

Metacognition, Mindfulness, and Spiritual Well-being in Gifted High School Students

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Abstract

Background and Objectives: Gifted students are more sensitive to interpersonal conflicts and experience more self-alienation and mental pressure due to their cognitive abilities. The aim of the current study was to investigate the relationship among meta-cognition, mindfulness, and spiritual well-being in gifted high school students.

Methods: This study was conducted on 144 gifted high school students in Tabriz. The study population was selected through systematic random sampling method. Data collection was performed using the meta-cognition questionnaire developed by Wells, Five Facet Mindfulness Questionnaire, and spiritual well-being questionnaire by Ellison and Paloutzian.

Results: According to the results, mindfulness had a significant and positive relationship with spiritual well-being ($r=0.31$). However, no significant relationship was observed between meta-cognition and spiritual well-being. The results of the stepwise regression analyses showed that non-judgement determined about 6% ($R^2=0.06$) of spiritual well-being variance, and positive beliefs about worry predicted 4% ($R^2=0.04$) of the mindfulness variance.

Conclusion: Based on the findings, it can be concluded that out of the meta-cognition components, the positive beliefs about worry were influential in the determination of mindfulness. Furthermore, non-judgment was found to play a fundamental role in determining spiritual well-being among the components of mindfulness.

Keywords: Metacognition, Mindfulness, Spiritual well-being, Gifted Adolescents.

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Introduction

Gifted children have excellent performance due to their brilliant talents. These children obtain tangible success in one of the following fields: general mental ability, exclusive academic aptitude, creative thinking, leadership ability, visual and performing arts, as well as motor and mental abilities (1).

Considering the difficulties of the gifted students and their spiritual sensitivity, it seems that coping solutions, especially spiritual well-being, can be effective in the elimination or mitigation of the effects of stressful factors and improvement of their psychological health. Preuss and Dubow (2) showed that gifted students use spiritual well-being more than their normal counterparts. Furthermore, Ellison (3) believes that spiritual well-being involves mental and social factors, along with a

religious factor (3).

Today, most of the studies are focused on the efficiency of mindfulness exercises in promoting well-being, have reported almost positive results in this regard (4). Mindfulness is referred to the direction of attention to the present in an exclusive, organized, and non-judgmental way (5). Mindfulness is a way of better living, healing pains, and enriching and giving meaning to life (6). According to Baer et al., mindfulness consists of five facets, namely observing, describing, acting with awareness, non-judging, and non-reactivity (4). In a study conducted by Wallace and Shapiro (7) on mental balance and well-being, mindfulness was reported to lead to the development of spirituality in a long run. Accordingly, they observed a direct relationship between mindfulness and spiritual

well-being. Carmody et al. (8) also showed that the enhancement of mindfulness trait was related to the improvement of spirituality, while the reduction of mindfulness and spirituality was associated with the mitigation of psychological disorders (8). Moreover, Shapiro (9) indicated that mindfulness can not only influence well-being, spirituality, and health, but also predict these three variables positively and significantly (9).

Awareness of one's knowledge is a necessary condition for its recognition and organization. Studies have shown that awareness has a strong relationship with one's cognitive knowledge. Awareness of one's recognition does not necessarily mean organizing it to a satisfying level as can be seen in anxiety disorders (10).

Meta-cognition is ascribed to one's knowledge about cognitive processes and products or every other related thing, such as the characteristics associated with data or information learning (11). Based on the majority of the research findings, meta-cognitive skills and strategies are instructable (e.g.,12). Accordingly, many plans have been considered to improve the meta-cognitive strategies and abilities of gifted students.

Wells (13) developed the self-regulation executive functional model, which in addition to theoretical determination of emotional disorders, facilitates interesting predictions about other disorders. Moreover, training mindfulness has been revealed to have favorable effects on well-being in the literature (14). The improvement of mindfulness is accompanied with psychological well-being, agreement, openness, awareness, and reduction of pain symptoms. Mindful individuals are more able to recognize, manage, and solve daily problems (15).

Various studies have addressed the role of meta-cognitive strategies in mental disorders (16). Research has shown that meta-cognitive strategies may not only help the people adapt to the needs and threats of life, but also contribute to well-being (17). According to the findings obtained by Irak and Tosun (18), Corcoran and Segal (19), Brent (20), and Toneatto (21, 22), it can be concluded that

paying attention to the importance of increased mindfulness in students facilitates the achievement of one's dominance over his/her processing way. In addition, the enhancement of planning power in an individual from the initial years can play a major role in his/her mental health and spiritual well-being in the coming years.

Gifted students are more sensitive to interpersonal conflicts and experience more self-alienation and mental pressure due to their cognitive abilities (23). However, to the best of our knowledge, no research has been conducted in this area. On the other hand, mindfulness can improve spirituality through the establishment of mind-body connection and cognitive-emotional self-regulation mechanisms.

These mechanisms are especially important in gifted students because these students have high levels of information processing capability that can be helpful in mind-body connection and self-regulation. They also have high levels of meta-cognitive processing ability that can directly improve living in the moment and mindfulness. Nonetheless, the relationship among meta-cognition, mindfulness, and spiritual well-being in gifted students has not been clearly identified yet.

Regarding this, the present study is of fundamental importance to the field owing to two reasons:

1) There have been many studies investigating meta-cognition among students; however, there is no research examining the relationship between meta-cognition and spiritual well-being in gifted children. Therefore, this relationship has remained unclear in this population.

2) Mindfulness is an important factor in spirituality and spiritual well-being, and research has shown the relationship between mindfulness and spiritual well-being. Nevertheless, the relationship between mindfulness and spirituality well-being in gifted students is not specific. With this background in mind, the present study was conducted with the aim of investigating the relationship among meta-cognition,

mindfulness, and spiritual well-being in gifted high school students.

Methods

This correlational, descriptive, and retrospective study was conducted on 160 gifted high schools students in Tabriz, Iran. According to Stevens (24), in the regression studies, 15-20 participants are needed in ratio of each predictor variable. Considering that our research is correlational and regarding that, we have 10 predictor variables, 150 samples were needed. However, the sample size was increased to 160 cases in order to increase the validity of the research.

The sampling was performed by referring to the gifted high schools of Tabriz city and selecting the subjects. The data were collected using the meta-cognition questionnaire by Wells, Five Facet Mindfulness Questionnaire (FFMQ), and spiritual well-being questionnaire by Ellison Paloutzian. After explaining the research objectives to the participants, they were asked to carefully fill out the research instruments.

The FFMQ has been reported to show adequate to good internal consistency (0.72-0.92) administered to a sample of meditators, highly educated non-meditators, and a community sample of non-meditators (4). In addition, this instrument has demonstrated relationships, in expected directions, with the other measures thought to be related to mindfulness (e.g., thought suppression, openness to experience, and experiential avoidance) (4).

The Wells' meta-cognition questionnaire has a good validity and reliability. This questionnaire has been demonstrated to have the Cronbach alpha coefficient range of 0.72-0.89 for its individual subscales. Moreover, the test-retest reliability of this research tool has been reported to range within 0.76-0.89 after a 5-week interval among a non-clinical sample (13).

Regarding the spiritual well-being questionnaire developed by Ellison and Paloutzian, the test-retest reliability of this instrument on a sample of students was 0.36 and above. In addition, the internal consistency

of this questionnaire was estimated as 0.78 and above (25). In the current study, the Cronbach's alpha coefficients of 0.91, 0.92, and 0.34 were obtained for the total spiritual well-being score and subscales of religious well-being and existential well-being, respectively.

In order to consider the ethical consideration of the study, the participants were briefly informed about the study objectives. Furthermore, they were ensured about the voluntariness of participation, anonymity issues, and possibility of study withdrawal. Additionally, informed consent was obtained from the participants.

The collected data were analyzed using the Chi-square test, independent t-test, Pearson correlation, and multiple regression tests in SPSS, version 21.

Result

The results of the Chi-square test showed a significant difference between the male and female groups in terms of age, education level, and mother's job. However, no significant difference was observed between the two groups regarding the other variables ($P > 0.05$).

The results of the independent t-test (Table 1) revealed that the two groups of the male and female gifted students were significantly different in terms of observing ($P < 0.05$),

Table 1: Gender differences in terms of mindfulness, spiritual well-being, and metacognition components

Variable	Females (mean±SD)	Males (mean±SD)	P-value
Mindfulness	114.35±15.81	111.63±13.40	0.481
Observing	29.07±5.92	26.10±6.13	0.004
Describing	21.21±3.55	21.21±3.68	0.997
Acting with awareness	19.41±5.46	02.45±6.14	0.283
Non-judging	24.52±6.12	24.31±5.24	0.819
Non-reactivity	20.12±3.84	20.54±4.02	0.672
Spiritual well-Being	69.44±6.93	68.94±7.10	0.531
Religious well-being	33.84±3.23	36.91±3.45	0.017
Existential well-being	35.60±3.90	35.02±3.84	0.377
Meta-cognition	71.67±11.52	74.91±11.64	0.095
Cognitive confidence	11.41±2.49	12.47±2.51	0.012
Positive beliefs about worry	14.85±2.90	15.29±3.54	0.418
Cognitive self-consciousness	17.28±3.52	17.52±3.64	0.687
Negative beliefs danger	19.85±3.23	21±3.45	0.047
Need to control thoughts	8.25±2.69	8.66±2.76	0.425

cognitive confidence ($P < 0.05$), and negative beliefs danger ($P < 0.05$). Furthermore, there was a significant and positive relationship between mindfulness and spiritual well-being ($r = 0.31$). Nonetheless, meta-cognition had no significant relationship with spiritual well-being. According to the regression analysis, the component of non-judgment was the best predictor of spiritual well-being.

The summary of the data related to the coefficient of determination and ratios obtained from spiritual well-being regression analyses on the mindfulness components is tabulated in Table 2. The results demonstrated that non-judgment determined 6% of spiritual well-being. Considering the inability of other components (i.e., observing, describing, acting with awareness, non-judging, and non-reactivity) in predicting mindfulness, they were removed from the final model.

Table 2: Results of multiple regression analysis predicting spiritual well-being by mindfulness components

Variables	R	R ²	SE	B	Beta	t (P-value)
Non-judgment	0.24	0.06	6.80	0.30	0.24	3.06 (0.003)

Considering that the aim of current study was to investigate the relationship between mindfulness and meta-cognition, the variable of mindfulness was analyzed respectively on all components of meta-cognition using the stepwise regression. Table 3 presents the summary of the data related to the coefficient of determination and the ratios obtained from mindfulness regression analysis on the components of meta-cognition. According to the results, positive beliefs about worry determined 4% of mindfulness variance (Table 3).

Table 3: Results of multiple regression analysis predicting mindfulness by metacognition components

Variable	R	R ²	SE	B	Beta	t (P-value)
Positive beliefs about worry	0.21	0.04	14.31	0.96	0.21	2.60 (0.010)

The components of cognitive confidence, cognitive self-consciousness, negative beliefs about uncontrollability and danger, and need to

control thoughts played no significant role in predicting mindfulness. Therefore, they were removed from the equation. The results of the study revealed that the component of positive beliefs about worry was the best predictor of mindfulness. Accordingly, the F ratio significance indicated a relationship between this component and mindfulness.

Discussion

The aim of this study was to investigate the relationship among meta-cognition, mindfulness, and spiritual well-being among the gifted high school students. Our results revealed a positive and significant relationship between mindfulness and spiritual well-being. Regression analysis indicated that 6% of spiritual well-being variance could be determined through non-judgment.

Meanwhile, only the role of non-judging was significant in the determination of spiritual well-being, where as the other facets were insignificant in this regard. This result is inconsistent with the findings obtained by Shapiro (9). In this respect, when one is mentally aware of his/her environment and himself, he/she can be better compatible with family members, friends, and others, and cope better with spiritual and mental issues. Therefore, one's imagination and awareness about him/herself and the relationship he/she establishes with others are the most important factors in predicting spiritual well-being.

Mindfulness causes God's presence at the mind and positive feelings to the life and oneself. This also involves a special and organized attention without prejudice and judgment (26) to spiritual well-being, which results in having an organized and meaningful life, as well as believing and linking to the superior power of God. Various studies have shown the effects of increased mindfulness in spiritual well-being and enhancement of life satisfaction accordingly.

Mindfulness clarifies experiences and encourages the individuals to live every moment of their lives. This decreases negative psychological symptoms and increases spiritual well-being. In addition, there was a significant relationship between the subscale of religious

commitment and its total score with the subscales and total score of mindfulness (27, 28).

According to Carmody et al. (8), the implementation of mindfulness exercises leads to the growth of different facets of mindfulness, such as observing, non-judging, non-reactivity, and acting with awareness. The development of such facets improves spiritual well-being and decreases stress and psychological symptoms. The enhancement of mindfulness increases the ability to sit back and watch states, such as anxiety. Therefore, we can release ourselves of automatic behavioral patterns and do not be controlled by such states as anxiety and fear through rethinking. Moreover, we can use the information appeared by such states like body sensation, thoughts and feelings, accompany with emotions, and increase our spiritual well-being (29-31).

The results of the regression analysis indicated that 4% of mindfulness in the gifted students was determined by positive beliefs about worry. In other words, the gifted students related their mindfulness mostly to positive beliefs about worry rather than other factors. Research has shown a significant relationship between mindfulness and metacognition (32, 33). Wells (13) stated that the activation of several meta-cognitive processes, such as meta-cognitive monitoring, is necessary for one to be able to enter a state of mindfulness.

Meta-cognition has been also theoretically related to mindfulness in several studies (34-35). Although most of the studies have been conducted in a clinical context and have examined the outcomes of treatment programs, such as mindfulness-based cognitive therapy (e.g., Teasdale et al. [29]) and meta-cognitive therapy. The mindfulness-based cognitive therapy and meta-cognitive therapy are two different programs; however, they can be regarded as overlapping approaches to the same goal. Both of these therapeutic approaches are utilized for fostering a change in the client's relationship with their thoughts and experiences (36-42).

In the present study, there was a significant difference between the gifted male and female

students in terms of two components of meta-cognition, namely cognitive confidence and negative beliefs about danger, which is inconsistent with the findings obtained by Liliana and Lavinia (43). The previous studies have reported inconclusive findings regarding the differences in meta-cognition based on the pupils' gender. For instance, Sperling et al. (44) investigated the gender differences in meta-cognitive skills (i.e., knowledge of cognition and regulation of cognition) and revealed insignificant gender differences in this regard.

In addition, the gifted male and female students showed a significant difference regarding religious well-being. Difference in the religious attitudes of the two genders has been frequently reported in the literature. However, such a difference has not been observed in some of the Iranian studies. Some scholars have noted that gender difference in terms of religious attitudes can be studied in a specific religion.

For example, in a study carried out by Lontal et al. on the followers of four religions of Christianity, Hinduism, Jew, and Islam, gender difference in religious attitude was only detected in Christianity. Those scholars who did not observe any difference in religious attitudes between the two genders believe that such a difference is specific only to the Western cultures, and it cannot be observed in our culture due to the deep penetration of religion in all eras and periods. Nonetheless, the most important issue in the studies carried out in the field of gender differences in terms of religions is that the studies finding such a difference are more in number than those having not found such a difference. On the other hand, this finding has been repeated in most of the studied religions and societies.

No study has indicated the significant difference of mindfulness among the male and female students. However, in a study performed by Baer (4), it was shown that the promotion of mindfulness-oriented techniques is influential in the reduction of anxiety level among the students. Fennell (45) also revealed that mindfulness-based cognition therapy

teaching improved patients' depression and self-confidence.

Conclusion

As the findings of the present study indicated, the component of non-judging from mindfulness variable played an important role in determining spiritual well-being. Consequently, it is important to pay attention to the role of this component in spiritual well-being among the students. One of the limitations of the current study is its restriction to the investigation of only high school level.

Therefore, much care should be taken in generalizing the results to other educational levels. Regarding the results of the study, the education officials are recommended to teach mindfulness, meta-cognition, and spiritual well-being techniques to the students. In addition, it is suggested to investigate the other variables of the study using other tools to identify the influential rate of the tools.

Conflict of interest

The author declares no conflict of interest.

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