Cross-Cultural Insights into Mindfulness, Empathy, and Academic Burnout

Muhammad Ibrahim
Department of Education, Preston University, Islamabad
langrah@hotmail.com

Prof. Dr. Sajida Parveen
Professor Business Administration, Karachi college of Economics and Technology
drsajidaparveen90@gmail.com

Abstract

Mindfulness-based interventions have demonstrated significant therapeutic benefits across various stages of life, from childhood to old age (De la Fuente-Anuncibay et al., 2019). These interventions facilitate the development of empathy and self-forgiveness, as well as forgiveness towards others (Neff & Dahm, 2015). This study takes a novel approach by comparing the levels of mindfulness, academic burnout, and empathy between Pakistani and Yemeni student groups. Additionally, it examines the mediating role of empathy in the relationship between mindfulness and academic burnout. An online survey was conducted among 910 undergraduate and postgraduate students from Pakistan and Yemen, with the majority of participants aged between 18-25 years and 64% of them being male. The results indicated that Pakistani participants had higher scores in mindfulness (MAAS score: 54.65 ± 0.61) and empathy (IRI score: 68.45 ± 0.58). Empathy was found to mediate the relationship between mindfulness and academic burnout, showing a negative correlation with academic burnout and a positive correlation with mindfulness. Recent research supports these findings, highlighting the crucial role of empathy in enhancing mindfulness and reducing academic burnout (Keng et al., 2020; Shapiro et al., 2021).

Keywords*: Mindfulness, Empathy, Academic burnout, Cross-cultural comparison Mediating role*

Introduction

In many professions and domains of social life, Mindfulness is an emerging perception and is difficult to identify because sometimes it is used to describe a social phenomenon, at other times it is a spiritual phenomenon and sometimes self-oriented phenomenon (Nilsson & Kazemi, 2016; Tiwari, 2019). The term mindfulness arises from the Pali language, in which Sat is merged with Sampajana, and it is translated as alertness, circumspection, perspicacity, and Maintenance. T.W. Rhys Davids was the first who translated the Buddhist technical term sati (in its Pali form) or smrti (in its Sanskrit form) by English as 'mindfulness' in 1881 (Gethin, 2011; Nilsson & Kazemi, 2016). Mindfulness is the cognitive propensity to be responsive of anything happening in the moment without being discriminant or affection of any particular outcome (Napoli, Krech, & Holley, 2005; Shook et al., 2021). Focus on the breath is the major component of mindfulness practice. Other important components are the capability to regulate the events occurring within the body and mind, and the act of being an observer to one's own personal experience. It is reported that breathing regulates the Autonomic Nervous System (ANS), it enhances self-awareness and increases the attention of the mind (Napoli et al., 2005).

A state of extreme emotional, physical and mental exhaustion is known as burnout (Maslach & Schaufeli, 2018). The major reason behind the burnout is divergence between nature of the person and the nature of the job he is doing. The key aspects of burnout consist of excessive burden, inadequate monitoring, lack of gratuity, absence of community, appreciate disagreement, and lack of fairness, which are understandable signs that the job and the person are incompatible (Rahmati, 2015 #84). Burnout is an important topic for researcher from last 40 years. Burnout dimensions well-defined in a way that reveal the emphasis on occupations with wide interactions with people, but minor term modifications like emotional fatigue, sarcasm and reduced professional productivity are more suitable for other occupations. Emotional fatigue is the first response to the pressure of job demands and it is also the basic

component of the syndrome. Exhausted individuals feel physically and emotionally drained up and incapable to recuperate, negative responses to work are produced by the burnout or sarcasm and people work emotionlessly and with unsociable attitude. The final dimension, self-evaluation part of burnout decreased professional ability, is a condition of ineffectiveness and loss of confidence in own capabilities. All three dimensions correspondingly relate to the level of energy, attitude, and self-evaluation. Similarly, burnout dimensions are defined for student population and they refer to feeling drained because of study burdens, having a pessimistic attitude to studies, and these situation students feel ineffectual and unproductive (Nikodijević, 2012 #88).

The burnout is an impression that originally formulated to define responses to stress in the workplace. Relating this concept to educational settings recommends that similar to workplace, school also requires individuals to involve in numerous attainment pressures (Farina, 2020 #92). The symptoms of burnout are different and non-specific. These symptoms including physical, psycho-behavioral, psychical, or cognitive symptoms. Moreover, burnout is a multidimensional syndrome that is defined by three consecutive or co-existing dimensions. Emotional fatigue is a feeling of desolation, emotional fullness as well as physical and psychical exhaustion, producing problems to achieve typical professional activities. Depersonalization or sarcasm involves of negative and reserved attitudes to others that results in isolation and refusal. Decrease of individual exploit is result in reduced self-confidence, self-devaluation, feeling of disappointment and guilt (Thirioux, 2016 #93).

Empathy can be defined as an important component of social understanding that enhances our skills to understand and act adaptively to the emotions of others, to be successful in emotional communication. Empathy is termed as an emotional condition and emotional responses that are caused by emotional sharing. There is an association between empathy with the individual mindfulness that these feelings produce in another individual and to a negligible

self-other difference (Thirioux, 2016 #93). Empathy is element of a optimistic personality (Hojat, 2015 #96). Mindfulness is an effective meditation now days and many researchers work on it. In the present research, researcher intended to explore the association of mindfulness and academic burnout. Furthermore, it was also determined if empathy is a mediating factor and could have an effect on academic burnout.

Research Objectives

Research Objectives

- Comparison of Psychological Traits: To analyze and compare the levels of mindfulness, empathy, and academic burnout among students from Pakistan and Yemen.
- Mediation Effect of Empathy: To investigate whether mindfulness can reduce academic burnout through the mediating role of empathy in both Pakistani and Yemeni student groups.
- Correlations of Empathy: To determine if there is a positive correlation between empathy and mindfulness, and a negative correlation between empathy and academic burnout.

Research Questions

1. Correlation of Empathy: Is there a correlation between empathy and both mindfulness and academic burnout?
2. Impact of Mindfulness on Academic Burnout: How does mindfulness influence the level of academic burnout among students?
3. Mediating Role of Empathy: Is empathy a mediating factor in the relationship between mindfulness and academic burnout?

Literature Review

The well-known Western definition of mindfulness was documented by Dr. Jon Kabat J Zinn, a dominant founder of the field who defined mindfulness as, "paying attention in the present moment, and nonjudgmentally" (Black, 2011). Mindfulness is an effective meditation that results in various positive outcomes. Research was conducted to explore this association for the instigation and continuing mindfulness meditation. The major reason behind the meditation practice was to reduce emotional suffering and improve emotional issues (Pepping, 2016 #86). A huge experiential literature is associated with positive outcomes of mindfulness practice, but the accurate mechanism of mindfulness still remains to be reconnoitered. Mindfulness has thus become attractive to therapists from a variation of theoretical orientations; mindfulness is very effective when combined with counseling. Usually, psychotherapists initiate with psychoeducation, in which participants are treated with the basic elements of mindfulness, which might then be followed by guided exercises (Krägeloh, 2016).

According to the previous studies, mindfulness is effective and efficient in improving the health and well-being of university students. It minimizes the anxiety, depression, and considerably boosts student life gratification. It also increases the knowledge retention, progress, and scores in test. It also manifests that mindfulness meditation is also effective in decreasing stress and anxiety in the college students. Usefulness of mindfulness in handling and reducing the burnout in students is also presented in the previous studies (Ahmad et al., 2020).

A study was conducted in 2004 by Beddoe et al.,that revealed positive correlation of mindfulness intervention in reducing stress in students. According to this study stress level of 75% of the students was reduced by using mindfulness technique followed by 40-50% increase in empathy score as well (Beddoe & Murphy, 2004). A recurrently used definition of burnout was offered by Maslach as ‘‘a psychological syndrome of emotional exhaustion,

depersonalization, and reduced personal accomplishment'' that occurs as a response to emotional and interpersonal stressors among individuals (Maslach & Goldberg, 1998).

Children are undergoing stress, developing anger and ferocious behavior, manner disorders, and several types of anxiety that include rivalry and test anxiety, that is something which has never happened before. The literature shows that there is a negative impact on students' school performance, disturb their thinking, and affect their learning (Napoli et al., 2005)

A study was conducted by the Wang in 2019 that revealed empathy described 0.6% of the variance in life satisfaction in contrast to 13.7% of the variance described by burnout in life satisfaction. While empathy did not have a key consequence on life satisfaction, there was collaboration of empathy and burnout on life satisfaction among students of high and low empathy and burnout levels. Students with high levels of empathy and low levels of burnout were utmost gratified with life (Wang, 2019 #97).

Research Methodology

Population

A total of 910 participants were included in this study. The study was conducted via online data collection form and data was collected from Pakistani and Yemeni students. From a total of 910, Pakistani students were 455 and Yemeni students were also 455. The majority of the overall participants, 585 (64.3%) belongs to an age group of 18-25 years and 582 (64%) were Male students.

Data collection

The data was collected from undergraduate to postgraduate students via online survey. There was no age, study department or year restriction. The snowball sampling technique was used in which the online survey form was circulated to the peers and they were asked to further circulate it. The data was collected over a period of 6 months starting from

January 2021 to June 2021. The data collection form consisted of demographic information, scales to evaluate mindfulness, academic burnout and empathy. Detail of these scales was provided in the beginning of the section to provide basic information to the respondents. The demographic section of the questionnaire included the age, gender, and academic level of the students. These demographics were obtained in order to see if any of these acts as the confounding factors. All participants were required to answer every question in order to avoid any risk of respondent skipping any question intentionally or unintentionally.

Ethical review

The data for the present study was collected as part of online survey, ethical review was not required. However, it was ensured that the study complies all the ethical standards. Participants were briefed regarding the purpose of study in the beginning of the online questionnaire. Respondents were also ensured that their identity will be kept anonymous and will only be used for study purpose. As it was an online survey, respondents had the choice to withdraw or not submit their response

Tools of data collection

Three different scales were used in this study. In order to measure mindfulness among the students, Mindfulness Attention Awareness Scale (MAAS) is used. MAAS is a valid measuring tool for mindfulness trait without gender biasness or meditation experience (MacKillop & Anderson, 2007). MAAS has 15 items, and to each item responses of the participants were recorded on a 5-point Likert scale of 1-6 i.e. 1 (almost always), 2 (very frequently), 3 (somewhat frequently), 4 (somewhat infrequently), 5 (very infrequently), and 6 (almost never). The responses of the participants were calculated as score and summed up for further analysis. Score for the 15 MAAS items was coded as per response. In order to score the MAAS scale, the mean is computed which is equal to the sum of the

answers divided by 15. The mindfulness is directly proportional to the score, the higher the score the higher would be the dispositional mindfulness (Brow & Ryan, 2003).

Maslach Burnout Inventory (MBI) Scale to measure Students Academic Burnout was used as a second data collection tool. MBI is used for measuring burnout. It measures three dimensions of burnout i.e. (1) Emotional exhaustion (EE), (2) Depersonalization, and (3) Personal accomplishment (PA) (Poghosyan, Aiken, & Sloane, 2009). This tool consisted of 15 items and in response to each item participants response was recorded on a 7-level frequency scale of 0-6 i.e. 0 (Never), 1 (A few times a year or less), 2 (Once a month or less), 3 (A few times a month or less), 4 (Once a week) and 6 (Everyday). The responses were calculated as score and summed up for further analysis (Maslach, Jackson, & Leiter, 1997).

Empathy trait among the students was determined using Interpersonal Reactivity Index (IRI). This scale inquired about the thoughts and feelings of the respondents in a variety of situations. IRI had 28 items which used a 5-point Likert scale of A-E i.e. A (Does not describes me well) to E (Describes me well). The responses were calculated as score i.e. A = 0, B = 1, C = 2, D = 3, and E = 4; these scores are used for further analysis (Davis, 1980).

Data obtained using all these aforementioned scales was analyzed and interpreted in terms of students in the same group and between two ethnic groups as well (et al.).

Analysis of data

Data is recorded in the form of Mean ± Standard deviation for continuous variables and frequency for categorical variable. MAAS scale was kept in its original continuous scale form to preserve the statistical power. To evaluate Mean (± SD) score in each group and their contributions to the main effects, independent t-test was used. Correlation between these variables was evaluated using bivariate Pearson correlation.

A mediating effect analysis was conducted Dr. Andrew F Hayes's process macro (version 3.5) model number 4 in SPSS. Data obtained on variables i.e. mindfulness, academic burnout and empathy was compared between Pakistani and Yemeni students using MANOVA. SPSS version 21 was used for statistical analysis in this study with a significant value of $p < 0.05$.

Data Analysis and Results

Demographics

In initial stages of data collection, total sample size was 925. Yemeni study group consisted of 455 respondents and Pakistani group had 470 respondents. As Pakistani respondents were higher as compared to Yemeni, so in order to equalize the number of respondents in both groups, students from Pakistani group were randomly deleted. These respondents were randomly deleted by using system generated list i.e. every 7th respondent was removed from the Pakistani students' group until we reached equal sample size in both groups i.e. n=455.

Finally, a total of 910 students were included in the study i.e. n=455 Pakistani, and n=455 Yemeni students. Of the total 910 final participants, 582 (64%) were Male and 328 (36%) were Female students. Comparison between two groups of students is summarized in Table 1.

Table 1: ***Demographic characteristics of Pakistani and Yemeni participants***

Characteristics	Total participants (N=910)	Pakistani students (n=455)	Yemeni students (n=455)
Gender			
Male	582 (64%)	271 (59.6%)	311 (68.4%)
Female	328 (36%)	184 (40.4%)	144 (31.6%)
Age (years)			
18-25	585 (64.3%)	273 (60%)	312 (68.6%)
26-33	284 (31.2%)	148 (32.5%)	136 (29.9%)
34-above	41 (4.5%)	34 (7.5%)	7 (1.5%)

Academic status			
Diploma holder	258 (28.4%)	27 (5.9%)	231 (50.8%)
Graduate	327 (35.9%)	186 (40.9%)	141 (31%)
Masters	288 (31.6%)	207 (45.5%)	81 (17.8%)
PhD	37 (4.1%)	35 (7.7%)	2 (0.4%)

Group Comparison

Mindfulness, burnout and empathy level were compared between the two study groups of different ethnicities. All three scales were scored as per responses and the mean score for each scale is provided in Table 2. Mean scores with standard deviation were calculated for both study groups. MANOVA was used to determine the difference between the group of Pakistani and Yemeni students predicting MAAS, MBI and IRI. Wilk Lambda was used from multivariate test table which showed that there was statistically significant difference in both study groups, $F(3, 906) = 488.971$, $p < 0.001$, Wilk $\Lambda = 0.382$ and partial $\eta 2 = 0.618$ (Table 2). The between-subjects test was also conducted; The mean scores for MAAS, MBI and IRI were significantly different between Pakistani and Yemeni group ($p < 0.001$). The mean MAAS score (54.65 ± 0.61) and IRI score (68.45 ± 0.58) were both higher in Pakistani group. On the other hand, burnout score was higher in Yemeni study participants (57.42 ± 0.38)

Independent sample t-test was used to evaluate the effect of dependent variable on the main effect. All the variables have significant effect ($p < 0.001$). MAAS scores were significantly different between the Pakistani and Yemeni students' groups $t = 30.671$ ($p < 0.001$), MBI score $t = -15.304$ ($p < 0.001$) and IRI score $t = 17.772$ ($p < 0.001$).

Table 2: ***Mean score of three scales used among the Pakistani and Yemeni students***

Measures / scale	**Pakistani**		**Yemeni**	
	Mean Score	**S.D**	**Mean Score**	**S.D**
MAAS	54.65	0.61	31.20	0.47
MBI	46.22	0.57	57.42	0.46
IRI	68.45	0.58	56.12	0.38

MAAS: *Mindfulness Attention Awareness scale*
MBI: *Maslach burnout inventory scale*
IRI: *Interpersonal Reactivity Index scale*
SD: *Standard deviation*

Correlation Analysis

There was a positive and significant correlation between mindfulness (MAAS) and empathy (IRI). However, there was a significant and negative correlation found between the mindfulness (MAAS) and academic burnout (MBI). Furthermore, negative but insignificant correlation between burnout (MBI) and empathy (IRI) was also found. The detail of these correlations is provided in Table 3.

	MAAS	**MBI**	**IRI**
MAAS	1	-0.418** (p<0.001)	0.372** (p<0.001)
MBI	-0.418** (p<0.001)	1	-0.056 (p=0.092)
IRI	0.372** (p<0.001)	-0.056 (p=0.092)	1

**Correlation is significant at 0.05 level (2-tailed)*
***Correlation is significant at 0.01 level (2-tailed)*

Mediation analysis

Mediation models are used to evaluate why the relationship exists between predictor variables and the outcomes. In this model, we assume that the predictor variable has a full or partial effect on the outcome through a mediator variable. MACROS Process (version 3.5) by Dr. Andrew F Hayes's, module number 4 was used for mediation analysis. Boot strapping was done at 1000 resampling for our sample size.

A series of mediation analysis was done to evaluate if empathy had a mediating effect on mindfulness and burnout in two study groups, i.e. Pakistani and Yemeni study groups. The first series of analysis was done using mindfulness (MAAS score) as dependent and burnout (MBI score) as independent, with empathy (IRI score) as the mediating factor. Mindfulness and empathy (IRI score) showed a positive path ($b = 0.4733$), ($p < 0.001$); indicating empathy

has a positive mediation effect on mindfulness. However, mindfulness and burnout have an overall negative path (b = - 0.5304), (p < 0.001). Both direct [(b = -0.5562), (p < 0.001)] and indirect effect [(b = -0.258), (95% CI: -0.628 – 0.0158)] of burnout on mindfulness were negative and significant.

The second series of analysis used ethnicity as an independent variable, whereas, mindfulness and empathy remained constant as depending and mediating factor, respectively. Burnout was not included in this series, as correlation of burnout with mindfulness was previously shown to be negative (Table 3) and also in 1st step of mediation analysis as well. The mediating factor and ethnicities had a negative (b = - 12.334) and significant (p < 0.001) path. In addition, ethnicity also has a negative (b = -23.241), (p < 0.001) path with mindfulness. On the other hand, mindfulness and empathy again showed a positive path (b = 0.0188), (p = 0.607) in second series of analysis as well. However, the direct effect of ethnicity on mindfulness is overall negative (b = -23.241); (p < 0.001), indicating that belonging to different ethnicity has no direct effect on mindfulness.

Discussion

Mindfulness is a trait which creates awareness among the individuals and allow them to respond to varying situations including distress (Brow & Ryan, 2003). MAAS is a tool used to evaluate mindfulness using 15 items over 15 domains i.e. general, cognitive, emotional, and physical. Increased level of trait mindfulness helps the person deal effectively with stress, decrease depressive relapse, and improve overall well-being (Shapiro, Brown, Thoresen, & Plante, 2011). MAAS measures the likelihood to the absence and presence to the present moment experiences in everyday usual activities (Shapiro et al., 2011). In this current study, mean mindfulness score was reported higher among Pakistani study participants. The similar demographic characteristics across-culture suggest that the differences are unlikely due to these variables. However, the differences could be due to the unaccounted variables

such as life satisfaction, work-personal life balance, loneliness and happiness (Gordon et al., 2020).

Our study also aimed at evaluating the role of empathy as a mediating factor. IRI score was used to evaluate the various aspects of empathy. Higher score is an indicator of higher empathy (Shapiro et al., 2011). The results of this study reported higher empathy score of the respondents belonging to Pakistani group. Empathy has a positive correlation to the mindfulness, which is also statistically significant. In addition, negative correlation of empathy to academic burnout was evaluated.

This study compared mindfulness, academic burnout and empathy score were compared across-culture. Our study reported that mindfulness (MAAS score) and empathy (IRI score) scores were higher in the Pakistani students. However, academic burnout (MBI score) was relatively higher in Yemeni students. This study reported negative correlation between mindfulness and academic burnout. Furthermore, there was a negative path of mindfulness to academic burnout even with empathy as mediating factor.

For mediation to have occurred, the indirect effect is to be a lower value than the direct effect. The results of the current study showed a lower indirect effect value of mediation analysis in both cases. This indicates that empathy has a mediating effect on mindfulness. On the contrary, it does not have a significant mediating effect on burnout. Rather, this study demonstrated a strong negative effect of mindfulness on the academic burnout. Analysis was also run with ethnicities to see if it has any role, however, ethnicity demonstrated a negative path with both variables. Mindfulness and empathy have a positive path, indicating that participant scoring higher in empathy (IRI score) has a direct effect on the mindfulness.

Apart from mentioned limitations, our studies have various strengths. A large sample size is used which decreases the probability of type I errors. Our study recruited both genders and hence reflects the true picture of gender distribution. Furthermore, our study also includes the cross-cultural comparison (Pakistani and Yemeni) of these variables. No previous study has examined the association between mindfulness and academic burnout across these two countries.

In order to equalize the data obtained from both countries, some of the responses from the Pakistani data were removed randomly due to oversize sample of the online survey responses in the Pakistani population group. Although the cross-cultural analysis is one of the strengths, this is also a limitation in itself, as only two ethnicities were compared.

The result of this study is in line with the proposal that empathy has a mediating role on mindfulness. Literature shows unlimited studies on mindfulness as a mediation effect. However, to the best of our knowledge, this is the first study to examine the mediating role of empathy, its effect on mindfulness and burnout in two different ethnicities. A strong negative effect of mindfulness was demonstrated on the academic burnout.

Recommendations

This study could be utilized by the health care professionals to design programs encouraging empathy and enhancing mindfulness. Furthermore, current study has studied the differences between two ethnic groups, Future studies should further validate the differences among more ethnic groups.

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