



Link between Mindfulness and Personality-Related Factors Including Empathy, Theory of Mind, Openness, Pro-social Behaviour and Suggestibility

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Abstract

This research investigated a potential linkage between mindfulness and personality characteristics such as openness to experience, empathy (empathic concern and theory of mind), pro-social behaviour and suggestibility. A sample of 275 volunteers was recruited. A series of the research questionnaires and scales was employed to measure mindfulness, empathic concern, theory of mind (or perspective taking), pro-social behaviour (or altruism) and suggestibility. Based on the quartile scores, participants were divided into two low (first quartile) and high (fourth quartile) on mindfulness. Using a two-way MANOVA, the results showed that participants high on mindfulness exhibited increased theory of mind, pro-social behaviour and openness, in addition to decreased suggestibility. Neither main nor interaction effects were found for gender factor. Theoretical models in the field of social cognition will be discussed to explain how enhancement in cognitive functions due to mindfulness practice might alter personality characteristics and, in turn, influence socio-political behaviour.

Keywords: Pro-social behaviour; Mindfulness; Empathy

Introduction

Mindfulness is deemed as an impetus to facilitate 'hot' cognitive process that engages the whole individual and prepare the ground for behavioural change [1]. In line with this, mindfulness training can become an essential component of any therapeutic plan. Mindful state, cognitively speaking, would potentially result in a series of diverse consequences including, but not limited to, (1) a heightened state of involvement and wakefulness, (2) enhanced sensory-perceptive ability, (3) a greater openness to new information and signals, and (4) enhanced awareness of multiple perspectives while doing cognitive tasks [2].

Mindfulness has been defined as 'paying attention in a particular way, on purpose, in the present moment, and non-judgmentally' [3]. The trainee learns to focus their attention on both internal and external stimuli while they are non-judgmentally aware of the present moment. As Sternberg [4] pointed out, the less mindfulness stands in isolation from much of the psychological literature, the more thorough insight we might gain concerning its potential enhancing effects on other psychological constructs. Therefore, further research would provide a pivotal knowledge to be used in an applied field.

The impact of mindfulness on a variety of psychological factors had been identified, for instances, on empathic concern, perspective taking (theory of mind) and altruism (pro-social behaviour) [5]. An enhanced moment-to-moment awareness might play a part in cultivating qualities of empathy [6]. Birnie, et al. [7], however, showed that mindfulness would only increase perspective taking but not empathic concern. Perspective taking and empathic concern are regarded as cognitive and affective components of empathy

respectively [8]. Empathy is the ability to be emotionally in tune with another person, whilst perspective taking is the ability to look at the events from another's point of view [9]. People high on empathy are reported to be understanding, tolerant, tender, caring, and compassionate [10,11]. This would be in line with the evidence showing a clear connection between empathy and pro-social behaviour (altruism) [12]. With this in mind, one can argue that people with higher levels of mindfulness might be high on pro-social behaviour.

Furthermore, it has been also suggested that mindfulness training can enhance openness to experience Barner and Barner [13], cognitive flexibility Moore and Malinowski [14], and cognitive abilities (e.g., creativity and problem solving) [4]. In theory, a mindful person is expected to be open not only to new information and ideas but also to different viewpoints from a broader perspective. Thus, one can argue that engagement in mindfulness-related meditations may play a role in enhancing qualities as such.

A review of the literature highlights further potential psychological variables which may be associated with mindfulness. Suggestibility might be regarded as a factor which can be influenced by the level of mindfulness. In fact, suggestibility is a personality trait which reflects the extent to which an individual accepts information uncritically Kotov et al. [15]. It is expected that people low on mindfulness tend to be more suggestible who take statements at face value without engaging in critical thinking. In other words, people doing meditation would experience "pure bright awareness" that in turn might enable them to see reality probably with less interference of cognitive biases and pre-assumptions. This would eventually support this idea that a mindful person is more likely to show lower levels of suggestibility than people low on mindfulness.

The objective of the present study was to enhance understanding of the relationship between mindfulness with other psychological factors including empathic concern, theory of mind, pro-social behaviour, openness to experience and suggestibility. In a cross-sectional design, we employed the quartile-split method (first and fourth quartiles) to compare two groups either high or low on mindfulness. Therefore, it was hypothesised that mindfulness might have either an augmenting or attenuating effect on the aforementioned target variables.

Methods

Participants and procedure

By using convenience sampling, 275 Iranian participants (mean age=30.40, SD=5.48) completed the questionnaires. The sample consisted of 63 (23%) men and 212 (77%) women. They had to be free of any psychological disorders as self-reported. In terms of educational level, 5.1% held high school certificate, 52.4% undergraduate degree and 42.5% post graduate degree. All participants first read and signed an informed consent form that assured them that their details and responses would remain confidential. Using the mindfulness scores (FFMQ; see the measures section below), the sample was split into two low (first quartile, the quartile score included) and high (fourth quartile, the third quartile score excluded) on mindfulness. The demographic details of these groups are presented in the results section.

Measures

For all scales, higher scores represented higher levels of the variables measured unless otherwise indicated. All measures have been validated with Iranian samples in the past [16,17].

Five Facet Mindfulness Questionnaire (FFMQ) Baer et al. [18] is a self-report instrument measuring general inclination to be mindful in daily life. It consists of 39 items including five facets of mindfulness: observing, describing, acting with awareness, being non-judgmental about inner experience, and no reactivity to inner experience. An example of an item is "When I take a shower or bath, I stay alert to the sensations of water on my body". Items are rated on a scale ranging from 1 (never or very rarely true) to 5 (very often or always true).

Toronto Empathy Questionnaire (TEQ) Spreng, et al. [19]. This 16-items questionnaire measures level of empathic concern (affective component of empathy), namely, the ability to understand others' feeling. Each item is rated on a 5 point scale ranging from 1 (never) to 5 (always). A sample item is "I have tender, concerned feelings for people less fortunate than me".

Theory of mind (ToM) or Perspective Taking (PT sub-scale from IRI) [20]. This 7 item measure assesses one's ability to understand others' thoughts and viewpoints. Respondents rate items on a 5 point scale ranging from 1 (does not describe me well) to 5 (describes me well). A sample item is "I try to look at everybody's side of a disagreement before I make a decision".

Openness to experience (From Neo-PI-R) Costa and McCrae [21]. This scale encompasses three sub-scales including Actions (willingness to embrace new experiences), Ideas (the tendency to consider new, and possibly unconventional ideas) and Values (readiness to revisit social, political and religious values). Each of the subscales consists of 8 items. An example item for Actions is "I often try new and foreign foods"; for Ideas is "I have a lot of intellectual curiosity"; and for Values is "I believe that the different ideas of right and wrong that people in other

societies may be valid for them". Items are rated on a 5 point scale from 1 (strongly disagree) to 5 (strongly agree).

Pro-social behaviour (Altruism Scale) Rushton et al. [22]. This Scale comprised 20 items measuring altruistic behaviours such as "I have donated goods or clothes to a charity". Each behaviour is rated on a 5 point scale denoting frequency ranging from 1 (never) to 5 (very often).

Suggestibility (SSS-21) Kotov et al. [15], this 21 item measure, derived from the Multidimensional Iowa Suggestibility Scale (MISS), assesses a general tendency to accept and internalize messages uncritically (e.g. "I am easily influenced by other people's opinions"). Each item is rated on a 5 point scale from 1 (not at all or very slightly) to 5 (a lot).

Data analysis

Using SPSS for Windows, 21, a 2 × 2 MANOVA was performed with empathy, theory of mind, openness, pro-social behaviour and suggestibility as dependent variables, and gender (men, women) and group (low-mindful, high-mindful) as between-group, fixed factors. To examine inter-correlations between the variables, Pearson correlation was conducted.

Results

Table 1 indicates demographic details of low and high mindful groups. Male participants in both groups are less than females. Descriptive data reveals that most of the participants hold a higher education degree in both low- and high-mindful groups. In terms of age, groups are comparable.

	Low-mindful group (n=68)	High-mindful group (n=69)
Gender	12 (18%)	16 (23%)
Men	56 (82%)	53 (77%)
Women		
Educational degree*	6 (9%)	3 (4%)
HS	36 (53%)	30 (44.7%)
UG	26 (38%)	36 (52%)
PG		
Age	Mean=29.83 SD=4.90	Mean=29.23 SD=5.60

Table 1: Demographic details of low- and high-mindful groups (1st and 4th quartiles respectively).

The MANOVA results yielded neither main gender effect nor gender-group interaction effect. There are significant group effects on theory of mind (F1, 131=8.09, p<0.01), openness (F1, 131=30.80, p<0.001), pro-social behaviour (F1, 131=3.90, p<0.05) and suggestibility (F1, 131=57.56, p<.001). As shown in Figure 1, people low on mindfulness scored lower on theory of mind, openness and pro-social behaviour than people high on mindfulness. Moreover, suggestibility is significantly higher in low-mindful group than high-mindful group. No significant group effect was obtained for empathic concern showing two groups do not differ.

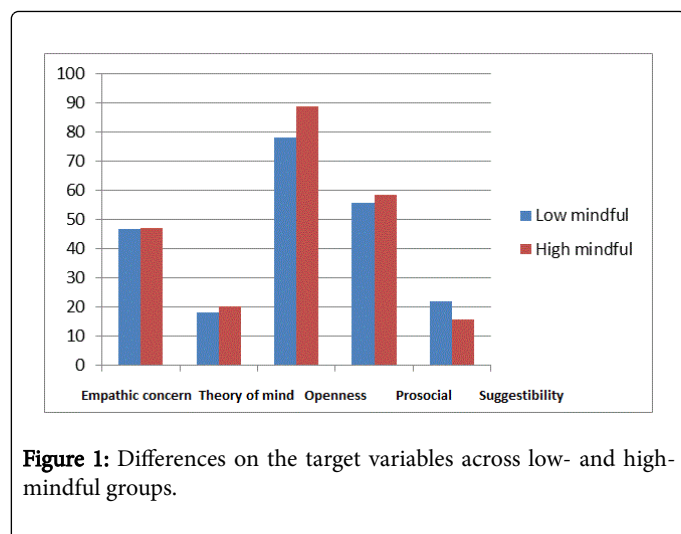


Figure 1: Differences on the target variables across low- and high-mindful groups.

Inter-correlations between all variables measured in this study in each group (low- and high-mindful) are presented in (Table 2). Significant correlations are more pronounced in high-mindful group than low-mindful group. Mindfulness seems positively associated with theory of mind and openness, and negatively correlated with suggestibility. Empathy is positively correlated with theory of mind (in low-mindful group) and openness (in high-mindful group), and negatively correlated with suggestibility (in high-mindful group). Moreover, there are positive relationships between openness with pro-social behaviour in both groups.

	1	2	3	4	5	6
1. Mindfulness	1					
2. Empathy	-.05 .05	1				
3. Theory of mind	.24 .45***	* .22*	1			
4. Openness	.01 .47***	-.15 .22*	-.08 .15	1		
5. Pro-social behaviour	.02	-.16 .13	-.06 .19	.48*** .36**	1	
6. Suggestibility	-.27* -.52***	.23 -.24*	.22 -.19	-.16 -.42***	-.12 .06	1

Table 2: Inter-correlations among variables in low-mindful and high-mindful (in bold) groups

Discussion

The results in the current study have the potential to advance our understanding of how mindfulness level might alter other psychological characteristics. Participants high on mindfulness exhibited increased theory of mind, pro-social behaviour and openness, in addition to decreased suggestibility. These are further supported by the results on inter-variable correlations.

Of the consequences of mindfulness are a greater openness to new information and increased awareness of multiple perspectives Langer

and Moldoveanu [2] that would potentially cultivate openness to experience and theory of mind respectively. Evidence supports the impact of mindfulness on theory of mind [5]. The current findings, however, did not support that low- and high-mindful groups differ on empathic concern (affective component of empathy). Birnie et al. [7], previously, found that mindfulness-based training could only result in a significant increase in theory of mind or perspective taking; they observed no significant change in empathic concern.

Apart from the enhancing impact of mindfulness on openness to experience Barner and Barner [13], it has been also suggested that mindfulness training would increase cognitive flexibility Moore and Malinowski [14], and cognitive abilities (e.g., creativity and problem solving). In theory, a person with high mindfulness is expected to be open not only to new information and signals but also to different viewpoints from a broader perspective [23]. Thus, one can argue that engagement in mindfulness-related meditations may play a role in enhancing qualities as such.

Block-Lerner et al. [5] conclude that there is a link between mindfulness and altruistic or prosocial behaviour. This is supported by our findings. That is to say that those who score higher on mindfulness tend to show more altruistic behaviour. In a randomized control trial, Wallmark et al. [24] showed that altruism is influenced by mindfulness practice. In their study, participants who received an eight-week programme of various meditations training displayed higher level of altruistic behaviour than the control group.

Moreover, mindfulness can enhance the state of wakefulness as well as sensory-perceptive ability Langer and Moldoveanu [2] which, in turn, can possibly lead to a reduction in suggestibility. This can explain the link between mindfulness and suggestibility obtains in the current study. A person high on suggestibility tends to accept information uncritically, at face value [15]. Holroyd [25] reviewed the literature and pointed out that mindfulness practice would lead to an increase in 'calmness, serenity, and a clear mind to develop deeper insight and understanding'; a clear mind would eventually result in a decline in suggestibility and a non-suggestible mind. The present findings suggest that mindfulness plays a crucial part to help people utilize more cognitive resources and be less suggestible (acquiescent) while receiving new information and ideas.

Langer and Moldoveanu [2] argue that mindfulness theory is helpful for addressing social problems in a wide range of contexts including the workplace, classrooms and elderly care homes. We suspect that mindfulness training can be employed in various societal settings for its socio-political consequences. For example, there exists evidence to support this idea that the personality qualities measured in this study (e.g., openness to experience, and suggestibility) are somehow related to the support for democratic values among society members [17,26]. This implies that mindfulness training would, not only, enhance such qualities, but consequently give rise to support for democracy among people. This supports the usefulness of mindfulness training in order to nurture the characteristics that might underpin and enhance healthy socio-political behaviour and tendency in the society.

From a theoretical point of view, mindfulness practice might foster receptive communication process in observing, listening, and attending to the new cues and signals sent by others that evokes an open-minded attitude in dealing with other members of the society. As maintains, a mindful person tends to recognize that one's view is likely to be deviant from others and can be fairly placed within a continuum.

Such awareness might discourage mindless stereotyping allowing development of further categorization in our cognitive system which, in turn, can reduce discrimination and prejudice. From this perspective, mindfulness helps people be meta-cognitively aware of stereotypes assuming them as merely first best guesses rather than definitive answer. Accordingly, a mindful person would most probably recognize valid differences and similarities between the self and others, both in-group and out-group. All these take place within a social cognition domain and demonstrate how they can foster socio-political behaviour, in particular support for democratic values at society level.

Although this study takes a pivotal step in examining the relationship between mindfulness and personality characteristics, some limitations remain. Since the recruitment in this study was via convenience, non-probability sampling, the results generalizable to the entire population. Apart from this, gender effect did not turn out to be significant in the present research that might not be the artefact of unequal sample size. Lastly, due to the correlational nature of the study, potential confounding variables could not be controlled. Future research should seek to minimize limitations of the current study.

Overall, the findings of the present study expand upon previous mindfulness-related research by demonstrating a strong relationship between mindfulness and enhanced level of some personality characteristics including openness, theory of mind, suggestibility and pro-social behaviour. Results from the current study corroborate theoretical models in the field of social cognition suggesting that enhancement in cognitive functions due to mindfulness practice might prepare the ground for the development of socio-political behaviour in societal setting. That is to say, once we become mindfully aware of views other than our own and eventually realize that there are as many different views as there are different observers, such awareness is potentially liberating.

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