the physical and psychological aspects of quality of life. The finding was also similar to that of Shimazu, Schaufeli, Kubot and Kawakami (2012) that workaholism would cause an increase in ill-health and a decrease in life satisfaction. The study also discovered that as athletes’ training enjoyment increased, quality of life also increased, but training should not be excessively involved in their lives lest it affects quality of life. In other words, training enjoyment improved training but involvement might hinder a better performance.

In training involvement, this study discovered that athletes obtain no personal time except training and training-related activities; regardless of training or non-training time, athletes tend to use their time on enforcing their training plans. Therefore, this study regards it reasonable that athletes receive stress from performance opportunities and achievements, which eventually cause more stress, responsibility and obligation; also because the lack of scheduled time to complete planned training, athletes eventually use their leisure or non-training time to complete the training, and eventually it will blur the boundary of their roles, works, training, and personal life. From the study conducted by Thomas, Sorensen and Feldman (2007), it was found that workaholism has workers’ role expectation to be unclear, which may also lead to a blurred boundary of work and personal life. For athletes and training, athletes overly involved in training and performance can also be characterized as workaholism. Such a term as workaholism has a negative nature in meaning, since it is recognized as an extremely hardworking person with extreme enthusiasm; so from the definition and characteristics of workholism, we are able to know that if athletes have workaholism in training, it will negatively affect their quality of life, since their personal time/life is occupied by training.

As for athletes’ training drive, the study discovered that athletes may still feel obligated to train even they don’t like it; they force themselves to train without stop thinking about training in their leisure time. But from the results, it was found that training drive has no significance in prediction toward quality of life, which means training-workaholism has less negative training adaptation. Even though negative training adaptation was not found significantly related to training-workaholism, it still needs prevention (Seligman, 2002). According to the results of this study, athletes have to raise their positive attitudes and emotions in order to enhance the feeling of happiness and well-being, also decrease depression (Cohn & Fredrickson, 2009); at the meanwhile, it’s also important to raise their active level of minds (Masahiro, Taeko, Tsuyoshi, Toshihiro, & Hideki, 2008), satisfaction of quality of life (Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008), and the feeling of connection with the society (Mauss et al., 2011). In physical health, many had studies pointed out that having a positive mind and emotions promotes body health and restores body back to a healthier state from negative impact caused by negative emotions (Cohn & Fredrickson, 2009). Although, athletes in our study do not receive negative impact from training drive, but it is still important to raise their physical and psychological health, satisfaction of life and interpersonal relationship.
For training enjoyment, this study discovered that athletes regard training as a kind of enjoyment, not work. This may be because the sport they devote themselves to be the one they love or like, therefore they often train more than they should. Based on our findings, such training-workaholism was caused by positive experience and emotions emerged in time of training, such increase of positive training is helpful to extend thinking capacity and construct personal resources. Our study regards training enjoyment in relation with the broaden-and-build theory of Fredrickson (1998); Fredrickson’s broaden-and-build theory assuming positive emotions contain two main functions: broaden and build. “Broaden” means when people experience positive emotions, such experience is able to help them to extend their capacity of thinking and expand their range of actions; “build” means when repeatedly experiencing positive emotions, it could have accumulative outcome on personal resources in any kind (Cohn & Fredrickson, 2009; Fredrickson, 2004). Thus, as athletes adjust their emotions and increase training enjoyment, it definitely increase more positive emotions and positive thinking, accumulate more psychological and personal resources, and won’t be having two minds in training and performance.

**Prediction Analysis of Athletes’ Health-promoting Lifestyle to Quality of Life**

Regarding health-promoting lifestyle, the study used constructs, e.g. interpersonal support and stress management, nutrition, self-actualization, and health responsibility, to conduct a predictive analysis on quality of life. It was found that self-actualization had the best predictability while interpersonal support and stress management scored second. Regarding standard regression coefficients, self-actualization (β=.35, p<.05) and interpersonal support and stress management (β=.24, p<.05) were positive, which meant that their impact to quality of life were positive. The study’s finding was similar to the research findings of Sabbah, Sabbah, Khamis, Sabbah, and Droubi (2013) that health-promoting lifestyle improved college students’ health-related quality of life. The finding was also similar to that of Mohamadian et al. (2011) that health-promoting lifestyle improved high school students’ health-related quality of life. The study’s finding was the same as well to that of Senol, Ünalan, Soyuer, and Argün (2014) that self-actualization could most predict health-related quality of life. The study also discovered that as athletes’ motivation for self-actualization increased, interpersonal support were better and stress relief more adequate, quality of life would also increase and become better. In other words, self-actualization, interpersonal relations, and stress affected and improved quality of life.

In self-actualization, the study found that athletes think that there are multiple life-long goals to achieve in life, and being hopeful to the future; also, fulfill oneself with enjoyment and challenges is an important thing to do. The result of this study indicates that the significance in the relationship of self-actualization and quality of life may infer that athletes have a strong responsibility of their own training, and it leads to a strong self-actualization. This study discovered that self-actualization has the strongest prediction toward quality of life, which corresponds to the claims of Walker, Sechrist and Pender (1987). The study has expanded self-actualization and health-promoting lifestyle to a meaningful extent, and focused more on interpersonal and psychological aspect, simultaneously promoting overall physical and psychological quality of life, which also corresponds to Yao (2002).

Regarding interpersonal support and stress management, the study found that athletes consider many things that are important to personal life and relationship, such as maintaining meaningful interpersonal relationships and friendships, caring for others, thinking of things that would make one happy, and using constructive ways to express feelings and thoughts. Interpersonal support and stress management were found significantly related to quality of life, which correspond to the definition given by Joint Committee on Health Education and Promotion Terminology (2001) that health-promoting lifestyle obtains the function of promoting health and raise personal quality of life.
About the prediction of athletes’ health responsibility, nutrition, and exercise toward quality of life all have failed to achieve significance. This means that athletes’ health responsibility, nutrition, and exercise have no effects on quality of life. In health responsibility, such result may indicate that athletes may require less advice and recommendation from medical professionals. In nutrition, the result indicates that athletes careless about foods in daily take-in. In exercise, the result infers that athletes may not constantly attend to different kinds of sport besides their own profession.

**Mediating Effect of Health-promoting Lifestyle**

Based on the results of the analysis, it was discovered that training-workaholism, health-promoting lifestyle, and quality of life were significantly correlated, thus health-promoting lifestyle may have mediating effect to the other two. According to Baron and Kenny (1986), mediating effect should satisfy four requirements: independent variable and dependent variable should be significantly correlated; independent variable and mediating variable should be significantly correlated; mediating variable and dependent variable should be significantly correlated; regression coefficients of independent variable and dependent variable would decrease significantly. If the coefficients dropped to 0, it was a full mediating effect; if not, it would be a partial mediating effect. Thus, the effect of predictive variable to outcome variable was often discovered through mediating variable (Wen, Chang, Hau, & Liu, 2004). The study used gender (in basic information) as the controlled variable and found that only gender would have significant difference to training-workaholism and health-promoting lifestyle. However, gender was not the main variable for the study, therefore it should be considered level one variable among the controlled variables. The study thus found training-workaholism was significantly different to quality of life; β = .15, which showed that the independent variable was significantly correlated to the dependent variable. Training-workaholism was significantly different to health-promoting lifestyle; β = .43 indicated that the independent variable was significantly correlated to the mediating variable. As training-workaholism and health-promoting lifestyle both became the predicting variables and the mediating variable was included in the regression analysis on quality of life, β = .51, which indicated that the mediating variable was significantly correlated to the dependent variable. After adding health-promoting lifestyle as the mediating variable, the predictive power of training-workaholism decreased from .15 to -.07 (not significant) and the explanatory power (R²) increased from .02 to .24 (significant), which matched the requirement that regression coefficients of independent variable and dependent variable would decrease significantly. The results of the hierarchical regression analysis indicated that the regression coefficient of training-workaholism to quality of life decreased while the explanatory power increased after applying health-promoting lifestyle as the mediating variable. The research results above all matched the four requirements. Thus, it could be concluded that training-workaholism could impact quality of life through the full mediating effect of health-promoting lifestyle.

The study used health-promoting lifestyle as the mediating variable. According to Pender (1987), health promoting behaviors are factors of healthy lifestyle, and such health promoting behaviors in personal health lifestyle also regarded as positive lifestyle which making a person to believe he/she has the potential to live a healthy life. This study agrees Pender’s higher self-actualization and health in health promoting mode, also positive physical, psychological, interpersonal relationship, and environmental factors (Pender, 1996).

The study discovered that athletes’ training-workaholism, health-promoting lifestyle and quality of life were correlated significantly, and it proven by verification that training-workaholism can affect quality of life with the mediating variable of health-promoting lifestyle. Such result has proven the
meaning of training-workaholism and corresponds to the definition of “workaholism” defined by Poter (1996), which was the “ignorance of other matters in life due to overly dedicated to work”. The results of this study correspond to Scott, Moore and Micell (1997) as well, which regards workaholism as spending a great amount of time on work or work-related activities, and thinking about work in non-working time. According to the definition of workaholism by Thomas, Sorensen and Feldman (2007), individuals obtaining these characteristics are considered workaholism: enjoying labor/working, addicting to work, and sacrificing a great amount of personal life and time on work; therefore, athletes should not be overly devoted to training. The findings of this research on training-workaholism also match to Burke (2001) on workaholism, long working hours and overly dedicated to works may have longer effect on working performance, which also has negative impacts on physical and psychological states, and negatively affects interpersonal relationship and friendship.

This study was using health-promoting lifestyle as mediating variable, and the results show that training-workaholism has significantly affected quality of life ($\beta$=.15), which corresponds to Piotrowski and Vodanovich (2006). And this study also discovered that training-workaholism significantly affected health-promoting lifestyle ($\beta$=.43) as well; and, as health-promoting lifestyle being the mediating variable, training-workaholism and health-promoting lifestyle significantly affected quality of life ($\beta$=.51), which is the new finding of this research.

From the results of the study, in order to finish training and complete the training plans, athletes should develop and keep good habits of health-promoting lifestyle, and maintain a good physical form with a peaceful state of mind as well. Therefore, how to promote athletes’ health has become an important issues, and such promotion of athletes’ health needs support from “health-promoting lifestyle”. Health-promoting lifestyle doesn’t only promote physical health, but also psychological health, interpersonal relationship and friendship, and proper interaction with the surrounding environment. Elite athlete also have a good quality of life, thus enable them to have the best conditions to perform their best in training and competition.

**CONCLUSION AND RECOMMENDATION**

The major discovery of the study was that training enjoyment and training involvement in training-workaholism scale, self-actualization and interpersonal support and stress management in health-promoting lifestyle were crucial factors that helped predicted athletes’ quality of life. Considering gender as the controlled variable, it was found that health-promoting lifestyle had a complete mediating effect between training-workaholism and quality of life. Therefore, professional coaches, school coaches and teachers should tackle upon athletes’ training enthusiasm to improve training process, lest athletes become overly involved. More importantly, we ought to recognize the fact that health-promoting lifestyle benefits quality of life, and that the former has impact on the latter and training-workaholism. Such a discovery marked an important factor in elevating athletes’ quality of life and training efficiency.

The participants of this research were athletes from different kinds of sports. We believe that it will be clearer to know and understand the commonalities and differences of each sport if we focus more on single sport. In this research, health-promoting lifestyle was found to be the mediating variable between training-workaholism and quality of life; but for training-workaholism and quality of life of athletes, there might be other mediating variables (e.g. leisure participation, leisure involvement and behaviors in health) that are able to meaningfully explain the process and progression of psychological mechanism in athletes mind, which regarded as researchable.
REFERENCES


