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## **Emotional exhaustion and its consequences: a comparative study of nurses in India and China**

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**Abstract:** We explore the impact of emotional exhaustion on job performance, job satisfaction, and depression in two collectivist societies. Specifically, we investigate the role of organisational commitment as a mediator and as a moderator of the relationship between emotional exhaustion and its consequences. Data were collected from 683 nurses in India and 451 nurses in China. Emotional exhaustion exerted significant direct influence on all criterion variables beyond the impact of age and marital status for both samples. Results in general support the mediation hypothesis for both samples. Commitment was also found to moderate the relationship between emotional exhaustion, job satisfaction, and depression among Chinese nurses but not among Indian nurses. The results seem to suggest differential context effects between India and China in the etiology of emotional exhaustion. More broadly, the findings endorse differences within collectivist cultures. Implications of the findings for future research are discussed.

**Keywords:** emotional exhaustion; organisational commitment; mediation; moderation; non-western collectivist cultures; comparison of India and China.

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## 1 Introduction

Emotional exhaustion has been central to the phenomenon of burnout and has been shown to influence people's behaviour in organisations quite broadly (Maslach et al., 2001). Nurses bear the brunt of health care delivery around the globe and their performance, satisfaction, and mental health have profound implications for the quality of health care wherever it is delivered. Regardless of the far-reaching impact of emotional exhaustion, authoritative understanding of the etiology of burnout is confined to the individualist societies of the West (Khamisa et al., 2013; Maslach et al., 2001; Schaufeli et al., 2009). Given the documentation that individualist and collectivist societies differ significantly in their display of organisational behaviour, it is imperative that we test our models of organisational behaviour developed mostly in individualist contexts in collectivist cultures to better understand the nuances in their manifestation and to facilitate their usefulness across cultures (Kagitçibasi, 2002). This study is motivated by:

- 1 The need to broaden the context of testing burnout models.
- 2 The desire for a more comprehensive understanding of organisational commitment both as a mediator and as a moderator and document context differences across two cultures.
- 3 The benefit of locating the study in India and China which together account for over 75% of health care delivery in Asia.
- 4 The opportunity to compare the model's performance in two collectivist societies with uniquely different cultures.

It is a constructive replication and extension of the study of emotional exhaustion by Cropanzano and his colleagues (2003). It is constructive in the sense that in addition to testing the mediating role of organisational commitment, we are exploring its moderator role. We are also extending the scope of the study by locating it in collectivist contexts but in two different cultures, that of India and China, and expanding the portfolio of criterion variables.

Health care is becoming a major area of investment in both India and China due to their rapid economic growth (Yip and Mahal, 2008) and increasing demand for timely and high quality health care (Yun et al., 2010). Over the past decade the governments of India and China injected substantial new public funds 1 to 2% of their GDPs-into health care (Shah and Jenkins, 2000). It is becoming a cause for concern as these demands increase the stress levels of health care providers resulting in poor mental health such as burnout and depression. The study of health care professionals in India and China have indicated that burnout problems have been severe and on the increase, due to excessive job demand and huge patient-nurse ratio (Kar and Suar, 2014; Li et al., 2003; Sharma, 2007). The paucity of research dealing with issues of mental health in the developing world creates either a policy vacuum in dealing with such problems or a choice of inappropriate and ineffective solutions developed in the West (Khamisa et al., 2013; Shah and Jenkins, 2000). India and China are large economies – ranked 7th and 2nd in terms of their GDP according to the United Nations – making a significant global impact and upending the global economic order (Bardhan, 2009). Yet we do not have much empirical research documenting organisational behaviour in these two ancient Asian societies, and much less with a comparative optic (Kar, and Suar, 2014). It has also been documented that health care research performed in the West may not be culturally relevant to either Indian or Chinese context of healthcare (Higgins et al., 2007). It has been known that the parameters surrounding health care delivery in individualist societies such as Australia and Britain are quite different from delivering health care in collectivist societies such as India and China (Jenkins and Barrett, 2004). In other words, there is a need for further research about nursing across non-estern cultures (Higgins, et al., 2007). Apart from the fact that both India and China are large Asian economies that have attained nationhood around the same time and are collectivist in their cultural orientation, there are important differences such as population diversity, social norms, health care traditions and provision that would warrant comparison (Cooke, 2010; Fabrega, 2001; Higgins et al., 2007; Hsiao, 1995; Lu et al., 2007). Though being collectivist, both countries have expressed their collectivism differently. India followed more of a

contextual road toward an in-group collectivism while China followed more of a cultural road toward an institutional form of collectivism (Chand and Ghorbani, 2011). In addition, it has been pointed out that structural features have caused both India and China to achieve different health system outcomes over the past quarter century (Bardhan, 2008; Yip and Mahal, 2008). Consequently, our interest is to focus on both India and China to generate empirical evidence on emotional exhaustion and its behavioural and psychological consequences in the nursing profession.

### *1.1 Theory and hypotheses*

There is consistent support for the notion that inequity in social exchange is associated with burnout (Janssen et al., 2010; Van Dierendonck et al., 2001). Emotional exhaustion is the feeling of being emotionally over-extended and exhausted by ones' work resulting in loss of energy, or chronic fatigue (Maslach, 1978). Nurses become emotionally exhausted when there is ongoing stress due to excessive demands at work with inadequate support, insufficient resources, and inability to control either the pace or the volume of work (Halbesleben and Buckley, 2004; Karasek, 1979). Such working conditions lead to the perception that the exchange between the nurse and the hospital is no longer fair and that the health care facility she works for is no longer deserving of her commitment (Kar and Suar, 2014; Lu et al., 2007). Research found a negative association between emotional exhaustion and organisational commitment supporting this observation (Cropanzano et al., 2003; Lee and Ashforth, 1996).

The conservation of resources (COR) model would suggest that as excessive demands deplete energy and exhaust the nurse, she will take steps to conserve her resources and cut back on her performance (Hobfoll, 1989), feeling less satisfied with her job and depressed about her condition. Empirical studies show that emotional exhaustion seriously affects job performance, job satisfaction, and exacerbate depression in the nursing profession (Baba et al., 1991; Parker and Kulik, 1995; Sheward et al., 2005; Tourigny et al., 2010). Most of this support however is located in studies from what we call individualist societies of the West. There is little evidence that such findings are corroborated in collectivist societies like India and China (Maslach et al., 2001; Schaufeli et al., 2009). While individual level phenomenon such as mental health allows for universal theorising, it is important to develop an empirical base for such theorising across cultures that are different from the original test sites (Bhagat et al., 2012). That is how we empirically establish the universality of such concepts. Our interest is to do just that-empirical validation of mental health episodes in these two collectivist societies.

We argue that when someone experiences emotional exhaustion, it is followed by lower job performance. The COR model would support that as the nurse decides to pull back on her performance to conserve her resources. This behaviour is validated by the perception that the parameters of exchange between her and the hospital have shifted toward greater inequity and that she has to reduce her input to bring balance back to the exchange (Hobfoll, 1989). In individualist societies, such reasoning is normal. Research shows a negative link between emotional exhaustion and both task performance and organisational citizenship behaviour (Halbesleben and Bowler, 2007). However, research done among Chinese nurses revealed inconsistent trends in the relationships among variables related to occupational stress and organisational commitment (Lu et al., 2007). While this hypothesis has indeed been tested among Western nurses, we want to explore the relationship among nurses in India and China to see whether these patterns, justified

by theory, exist as they are or whether they are sensitive to the context. There is reason to believe that in collectivist societies, such a relationship may not be so straightforward (Higgins et al., 2007; Walumbwa and Lawler, 2003). An obligation toward the collectivity and a transcendental purpose to work may dispose a nurse to become less sensitive to emotional exhaustion. Familiar interpretations of performance behaviour in light of social exchange theory may have to be nuanced differently.

Hypothesis 1a Emotional exhaustion is negatively related to job performance.

Job satisfaction is defined as contentment that an employee feels after a need is fulfilled (Williams and Sandler, 1995). Nurses start to feel dissatisfied with their jobs, when the job demands are excessive (Aiken et al., 2002; Lu et al., 2007). Piko (2006) found that among all the burnout components, emotional exhaustion is most strongly related to job dissatisfaction. However there is empirical inconsistency in this literature. A one-year longitudinal study reported that emotional exhaustion is unrelated to job satisfaction (Wright and Cropanzano, 1998). Other researchers showed that job satisfaction remained relatively high despite the high prevalence of burnout and suggested that further research is needed to ascertain why job satisfaction remains high in the presence of burnout (Kumar et al., 2007). Again, collective societies may configure these relationships differently (Walumbwa and Lawler, 2003). It sets the stage for a more complex relationship between burnout and job satisfaction. Therefore, this relationship is worth further testing.

Hypothesis 1b Emotional exhaustion is negatively related to job satisfaction.

Depression is primarily viewed in terms of negative feelings, self-depreciation, self-destructive thoughts, and social withdrawal (Leiter and Durup, 1994). While burnout is an outcome of the quality of the work environment, depression is considered a global state that encompasses virtually all spheres of one's life (Tourigny, et al., 2010). This suggests that the process of being emotionally exhausted and burning out of work may trigger similar yet more pernicious thoughts that affect one's total life. While depression and burnout are closely related, they are certainly not identical twins (Brenninkmeyer et al., 2001). Researchers found significant positive association between symptoms of depression and high emotional exhaustion (Baba et al., 1999). It was also suggested that symptoms of depression increases with high level of emotional exhaustion in the absence of effective coping mechanisms (Tourigny et al., 2010). What is not clear is whether these observations hold true in collectivist societies where mental health outcomes manifest differently (Shah and Jenkins, 2000). Therefore, we posit the following hypothesis.

Hypothesis 1c Emotional exhaustion is positively related to depression.

Organisational commitment has been receiving considerable attention in the literature due to its significant impact on work related attitudes and its role as a mediator and moderator in different work settings (Chirumbolo and Areni, 2005; Chiu and Francesco, 2003; Restubog et al., 2006, Tourigny et al., 2013). Furthermore, it appears likely that organisational commitment's role as mediator or moderator may be influenced by cultural context. Yousaf (2000) found significant results in testing the mediating role of organisational commitment between leadership behaviour and both job satisfaction and job performance in the Middle East. Cropanzano and his colleagues (2003) also found

that organisational commitment was a significant mediator between emotional exhaustion and work related attitudes in the West. Mattila (2003) used affective commitment as a moderator which reduced the spillover effects of service failures on future loyalty behaviours. Leong et al. (1996), deployed organisational commitment as a moderator to buffer the relationship between occupational stress and stress outcomes. More recently, Namasivayam and Zhao (2007) have found organisational commitment to moderate the relationship between work-family conflict and job satisfaction among hospitality employees in India. Previous research suggests that employees with high organisational commitment enjoy more job satisfaction and mental and physical health, and have lower intentions to quit (Begley and Czajka, 1993). Siu (2002) demonstrated that organisational commitment interacts with stressors to influence job satisfaction and physical well-being. Theoretically, emotional exhaustion triggered by its work-related antecedents leads to cognitions of organisational inequity resulting in the diminution of performance and satisfaction, and giving rise to feelings of depression. Social exchange theory would support such mediation for organisational commitment where commitment becomes the medium of exchange between the nurse and the hospital management. On the other hand, if one were to attribute causes unrelated to stress for the development of organisational commitment, such as stakes in the organisation and a sense of obligation, it stands to reason that the presence of organisational commitment may indeed alter both the strength and pattern of relationship between emotional exhaustion and its consequences. Whether organisational commitment is a mediator or a moderator may indeed depend upon the context in which it is developed and displayed. Consequently, we are extending the mediation model proposed by Cropanzano et al. (2003) to include moderation as well and testing it in two different non-western collectivist contexts.

Consequently, we hypothesise that:

- Hypothesis 2a    Organisational commitment will mediate the relationship of emotional exhaustion and job performance.
- 2b    Organisational commitment will mediate the relationship of emotional exhaustion and job satisfaction.
- 2c    Organisational commitment will mediate the relationship of emotional exhaustion and depression.
- Hypothesis 3    Organisational commitment will moderate the effect of emotional exhaustion on:
- a    Job performance, such that high organisational commitment will mitigate the effect of emotional exhaustion whereas low organisational commitment will exacerbate this relationship.
- b    Job satisfaction, such that high organisational commitment will alleviate the effect of emotional exhaustion on job satisfaction whereas low organisational commitment will exacerbate this relationship and
- c    Depression, such that high organisational commitment will alleviate this effect and low organisational commitment will exacerbate this relationship.

## 2 Method

### 2.1 Sample and procedures

The present study was conducted among nurses in India and China as part of a larger program of research (Tourigny et al., 2010). Data were gathered from 683 nurses in India for a response rate of 68 percent, and 550 nurses in China for a response rate of 69% by means of a structured questionnaire. The corresponding author was given a letter of introduction to the hospitals by the director of the Institute in India he was affiliated with. Large (> 500 beds) and medium (> 100 beds) size full service hospitals were contacted in the state of Uttar Pradesh and in the national capital Delhi, and three in Lucknow (two large and one medium), and one large hospital in Delhi participated in the study. A research assistant went to each hospital to distribute the questionnaires to the nursing staff with the help of the nursing supervisor and the Human Resources Administrator. The research assistant collected the completed questionnaire from the nursing stations after two days. In China, the corresponding author's former student had professional connections in the health care sector in both Beijing and Dalian. Through her contacts three large state owned general hospitals, two in Dalian and one in Beijing and some smaller specialised clinics in Dalian agreed to participate in the survey. Questionnaires were delivered to the hospitals and were distributed to the nurses by the nursing supervisor. Completed questionnaires were personally collected by an assistant over a period of a week. For the Chinese sample, we retained only the respondents from the state owned general hospitals ( $n = 451$ ) for purposes of comparison. A vast majority of both samples is female. There were 93% females and 7% male for nurses who indicated their gender in the Indian sample, while all the respondents in the Chinese sample were female. 72% of the Indian nurses and 74% of the Chinese nurses were married. The mean age for the Indian respondents is 37 with a standard deviation of 11 and the mean age of Chinese respondents is 32 with a standard deviation is nine.

### 2.2 Measures

Identical questionnaires were translated into Hindi and Chinese respectively by bilingual organisational behaviour scholars. The translated versions had been verified and back-translated into English before data collection to ensure accuracy of meaning.

- *Demographic control variables.* To minimise the catalytic role of demographics in the hypothesised relationships, we controlled for age and marital status.
- *Emotional exhaustion.* Emotional exhaustion is measured with nine items from the Maslach burnout inventory (MBI), using a scale ranging from one (strongly disagree) and five (strongly agree) for both samples (Maslach and Jackson, 1981). A sample item is: "I feel emotionally drained from my work". The coefficient alpha reliability value for the Indian sample is .77 and for the Chinese sample, .88.
- *Organisational commitment.* Organisational commitment for both samples is measured using the 15 items organisational commitment questionnaire (OCQ), by Mowday et al. (1979). A five point Likert scale ranging from one (strongly agree) and five (strongly disagree) is employed. A sample item is 'I am proud to tell others I

work in this hospital'. The coefficient alpha reliability value for the Indian sample is .70 and for the Chinese sample, .82.

- *Job performance ratings.* Job performance ratings were measured by asking the respondents to report their most recent performance ratings. Single item measures are generally viewed as more unbalanced than scaled measures although their use in the literature is not uncommon (Nagy, 2002; Wanous et al., 1997). But this is a global rating, a metric incorporating many aspects of performance. We also found a significant positive correlation between job performance rating and attitudinal measures of organisational commitment and job satisfaction. More importantly, we found significant negative correlation with emotional exhaustion and depression as reported in Table 1. These results lend validity and enhance our confidence in the measure of individual performance rating in this study.
- *Job satisfaction.* Job satisfaction is measured for both samples with 15 items covering different facets of job satisfaction by using a five point scale ranging from one (least satisfactory) and five (most satisfactory) (Tourigny et al, 2010). Sample items in the questionnaire include: 'Sense of competence in the job', 'satisfaction from the current income', the 'degree of challenge', and the amount of appreciation/recognition received from others'. The coefficient alpha reliability value for Indian sample is .78 and for the Chinese sample, .81.
- *Depression.* Depression was measured with 20 items (Radloff, 1977) from the Center for Epidemiological Studies Depression Survey (CES-D) using a four-point frequency scale ranging from one (rarely or none of the time) to four (most or all of the time). The CES-D consists of a list of generic symptoms of depression. A sample item of the survey is: 'I had trouble keeping my mind on what I was doing'; 'I thought my life had been a failure'. The coefficient alpha reliability value for the Indian sample is .74 and for the Chinese sample, .88.

**Table 1** Means, standard deviation, reliability, and correlations: India and China

Variables	1	2	3	4	5	6	7	M	SD	Alpha
1 Age	-	.27**	.16**	.18**	.03	.11*	-.006	31.88	7.80	-
2 Marital status	.39**	-	.05	-.02	-.03	-.02	.03	1.91	1.57	-
3 Emotional exhaustion	.10**	.13**	-	-.35**	.22**	-.29**	.47**	3.23	.80	.88
4 Organisational commitment	.14**	.12**	-.17**	-	-.16**	.43**	-.42**	3.67	.56	.82
5 Performance ratings	.02	.09*	-.19**	.20**	-	-.17**	.18**	2.35	.75	-
6 Job satisfaction	.03	.01	-.07	.18**	.10*	-	-.29**	3.09	.50	.81
7 Depression	-.09*	-.02	.33**	-.22**	-.21**	-.16**	-	2.15	.57	.88
M	36.66	1.90	2.15	3.58	3.52	3.26	1.05	-		
SD	10.67	.65	.89	.68	1.61	.55	.45		-	
Alpha	-	-	.77	.70	-	.78	.74			-

Notes: \* $p < .05$ , \*\* $p < .01$ , Indian data below the diagonal.



In addition, demographic variables indicating age, marital status, and education were collected using appropriate questions.

### 3 Results

We use a two-study format for presenting the results. Study 1 focuses on Indian nurses and study 2, on Chinese nurses. In both studies, we present the direct effects first, followed by tests for both mediation and moderation in that order. Comparative analysis of the findings will be presented in the discussion. Table 1 presents the correlation matrix for Indian nurses ( $n = 683$ ) below the diagonal, and for Chinese nurses ( $n = 451$ ) above the diagonal. Means, standard deviations and alpha values for Indian nurses are presented in rows and for Chinese nurses in columns.

#### 3.1 Study 1: Indian nurses

##### 3.1.1 Descriptive statistics and correlations

Results in Table 1 for Indian nurses demonstrate that all of the measures have acceptable reliability coefficients. We found that age is positively related to emotional exhaustion, organisational commitment, and negatively related to depression. Marital status is positively related with emotional exhaustion, organisational commitment, and job performance. As expected, emotional exhaustion is negatively related to organisational commitment, job performance, and positively related to depression. However, contrary to our expectation, there was no significant relationship between emotional exhaustion and job satisfaction. Organisational commitment is negatively related to emotional exhaustion, depression, and positively related to performance and job satisfaction.

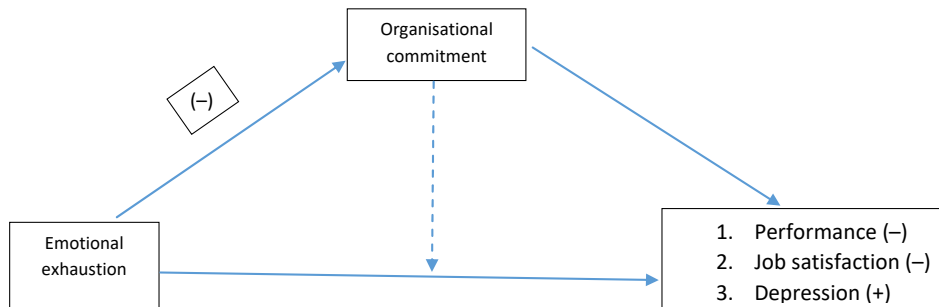
##### Tests of hypothesis

- We hypothesised emotional exhaustion to be a negative predictor of job performance after controlling for demographic variables. Hierarchical regression was used to test this hypothesis. As shown in Table 2, emotional exhaustion has a significant negative influence on job performance. The overall model was also significant  $F = 7.46, p < .01$ . Therefore, Hypothesis 1(a) is accepted.
- We hypothesised emotional exhaustion to be a negative predictor of job satisfaction. Hierarchical regression was used to test this hypothesis. As shown in Table 2 this hypothesis was not supported. The overall model was also non-significant,  $F = 1.30, p > .05$ . Therefore Hypothesis 1b is rejected. However there is the possibility of indirect and mediation effect of emotional exhaustion on job satisfaction because the proposed mediator organisational commitment has a significant positive effect on job satisfaction.
- We hypothesised emotional exhaustion to be a positive predictor of depression. As shown in Table 2, emotional exhaustion was a significant predictor of depression after controlling for demographic variables. The overall model was also significant  $F = 33.01, p < .01$ . Therefore hypothesis 1c is supported.

### 3.1.2 Mediation test

We have suggested that organisational commitment would mediate the relationship between emotional exhaustion and the criterion variables job performance, job satisfaction and depression as shown in Figure 1. The mediation effect is tested using the Baron and Kenny (1986) protocol. The first requirement is that emotional exhaustion (predictor) must be significantly related to organisational commitment (mediator). Second, emotional exhaustion must be related to each outcome variables (criterion). Third, when both emotional exhaustion and the mediator are simultaneously entered into the equation, the relationship between emotional exhaustion and the criterion variable must be appreciably smaller than it is when emotional exhaustion is the sole predictor. After satisfying these conditions, it is important to test the significance of the indirect path, which is the indirect effect of emotional exhaustion through organisational commitment, by removing the variance of the direct effect. A formula for conducting this significance test has been presented by Baron and Kenny (1986), and Sobel (1982). These formulas yield the critical ratio or Z score which is compared to the critical value from the standard normal distribution appropriate for a given alpha level. The Z score, which can be compared with a priori critical value probability for the one-tailed ( $p < .05$ ), is  $\pm 1.96$  or for the two-tailed ( $p < .01$ ) is  $\pm 2.58$ .

**Figure 1** Theoretical model for the mediation and moderation analysis (see online version for colours)



Tables 2 and 3 show the hierarchical regression model and the full mediation test checking whether a mediator (organisational commitment) carries the influence of the independent variable (emotional exhaustion) on the dependent variables job performance, job satisfaction, and depression. These tests of Hypotheses 2a, 2b and 2c were done in three steps. We excluded step 1 from Table 3 because it duplicated step 1 in Table 2 throughout the testing of these hypotheses.

We tested the model shown in Figure 1, by first entering the control variables into the equation in step 1. Emotional exhaustion followed in step 2. As shown in Table 2, regression analysis testing main effects found that emotional exhaustion significantly predicted organisational commitment. The overall model was also significant  $F = 14.69$ ,  $p < .01$ . Therefore the first criterion for mediation effect is satisfied as outlined by Baron and Kenny (1986).

- Emotional exhaustion and job performance. Table 3 displays the mediation test. For testing Hypothesis 2a which states that commitment mediates the relationship between emotional exhaustion and job performance, we proceeded by entering the control variables first, organisational commitment next, and emotional exhaustion in step 3. The results show that the regression coefficient for emotional exhaustion is significant, although smaller in size than it was when commitment was excluded (see Tables 2 and 3). Following from Holmbeck (2002), we compute the significance of indirect path by conducting the Sobel test. The obtained Z score was significant at 3.36,  $p < .01$ . Therefore, despite the fact that emotional exhaustion shows a significant regression coefficient, it can be concluded that organisational commitment is a significant mediator thereby supporting Hypothesis 2a.
- Emotional exhaustion and job satisfaction. As noted earlier, emotional exhaustion has no direct significant relation with job satisfaction. Nevertheless, it is recommended to proceed with mediation to test the indirect path of emotional exhaustion by means of organisational commitment. As shown in Table 3 organisational commitment is a positive predictor of job satisfaction. Therefore, by conducting the Sobel test for the indirect path, the obtained Z score was significant 3.32,  $p < .01$ . Thus, the indirect path did exert a significant effect. Consequently, results support the mediation effect of organisational commitment between emotional exhaustion and job satisfaction, thereby supporting Hypothesis 2b.
- Emotional exhaustion and depression. Hypothesis 2c posited that commitment mediated the relationship of emotional exhaustion and depression. Results show that the regression coefficient for emotional exhaustion is smaller in size than it was when commitment was excluded. The indirect path for emotional exhaustion through organisational commitment was also significant and the Z score was 3.23,  $p < .01$ . This indicates that organisational commitment partially mediates the relationship between emotional exhaustion and depression, thereby supporting Hypothesis 2c. Findings are presented in Tables 2 and 3.

In summary, the results show that there is a direct and significant effect of emotional exhaustion on performance and depression with the exception of job satisfaction. In addition, the mediating role of the organisational commitment is supported for all of the outcome variables and hence the study endorses the Cropanzano et al. (2003) mediation for Indian nurses. However, support for mediation does not automatically negate support for moderation. Given theoretical justifications and empirical corroboration cited earlier, we proceeded to test the moderation hypothesis.

### 3.1.3 Moderation test

As illustrated in Figure 1, we use hierarchical moderated regression to assess the predictive impact of emotional exhaustion and the moderator role of organisational commitment on the relationship between emotional exhaustion and job performance, job satisfaction, and depression. Results are presented in Table 4.

**Table 2** Indian nurses: hierarchical regression results for mediation analysis

Variables	Organisational commitment			Job performance			Job satisfaction			Depression		
	B	SEb	$\beta$	B	SEb	$\beta$	b	SEb	$\beta$	b	SEb	$\beta$
Step 1												
Age	0.01	0.00	0.10*	-0.00	0.01	-0.02	0.00	0.00	0.03	-0.00	0.00	-0.10*
Marital status	0.09	0.04	0.09*	0.23	0.10	0.10*	0.00	0.04	0.00	0.01	0.03	0.01
R2		0.02			0.01			-0.00			0.01	
Step 2												
Age	0.01	0.00	0.12**	-0.00	0.01	-0.01	0.00	0.00	0.04	-0.01	0.00	-0.12**
Marital status	0.11	0.04	0.10*	0.29	0.10	0.12**	0.01	0.04	0.01	-0.01	0.03	-0.02
Emotional exhaustion	-0.15	0.03	-0.19***	-0.28	0.07	-0.15***	-0.04	0.02	-0.07	0.17	0.02	0.35***
R2		0.06			0.03			0.00			0.12	
$\Delta R^2$		0.04			0.02			0.01			0.12	

Notes: \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

**Table 3** Indian nurses: mediation test

Variables	Job performance			Job satisfaction			Depression		
	<i>b</i>	<i>SEb</i>	$\beta$	<i>b</i>	<i>SEb</i>	$\beta$	<i>b</i>	<i>SEb</i>	$\beta$
<b>Step 2</b>									
Age	-0.01	0.01	-0.04	0.00	0.00	0.01	-0.00	0.00	-0.08*
Marital status	0.21	0.10	0.09*	-0.01	0.04	-0.02	0.02	0.03	0.03
Organisation commitment	0.47	0.09	0.19***	0.15	0.03	0.18***	-0.14	0.02	-0.22***
R2		0.04			0.04			0.06	
$\Delta$ R2		0.04			0.03			0.05	
<b>Step 3</b>									
Age	-0.00	0.01	-0.03	0.00	0.00	0.02	-0.00	0.00	-0.10**
Marital status	0.25	0.10	0.10*	-0.01	0.04	-0.01	-0.00	0.03	-0.00
Organisation commitment	0.42	0.09	0.17***	0.14	0.03	0.17***	-0.01	0.02	-0.15***
Emotional exhaustion	-0.22	0.07	-0.11**	-0.02	0.02	-0.04	0.15	0.02	0.30***
R2		0.06			0.03			0.14	
$\Delta$ R2		0.01			0.00			0.10	

Notes: The step one is excluded, as it is identical to step 1 for mediation test in Table 2. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

**Table 4** Indian nurses: hierarchical moderated regression results

	<i>Dependent variables and standardised beta coefficients</i>		
	<i>Job performance</i>	<i>Job satisfaction</i>	<i>Depression</i>
Step 1			
Age	-0.02	0.03	-0.01
Marital status	-0.10*	-0.00	0.02
Step 2			
Emotional exhaustion	-0.12**	-0.04	0.32***
Organisation commitment	0.17***	0.17***	-0.15***
Step 3			
Emotional exhaustion × Organisation commitment	-0.04	0.10*	0.01
Step 1 ΔR2	0.01*	0.00	0.01*
Step 2 ΔR2	0.05***	0.03***	0.14***
Step 3 ΔR2	0.00	0.01*	0.00

Notes: \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

The hierarchical regression analysis for the Indian nurses includes the two-way interaction of emotional exhaustion and organisational commitment. The demographic variables age and marital status were entered in step 1 of the regression. The predictors, emotional exhaustion and commitment were entered in step 2. Results presented in Table 4 show that emotional exhaustion was a significant predictor of job performance, and depression, but not of job satisfaction.

The two-way interaction term of emotional exhaustion and organisational commitment was entered in step 3. Contrary to our expectation no significant results were found for the moderator role of commitment between emotional exhaustion and any of the outcome variables for the Indian nurses.

We concluded that there is no evidence to support Hypotheses 3a, 3b and 3c for the Indian nurses. In summary, our findings endorse the mediation model of Cropanzano and his colleagues (2003) among Indian nurses thus extending the model's viability in a collectivist context.

### 3.2 Study 2: Chinese nurses

#### 3.2.1 Descriptive statistics and correlations

Table 1 presents the correlation matrix for Chinese nurses ( $n = 451$ ) above the diagonal. Means, standard deviation, correlations among all the variables, and alpha values are in vertical columns. All of the measures demonstrate acceptable levels of reliability. Additionally, as expected, emotional exhaustion is positively correlated with depression and negatively with organisational commitment and job satisfaction. However, contrary to expectation, emotional exhaustion shows a significant positive correlation with job performance. Organisational commitment is negatively related to emotional exhaustion and depression and positively related to job satisfaction. Again contrary to our expectation, organisational commitment is negatively related with job performance. We are already beginning to see differences in the relationships among study variables in the two apparently collectivist societies.

**Table 5** Chinese nurses: hierarchical regression results for mediation analysis

Variables	Organisational commitment			Job performance			Job satisfaction			Depression		
	b	SEb	$\beta$	b	SEb	$\beta$	b	SEb	$\beta$	b	SEb	$\beta$
<b>Step 1</b>												
Age	0.01	0.00	0.19***	0.10	0.10	0.05	0.10	0.00	0.09*	0.00	0.00	0.10
Marital status	-0.02	0.02	-0.07	-0.02	0.02	-0.04	-	0.02	-0.05	0.01	0.02	0.03
R2		0.03			-0.00			0.00			-0.00	
<b>Step 2</b>												
Age	0.02	0.00	0.25***	0.00	0.10	0.02	0.10	0.00	0.13*	-0.00	0.00	-0.01
Marital status	-0.02	0.02	-0.07	-0.02	0.02	-0.04	-0.02	0.02	-0.06	0.10	0.02	0.03
Emotional exhaustion	0.28	0.03	-0.38***	0.20	0.05	0.21***	-0.19	0.03	-0.31***	0.33	0.03	0.47***
R2		0.17			0.04			0.09			0.21	
$\Delta R2$					0.04			0.09			0.22	

Notes: \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

**Table 6** Chinese nurses: mediation test

Variables	Job performance			Job satisfaction			Depression		
	<i>b</i>	<i>SEb</i>	$\beta$	<i>b</i>	<i>SEb</i>	$\beta$	<i>b</i>	<i>SEb</i>	$\beta$
<b>Step 2</b>									
Age	0.01	0.01	0.07	0.00	0.00	0.03	0.01	0.00	0.06
Marital status	-0.02	0.02	-0.05	-0.01	0.02	-0.02	0.00	0.02	0.01
Organisation commitment	-0.23	0.07	-0.18***	0.38	0.05	0.43***	-0.40	0.05	-0.42***
R2					0.18				0.16
$\Delta R2$					0.18				0.17
<b>Step 3</b>									
Age	0.00	0.01	0.02	0.00	0.00	0.05	-0.00	0.00	-0.02
Marital status	-0.02	0.02	-0.04	-0.01	0.02	-0.02	0.00	0.01	0.02
Organisation commitment	-0.13	0.07	-0.10*	0.33	0.05	0.37***	-0.23	0.05	-0.26***
Emotional exhaustion	-0.20	0.05	0.21***	-0.09***	0.04	-0.14*	0.29	0.04	0.40***
R2					0.19				0.21
$\Delta R2$					0.04				0.13

Notes: The step one is excluded, as it is identical to step 1 for mediation test in Table 5. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .



*Tests of hypothesis*

- As shown in Table 5 emotional exhaustion was a significant predictor of job performance beyond the effect of control variables. The overall model was also significant  $F = 6.92, p < .01$ . Hypothesis 1a is supported.
- Our results show that emotional exhaustion has a significant negative influence on job satisfaction. The overall model was significant as well  $F = 12.68, p < .001$ . Hypothesis 1b is also supported.
- As proposed in Hypothesis 1c, emotional exhaustion was a significant predictor of depression beyond the effect of control variables. The overall model was also significant  $F = 34.30, p < .001$ . Hypothesis 1c is also supported.

*3.2.2 Mediation test*

Tables 5 and 6 show the full mediation test as detailed in study 1. Hypotheses 2a, 2b and 2c were tested in three steps. We excluded step 1 from Table 6 because it duplicated step 1 in Table 5 throughout the testing of these hypotheses. We repeated the steps described in study 1 by entering the control variables in step 1 and emotional exhaustion in step 2. As shown in Table 5 emotional exhaustion has a significant negative influence on organisational commitment after the control variables. The overall model was also significant  $F = 27.44, p < .001$ . Therefore, the first criterion for mediation according to Baron and Kenny (1986) is satisfied for the Chinese nurses.

- Emotional exhaustion and job performance: Hypothesis 2a predicted that commitment mediates the relationship between emotional exhaustion and job performance. To test this hypothesis, we proceeded to enter the control variables first, organisational commitment next, and finally emotional exhaustion in the last step. The results show that the regression coefficient for emotional exhaustion was significant and no changes were found when commitment was excluded. Results are presented in Tables 5 and 6. Furthermore, contrary to our expectation, the Z score for the indirect path was not significant with a low value of acceptable threshold 1.82,  $p > .05$ . Therefore Hypothesis 2a is not supported.
- Emotional exhaustion and job satisfaction: Hypothesis 2b posited that commitment mediates the relationship of emotional exhaustion and job satisfaction. The regression coefficient for emotional exhaustion was significant but smaller in size than it was when commitment was excluded. Results are presented in Tables 5 and 6. However, despite the fact that emotional exhaustion shows a significant direct effect on job satisfaction, the Z score for the indirect path revealed by the Sobel test was significant at 5.17,  $p < .01$ . Therefore, it can be concluded that organisational commitment is a significant mediator of the relationship between emotional exhaustion and job satisfaction. Consequently, Hypothesis 2b is supported.
- Emotional exhaustion and depression: Hypothesis 2c proposed that commitment mediated the relationship between emotional exhaustion and depression. Results show that the regression coefficient for emotional exhaustion is significant but smaller in size when commitment was excluded. Results are presented in Tables 5 and 6. The value for the indirect path from the Sobel test was also significant, 4.12,

$p < .01$ . Therefore, the findings are consistent with commitment partially mediating the relationship between emotional exhaustion and depression. Consequently Hypothesis 2c is supported.

In summary, the results for the Chinese sample support the view that organisational commitment plays an important role as a mediator between emotional exhaustion and the outcome variables with the exception of job performance, although the pattern of results differ from that of the Indian nurses.

### 3.2.3 Moderation test.

Hypothesis 3a, 3b and 3c were tested using hierarchical regression analysis. The demographic variables age and marital status were entered in step 1. The independent variables, emotional exhaustion and commitment were entered in step 2. Results presented in Table 7 show that emotional exhaustion is a predictor of job performance, job satisfaction, and depression. The results also show that commitment is a predictor of job performance, job satisfaction, and depression.

**Table 7** Chinese nurses: hierarchical moderated regression results

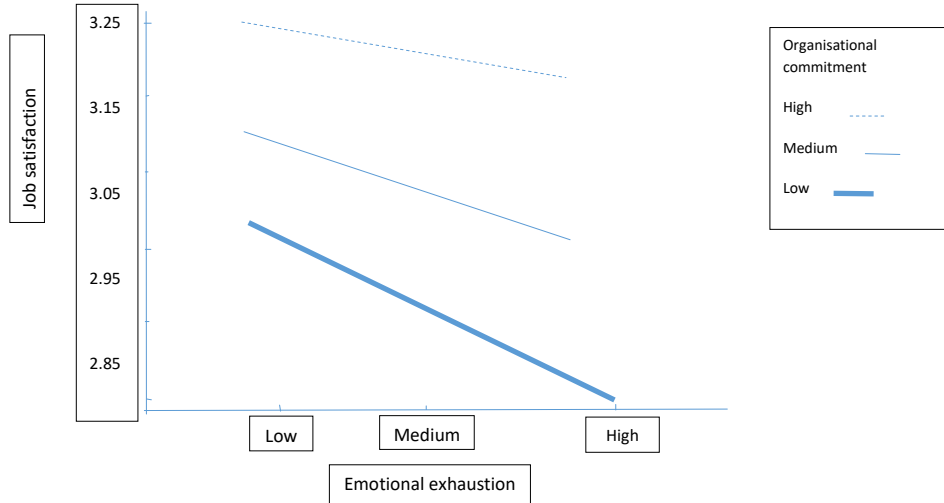
	<i>Dependent variables and standardised beta coefficients</i>		
	<i>Job performance</i>	<i>Job satisfaction</i>	<i>Depression</i>
Step 1			
Age	0.03	0.09	-0.01
Marital status	-0.04	-0.05	0.04
Step 2			
Emotional exhaustion	0.21***	-0.14*	0.40***
Organisation commitment	-0.01*	0.37***	-0.26***
Step 3			
Emotional exhaustion × Organisation commitment	-0.04	0.09*	-0.10*
Step 1 $\Delta R^2$	0.00	0.01	0.00
Step 2 $\Delta R^2$	0.07***	0.11***	0.30***
Step 3 $\Delta R^2$	0.00	0.01*	0.01*

Notes: \* $p < .05$ ; \*\*\* $p < .001$ .

The two-way interaction term of emotional exhaustion and organisational commitment was entered in step 3 to test the role of organisational commitment as a moderator between emotional exhaustion and the criterion variables-job performance, job satisfaction, and depression.

For Hypothesis 3a, organisational commitment does not appear to moderate the influence of emotional exhaustion on job performance; thus Hypothesis 3a is not supported. Results are shown in Table 7. For Hypothesis 3b and 3c, results indicate a two-way interaction between emotional exhaustion and organisational commitment in predicting job satisfaction and depression. Therefore Hypothesis 3b and 3c are supported. In order to interpret the direction of the interaction, a slope examination was conducted by plotting the predictive values of job satisfaction and depression against emotional exhaustion for three different levels of organisational commitment.

**Figure 2** Moderation effect of organisational commitment on the relationship between emotional exhaustion and job satisfaction (see online version for colours)



**Figure 3** Moderation effect of organisational commitment on the relationship between emotional exhaustion and depression (see online version for colours)

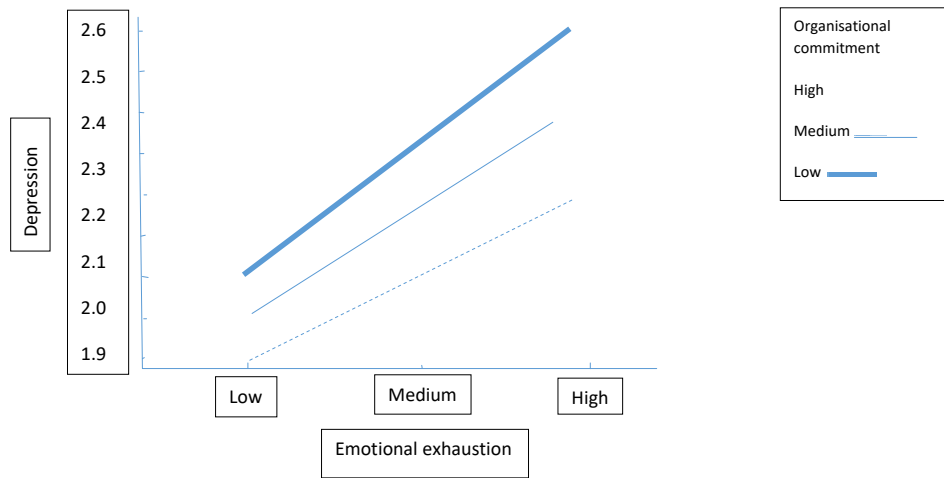


Figure 2 presents the interaction effect for job satisfaction and Figure 3, for depression. The slopes indicate that for nurses whose commitment to the organisation is low to medium, job satisfaction decreases when they are emotionally exhausted. However, when organisational commitment is high, the slope depicts no influence of emotional exhaustion on job satisfaction. Similarly, Figure 3, depict that for nurses whose commitment to the organisation is low to medium, depression increases when nurses are emotionally exhausted. However when organisational commitment is high, the slope shows no influence of emotional exhaustion on depression. Therefore, organisational

commitment seems to buffer the impact of emotional exhaustion on both job satisfaction and depression. This seems to suggest a role for loyalty activation.

In summary, we found a significant role for organisational commitment both as a mediator as well as a moderator in the relationship between emotional exhaustion and its outcomes among Chinese nurses.

## 4 Discussion

Previous research (Cropanzano et al., 2003; Janssen et al., 2010; Tourigny et al., 2010; Wright and Cropanzano, 2003), identified psycho-social factors that may intervene and moderate the negative impacts of emotional exhaustion on psychological and behavioural outcomes. The results of this study corroborate that observation. Specifically, organisational commitment was a significant mediator of the relationship between emotional exhaustion and its outcomes across studies regardless of context. In addition, we show significant moderator effects for psychological outcomes that are sensitive to the context. Our contribution comes from extending the model to test the role of organisational commitment both as a mediator and moderator, with appropriate theoretical justification in two non-western collectivist cultures. To our knowledge this is the first study that explores the role of organisational commitment both as a mediator and as a moderator in the same profession in two different collectivist societies using a comparative lens. Our findings also seem to suggest that when it comes to organisational behaviour, all collective societies are not the same. We show both commonalities and differences between India and China among members of the same profession.

Despite the value contribution of this research mentioned above, the study has some limitations. It is a cross-cultural study and all of our perceptual measures are self-reports, giving rise to concerns of common method variance. Second, job performance measure using a single item rating approach may be more unstable compared to scaled measures. However, we were guided by the observation that single item measures are useful where face validity is important (Nagy, 2002; Wanous et al., 1997).

### 4.1 Research implications

Our findings confirm the value of social exchange theory and the COR model in explaining organisational behaviour among nurses. We know from the literature that time pressure, excessive job demands, and lack of material support contribute to emotional exhaustion which in turn affects one's commitment to the organisation. Indeed, these are the outcomes of an unbalanced social exchange relationship between the individual and the organisation. Empirical data used in this study supported the negative and positive influence of emotional exhaustion on organisational commitment, job performance, job satisfaction, and the symptoms of depression in general. We did not find a significant relationship between emotional exhaustion and job satisfaction among Indian nurses, which appears consistent with the earlier observations of Wright and Cropanzano (1998).

These results clearly demonstrate that western management and organisational behaviour theory in the context of mental health among Indian nurses seems to be independent of the individualist-collectivist cultural dichotomy. One of our objectives was to examine the role of organisational commitment as a mediator in the context of social exchange theory. We found for both samples that, emotional exhaustion exerted

influence through organisational commitment in predicting job performance, job satisfaction, and depression with the exception of job performance in the case of Chinese nurses. This study broadened the scope of organisational commitment as a mediator with two added variables, job satisfaction and depression in a cross-cultural context. These findings extend the Cropanzano model and its implications to two different collectivist non-western cultures. Finally, an expanded version of the model was tested to explore a more complex role for organisational commitment as a viable moderator within the same theoretical framework.

While our results did not confirm the proposed moderator for organisational commitment among Indian nurses (see Table 4), it is worth noting that they confirmed significant moderator effects among Chinese nurses, where organisational commitment interacted with emotional exhaustion and moderated the negative and positive effects of emotional exhaustion on job satisfaction and symptoms of depression. The slopes shown in Figure 2, confirm that emotional exhaustion exhibited its negative and positive influence on job satisfaction and depression only under conditions of lower organisational commitment. It is also worth noting that, when organisational commitment was sufficiently high, the influence of emotional exhaustion on job satisfaction and depression diminished considerably as can be seen in Figures 2 and 3. No significant moderation effect of organisational commitment was found for performance. These results provide some evidence that the role of organisational commitment is more complex than previously reported. It appears that when it comes to the impact of emotional exhaustion on performance, organisational commitment mediates this relationship thus endorsing the Cropanzano et al. (2003) interpretation of social exchange theory. In other words, it seems to work quite broadly across cultures with behavioural outcomes of emotional exhaustion (Tourigny et al., 2013). However, when it comes to the impact of emotional exhaustion on psychological outcomes such as job satisfaction and depression, the empirical manifestation of social exchange seems to favour an additional moderator role for organisational commitment. Our results also suggest that social exchange may have different operational meaning in India and China. The Indians take a 'bridging' approach to social exchange motivated by their in-group collectivism while the Chinese take a 'bonding' approach, motivated by their societal collectivism (Chand and Ghorbani, 2011). Consequently, organisational and institutional commitment becomes less relevant to the Indians compared to the Chinese (Chand and Ghorbani, 2011; Gupta et al., 2002).

These findings sustain the possibility that, social exchange theory in the context of organisational commitment as a mediator seems to support different manifestations across cultures, in this case in two different non-western collectivist societies such as India and China. Therefore, our findings suggest that organisational commitment plays significant roles both as a mediator and as a moderator on the impact of emotional exhaustion on organisational behaviour and the patterns are culturally sensitive even within collectivist societies. These results obviously, open the window for testing the implication of social exchange theory in the context of organisational commitment and its cultural meaning and manifestations among other collectivist societies.

It was also noted that, Chinese nurses reported slightly stronger organisational commitment than their Indian counterparts. It is suggested that most Chinese hospitals, like many other state owned organisations, pay much attention to foster employees' positive emotional attachment to the organisation. Therefore, it is common practice for

those Chinese organisations to focus on developing the workplace as a harmonious big family for their employees. Secondly, given China's long history of centrally planned economy, it is hard for Chinese employees of the state-owned organisation to quit from one organisation to another. Therefore, it is pretty common for an employee to have been working for one state-owned organisation for all of his or her working life. Finally, in China the unions are usually a part of organisational management that share the common goals to make employees feel at home in the workplace (Cooke, 2005). This argument was also supported by Snap and Chan (2000), that union satisfaction is not a significant predictor of a company commitment in China and found that substantial proportion of respondents are committed to both company and union. More importantly, it endorses the notion of institutional collectivism of the Chinese (Gupta et al., 2002).

On the other hand, India is a democratic state, where unions are strong and are often at variance with the management of the organisation. Indian workers have more autonomy to join unions and take part in organisational politics. They also have more options to quit from one job to another. More importantly, in the Indian version of in-group collectivism, an individual's role is simultaneously linked to caste, community and neighbour and reinforced by psychological and social belonging (Gupta et al., 2002; Parikh and Garg, 1990). Consequently, there is a possibility that employees are less committed to their organisations compared to their other affiliations, including their union. We also know that in India females are more committed to unions than males (Sastry and Joshi, 1996). Our Indian sample is predominantly female therefore, despite the theoretical robustness of our model, it is important to test it across different occupations and different cultures where work expectations vary.

#### *4.2 Practical implications*

At a more practical level, our results affirm the influential role of organisational commitment in mitigating the impact of emotional exhaustion on organisational behaviour. Therefore, it is in the best interest of management to take measures that enhance the commitment of their employees to the organisation (Chen et al., 2015) It is also in their best interests to keep the social exchange in balance to ensure better performance, job satisfaction, and alleviate depression.

### **5 Conclusions**

This study's contribution comes from broadening the context for testing burnout models and exploring the role of organisational commitment both as a mediator and as a moderator. Further, by locating our research in both India and China and following the two-study format, we are able to unpack the nuances in the etiology of emotional exhaustion and the differential role of organisational commitment within a collectivist framework. In a way, our study challenges the monochromatic notion of collectivism and underscores the need for further research exploring cultural variations in organisational behaviour within collectivist societies.

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