The Relationship between Mindfulness and Psychological Well-being and Coping Strategies with Stress among Female Basketball Athletes in Tehran

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Authors' contributions

This work was carried out in collaboration between both authors. Author ZF designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author SG designed the study and managed the analyses of the study. Both authors read and approved the final manuscripts.

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ABSTRACT

Introduction: The well-being and satisfaction with life are two indicators of mental health. The aim of this study was to evaluate the relationship between mindfulness and psychological well-being, and coping strategies with stress in female basketball athletes in Tehran.

Methods and Materials: Among all women basketball athletes in Tehran in 2016, two-hundred and fifty women were randomly selected. All samples completed Lazarus and Folkman coping strategies questionnaire, Ryff Psychological well-being Questionnaire and Freiburg Mindfulness Inventory. Data were analyzed using Pearson correlation and multiple regression in SPSS-22.
Results: The results confirmed the hypothesis of this study and suggested a significant positive relationship between the components of mindfulness and psychological well-being, and coping with stress strategies (p<0.01).

Conclusion: There was a significant positive relationship between components of mindfulness and psychological well-being, and coping strategies with stress.

Keywords: Mindfulness; psychological well-being; coping strategies with stress; female.

1. INTRODUCTION

Sport is considered as an activity with beneficial physical and mental effects. Sport would increase new neurons in hippocampus improving learning skill and memory [1] regular physical activity has a beneficial effect on health and neurological function protecting neurons from different harms. Sport and physical activities can increase learning speed, memory formation and cognitive performance [2].

Stress is body reaction against any environmental stressor either internal or external [3], that is along with cognitive, psychological and physiologic changes. Conducted studies have indicated that being exposure to stress has complicated effects on learning and memory. Existing literature in this field have presented different results. The obtained reports of researches indicate that stress can improve learning and memory [4,5].

Psychological well-being pattern has been presented by Ryff in past decade. According to this pattern, psychological well-being comprises six factors including self-acceptance (positive attitude toward oneself), positive relationship with others (intimate and close relationship with others and sympathy), self-autonomy (sense of independence and ability to encounter with social pressures), purposeful life (having goal in life), personal growth (sense of continued growth) and environment mastery (ability of person to manage the environment) [6].

Mindfulness is a skill that can reduce stress [7]. Mindfulness is a non-judgmental and present-based attention toward an experience considered by a person at a specific time; moreover, and this concept is related to moment-by-moment experiences and acceptance of them [8]. Another definition of mindfulness describes it as a technique that is combined with meditation to increase mind presence and non-judgmental acceptance of experiences [7]. Today, most research on the effects of mindfulness techniques on stress, mood, and other mental health problem and well-being has been conducted many interventions, including mindfulness-based stress reduction Kabat-Zinn, [9]. And mindfulness-based cognitive therapy [10].

Mindfulness is a skill derived from cognitive-behavioral treatments as well as important element of third generation of behavioral therapies [11]. All practices of mindfulness have been designed to increase attention of person toward his or her body. Since the important role of body in new interdisciplinary scopes such as medicine has been proved, mindfulness-based studies have emphasized on interaction between physical, cognitive and emotional processes [12]. Mindfulness techniques would facilitate decentralization of patients from negative emotions and thoughts [13]. Mindfulness-based interventions have multiple components such as mindfulness exercises, didactic instruction, and social support [14].

Mindfulness was used for patients who were suffering from chronic pain while it is used now to reduce stress, anxiety and depression [15]. The obtained results of studies indicate beneficial effects of mindfulness on reducing stress, anxiety and depression [16,17,18,19,20]. Many of other researches indicated effectiveness of mindfulness in reduction in stress level and improvement of immune system of body [21,22,23].

A study was carried out by Nejad Ahmadi and Moradi [24] to examine the relation between mindfulness, coping strategies, perceived stress and life quality of cancer patients. The obtained results of this study indicated that people with mindfulness would evaluate threatening situations of life through less stress and use more adoptive strategies to cope with stressful conditions.

The research of Witkiewitz et al. [25] indicated that mindfulness-based education was effective in reducing mental pressure, chronic pains,
depression, generalized anxiety disorder, post-
traumatic stress disorder and other similar
disorders.

According to the relationship between positive
role of mindfulness in psychological well-being,
life quality and stress reduction in different
mental disorders, this study has been conducted
to examine the relationship between
mindfulness, psychological well-being and coping
strategy with stress in female basketball athletes
in Tehran, Iran.

2. RESEARCH METHOD

This study is co relational type and statistical
population includes all female basketball athletes
in Tehran who have been exercising in all sport
centers during 2016 and 250 members were
chosen as sample size using random sampling
method. First, sample members filled in personal
letters of satisfaction then they filled out Coping
Strategies Questionnaires (CSQ) of Lazarus and
Folkman, Psychological well-being questionnaire
of Ryff and Freiburg Mindfulness Inventory. Data
were analyzed through statistical multi-variable
regression method and Pearson correlation
method.

3. RESEARCH TOOLS

3.1 Coping Inventory for Stressful
Situations (CISS)

This questionnaire was established by Endler &
Parker in 1990 in order to evaluate coping style
of people with their problems. This test has 48
items evaluating three styles of primary coping
including task-oriented coping, emotion-oriented
coping and avoidant coping. This questionnaire
is a self-report inventory and respondents should
respond within a five-point LIKERT scale (from
never (1) to always (5)). To examine reliability of
questionnaire of coping styles with stress among
students group, Cronbach’s alpha was used. The
obtained results were as follows: boys (0/92) and
girls (0/85) in terms of task-oriented coping; boys
(0/82) and girls (0/85) in terms of emotion-
oriented coping; boys (0/85) and girls (0/82) in
terms of avoidant coping. Validity coefficient of
inventory of stressful situations was obtained to a
high level using Cronbach’s alpha by Ghoreishi
in his study (quoted by Hajatihegi, 2000). Reliability of this questionnaire has benne proved
by many of conducted studies in Iran. Pearson
correlation coefficient was used to assess the
correlation between factors of coping with stress
inventory and the obtained results were as
follows: task-oriented (0/58), emotion-oriented
(0/55), and avoidant (0/93) [26].

3.2 Psychological Well-being Scale

This scale was designed by Ryff (1989) that
comprised six factors of autonomy, environment
mastery, personal growth, positive relations with
others, purpose in life and self-acceptance so
that the total score of these factors is calculated
as the score of psychological well-being. This
test is responded through a 6-point scale from
“strongly disagree” to “strongly agree” (1 to 6).
Among all of the questions, 44 questions are
directly scored and 40 questions are reversely
scored. This scale was implemented on a sample
with 321 members and reliability coefficient of
retest after six weeks on a sample with 117
members was obtained to 81% to 86% [12].
Bayani et al. [27], tested reliability of this scale in
Iran and measured its internal consistency using
Cronbach’s alpha. The obtained results were as
follows: environment mastery (77%), positive
relation with others (77%), personal growth
(78%), self-acceptance (71%), purpose in life
(70%) and self-autonomy (82%).

3.3 Freiburg Inventory

Kentucky Inventory of Mindfulness Skills (KIMS)
has been designed by Baer, Smith and Allen in
2004 [28]. This questionnaire includes 29 items
designed to measure four components of
mindfulness including observing, describing
without labeling, acting with awareness
(concentration) and accepting without judgment.
In Iran the short form of this scale has not
reliability and validity and we used the long form
of it. This inventory has been rated on a five-
point LIKERT scale ranging from rarely to
always. Its internal consistency has been
approved and alpha coefficient is in a range from
75/0 (non-judgmental) to 91/0 (describing).
Correlation between factors has been significant
within a range from 75/0 to 91/0 [29]. There have
been many conducted studies in Iran to evaluate
mental validity and reliability of this inventory and
correlation coefficients of FFMQ questionnaire in
Iranian sample were obtained to r=57/0 (related
to non-judgmental factor) and r=84/0 (observing
factor). On the other hand, the obtained alpha
coefficients were acceptable (a=55/0 for non-
judgmental accepting and a=83/0 for describing
factor) [29].
4. RESEARCH FINDINGS

Participants of this study included 250 members that 170 members of them were university students and the remained were educating in high school, age domain of respondents is 15-30, 70% of them were single and 30% were married, 15% were employed and 75% were students.

To describe variables and collected data of this study, indices of central tendency, dispersion and scores distribution were applied. At statistical analysis step, Pearson correlation method and multiple regression analysis were used to analyze data in accordance with the interval nature of measuring scale and hypotheses. Detailed results of these calculations are presented within two descriptive and data analysis parts.

According to Table 1 and distribution of participants' scores in variables of mindfulness (and four areas of observing, describing, acting with awareness and reaction), stress coping strategies and psychological well-being (and four elements of relations, purposeful life, self-autonomy and caring), different descriptive indices including mean, med and standard deviation that distribution of scores of sample group in measured variables (in accordance with insignificant difference between values of mean and med) is normal.

4.1 Main Hypothesis

There is a significant relationship between mindfulness, psychological well-being and coping strategies among female basketball athletes in Tehran.

According to Table 2, the R² value is equal to (0/477); it means that 47/7 percent of variance (changes) of mindfulness variable is explained by four components of observing, describing, acting with awareness, reaction and well-being. In other words, 47/7 percent of observed dispersion in mindfulness variable is justified by the mentioned variables. The observed R-value (0/691) indicates that this linear regression model can be used for forecast. In addition, the calculated F value (23/001) is significant at confidence level of 99%. Therefore, there is a significant correlation between studied variables and mindfulness variable. Hence, there are enough evidences to accept main hypothesis. According to t value and Sig levels, it can be stated that only three variables of observing, acting with awareness and well-being have significant correlation with stress coping strategy.

4.1.1 Hypothesis 1

There is a significant relationship between mindfulness and coping strategy among female basketball athletes in Tehran.

According to Table 3, the R² value is equal to (0/344); it means that 34/4 percent of variance (changes) of variable of anxiety symptoms is explained by four areas of observing, describing, acting with awareness, reaction and stress coping strategy. In other words, 34/4 percent of observed dispersion in variable of stress coping strategy is justified by the mentioned variables. The observed R-value (0/587) indicates that this linear regression model can be used for forecast. In addition, the calculated F value (13/753) is significant at confidence level of 99%. Therefore, there is a significant correlation between studied variables and variable of coping strategy.

Table 1. Summary of relevant statistical indices to total scores of participants in variables of mindfulness and its 4 components, stress coping strategy and psychological well-being and its 4 components (N-250)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Components</th>
<th>Mean</th>
<th>Med</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mindfulness</td>
<td>Observing</td>
<td>93/13</td>
<td>96</td>
<td>14/99</td>
</tr>
<tr>
<td></td>
<td>Describing</td>
<td>83/06</td>
<td>84</td>
<td>15/96</td>
</tr>
<tr>
<td></td>
<td>Acting with awareness</td>
<td>116/82</td>
<td>120</td>
<td>25/42</td>
</tr>
<tr>
<td></td>
<td>Reaction (accepting)</td>
<td>46/20</td>
<td>48</td>
<td>9/25</td>
</tr>
<tr>
<td>Stress coping strategies</td>
<td>Stress coping strategies relations</td>
<td>30/54</td>
<td>31</td>
<td>6/31</td>
</tr>
<tr>
<td>Well-being</td>
<td>Purposeful life</td>
<td>12/10</td>
<td>11</td>
<td>4/97</td>
</tr>
<tr>
<td></td>
<td>Self-autonomy</td>
<td>11/60</td>
<td>11</td>
<td>4/03</td>
</tr>
<tr>
<td></td>
<td>Caring (personal growth)</td>
<td>9/53</td>
<td>8</td>
<td>4/28</td>
</tr>
<tr>
<td></td>
<td>Well-being (total score)</td>
<td>44/92</td>
<td>40</td>
<td>15/60</td>
</tr>
</tbody>
</table>
Table 2. Summarized regression coefficients

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>Standard error</th>
<th>T</th>
<th>Sig</th>
<th>Tolerance</th>
<th>VIF</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant number</td>
<td>117/848</td>
<td>-</td>
<td>15/572**</td>
<td>0/001</td>
<td>-</td>
<td>-</td>
<td>2/046</td>
</tr>
<tr>
<td>Observing</td>
<td>-0/222</td>
<td>-0/205</td>
<td>-2/678**</td>
<td>0/008</td>
<td>0/710</td>
<td>1/409</td>
<td></td>
</tr>
<tr>
<td>Describing</td>
<td>-0/024</td>
<td>-0/024</td>
<td>-0/307</td>
<td>0/759</td>
<td>0/664</td>
<td>1/506</td>
<td></td>
</tr>
<tr>
<td>Acting with awareness</td>
<td>-0/187</td>
<td>-0/299</td>
<td>-3/568**</td>
<td>0/001</td>
<td>0/588</td>
<td>1/702</td>
<td></td>
</tr>
<tr>
<td>Reaction</td>
<td>-0/164</td>
<td>-0/099</td>
<td>-1/280</td>
<td>0/203</td>
<td>0/700</td>
<td>1/428</td>
<td></td>
</tr>
<tr>
<td>Psychological well-being</td>
<td>-0/674</td>
<td>-0/275</td>
<td>-3/407**</td>
<td>0/001</td>
<td>0/638</td>
<td>1/568</td>
<td></td>
</tr>
</tbody>
</table>

**Significant at 0/01 confidence level

Table 3. Summarized regression coefficients

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>Standard error</th>
<th>T</th>
<th>Sig</th>
<th>Tolerance</th>
<th>VIF</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant number</td>
<td>31/520</td>
<td>-</td>
<td>11/765**</td>
<td>0/001</td>
<td>-</td>
<td>-</td>
<td>1/894</td>
</tr>
<tr>
<td>Observing</td>
<td>-0/067</td>
<td>-0/195</td>
<td>-2/336</td>
<td>0/021</td>
<td>0/717</td>
<td>1/394</td>
<td></td>
</tr>
<tr>
<td>Describing</td>
<td>-0/004</td>
<td>-0/012</td>
<td>-0/143</td>
<td>0/886</td>
<td>0/662</td>
<td>1/511</td>
<td></td>
</tr>
<tr>
<td>Acting with awareness</td>
<td>-0/066</td>
<td>-0/329</td>
<td>-3/569**</td>
<td>0/001</td>
<td>0/589</td>
<td>1/697</td>
<td></td>
</tr>
<tr>
<td>Reaction</td>
<td>-0/020</td>
<td>-0/037</td>
<td>-0/443</td>
<td>0/659</td>
<td>0/716</td>
<td>1/396</td>
<td></td>
</tr>
<tr>
<td>Psychological well-being</td>
<td>-0/156</td>
<td>-0/198</td>
<td>-2/242*</td>
<td>0/027</td>
<td>0/643</td>
<td>5/541</td>
<td></td>
</tr>
</tbody>
</table>

**Significant at 0/01 confidence level; * significant at 0/05

R=0/587; R²=0/344; Adjusted R²=0/316; F=13/753**

Table 4. Summarized regression coefficients

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>Standard error</th>
<th>T</th>
<th>Sig</th>
<th>Tolerance</th>
<th>VIF</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant number</td>
<td>27/727</td>
<td>-</td>
<td>12/943**</td>
<td>0/001</td>
<td>-</td>
<td>-</td>
<td>2/003</td>
</tr>
<tr>
<td>Relations</td>
<td>-0/038</td>
<td>-0/135</td>
<td>-1/637</td>
<td>0/104</td>
<td>0/714</td>
<td>1/400</td>
<td></td>
</tr>
<tr>
<td>Purposeful life</td>
<td>-0/005</td>
<td>-0/020</td>
<td>-0/239</td>
<td>0/812</td>
<td>0/663</td>
<td>1/508</td>
<td></td>
</tr>
<tr>
<td>Self-autonomy</td>
<td>-0/033</td>
<td>-0/202</td>
<td>-2/229*</td>
<td>0/028</td>
<td>0/591</td>
<td>1/692</td>
<td></td>
</tr>
<tr>
<td>Caring</td>
<td>-0/029</td>
<td>-0/066</td>
<td>-0/801</td>
<td>0/424</td>
<td>0/702</td>
<td>1/424</td>
<td></td>
</tr>
</tbody>
</table>

**Significant at 0/01 confidence level; * significant at 0/05

R=0/610; R²=0/372; Adjusted R²=0/348; F=15/390**

4.1.2 Hypothesis 2

There is a significant relationship between psychological well-being and coping strategy among female basketball athletes in Tehran.

According to Table 2, the R² value is equal to (0/372); it means that 37/2 percent of variance (changes) of symptoms of stress coping strategy is explained by four areas of relations, caring, purposeful life, and self-autonomy. In other words, 37/2 percent of observed dispersion in variable of coping strategy is justified by the mentioned variables. The observed R-value (0/610) indicates that this linear regression model can be used for forecast. In addition, the calculated F value (15/390) is significant at confidence level of 99%. Therefore, there is a significant correlation between studied variables and variable of coping strategy. Hence, there are enough evidences to accept hypothesis 2.

5. DISCUSSION AND CONCLUSION

Today, recent researches showed that mindfulness itself has many positive well-being consequences. For example, Brown and Ryan [30] found that both trait and state mindfulness predicted lower levels of negative affect over 2- and 3-week periods in their adults samples. Also another researchers found that increases in mindfulness (MBSR training) were related to declines in anxiety, mood disorders, and other poor psychological well-being [30, 31]. Also another study showed the relation between more adaptive stress responses, health coping strategies and well-being with mindfulness. Implications for the role of mindfulness in stress and well-being are discussed [32].

According to the obtained results of this study, there is a positive significant relationship between components of mindfulness,
psychological well-being and stress coping strategy. These results are coordinated with results of conducted study by Habibi and hanasabzade [33] under the title of “effectiveness of mindfulness-based art-therapy on depression, anxiety, stress, and life quality among menopausal women” and the obtained results of this study indicated that mindfulness-based art-therapy could reduce depression and stress of test group and could increase life quality of them. Findings of present study are matched with obtained results of conducted study by Nejad Ahmadi and Moradi [24] with subject of the relation between mindfulness, coping strategies, perceived stress and life quality of cancer patients indicating that people with mindfulness would evaluate threatening situations of life through less stress and use more adoptive strategies to cope with stressful conditions. The obtained results of present study are coordinated with results of conducted study by Sadat Kazemi [34] under the title of “effectiveness of training mindfulness-based cognitive strategies on reducing post-traumatic stress disorder, decreasing psychological problems of wives or husbands of test group, decreasing intrusive thoughts and imagines, reducing stimulating avoidance responses and reducing symptoms of depression, anxiety and stress.

The obtained results of this study have been matched with results of conducted study by Wikiewitz et al [25] about the effect of mindfulness-based education on reducing mental pressure, chronic pains, anxiety, depression, generalized anxiety disorder, post-traumatic stress disorder.

The results of this study are matched with obtained results of conducted study by Ghasempoor et al. [35] about psychological well-being among athlete and non-athlete students and indicated that total psychological well-being of athlete students (86/81±89/14) was significantly more than non-athlete students (22/9±13/76) (P<001/0). The obtained findings of this study have been also coordinated with findings of studies conducted by [16,17] Masudatali [18] McManus et al. [19] and Morone et al. [20] about effectiveness of mindfulness on reducing stress, anxiety and depression; [20] and with results of conducted studies by Monti et al. [21]. Carlson et al. [22] about effectiveness of mindfulness in reducing stress levels and improvement of immune system of body [21,22,23].

The findings indicated that there was a positive significant relationship between components of mindfulness, psychological well-being, coping strategies, and stress; therefore, it would be possible to promote mental health and life quality of people especially athletes using mindfulness techniques in order to reduce their stress and psychological well-being. This results is congruent with Kent, Smoski and Robins research [23]. They concluded: “We conclude that mindfulness brings various positive psychological effects, including increased subjective well-being, reduced psychological problems and emotional health, and improved behavioral regulation [36].

We propose some strategies to increase psychological well-being and coping strategies in order to recognize mindfulness, carrying out large-scale researches to study situation of two genders and presenting suitable educational solutions and programs to increase mindfulness and well-being of youth.

CONSENT
It is no applicable.

Ethical Approval
It is no applicable.

COMPETING INTERESTS
Authors have declared that no competing interests exist.

REFERENCES


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