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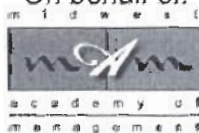
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What is This?

Antecedents, Work-Related Consequences, and Buffers of Job Burnout Among Indian Software Developers

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Abstract

This study examines the antecedents, consequences, and buffers of job burnout among software developers using job demands resources theory. Data were collected from 372 software developers in India using questionnaires. Results reveal that software developers experiencing more role ambiguity, role conflict, schedule pressure, irregular shifts, group noncooperation, psychological contract violation, and work–family conflict are at a greater risk of job burnout. The most important antecedent of job burnout was found to be work–family conflict. Job burnout increased job performance but decreased organizational commitment and interpersonal relationships. Subjective well-being and practicing yoga and meditation were inversely related to burnout-linked job performance. Subjective well-being, social support, and practicing yoga and meditation were also found to decrease the adverse association of job burnout with organizational commitment and interpersonal relationships. In the context of work-related consequences, job burnout had the biggest adverse association with organizational commitment, and practicing yoga and meditation was found to be the most influential buffer to counter the adverse consequences of job burnout.

Keywords

Introduction

Job burnout is a gradual erosion of a person's resources and energy, which often leads to exhaustion, cynicism, and low professional efficacy in the workplace. It is essentially an unpleasant state of mind about work and has reached a critical level in today's workforce. The consequences of job burnout include (a) decrease in job performance, (b) low organizational commitment, and (c) interpersonal conflict (Schwab, Jackson, & Schuler, 1986). Burnout is extensively studied in people in stressful professions such as doctors, nurses, educators, social workers, and lawyers (Maslach, Jackson, & Leiter, 1996). Studies on burnout, however, have neglected the fast-growing Indian software industry where jobs are continuously stressful and demanding. Whereas stress results from the inadequacy of an individual to deal with environmental demands, continuous exposure to stressful situations leads to burnout. In the software industry, the low-end jobholders are programmers/developers. Employees in this field are more susceptible to job burnout because they work in multiple projects and at the same time face hard deadlines, longer working hours, and clients who constantly change their expectations. In addition, they are subject to repetitive and monotonous assignments, team conflicts, anxiety over peer competition, burden of high ambition and family expectations, and uncertainties in the job. All these factors can lead to high job burnout. Although extensive literature is available on "burnout" in the Western context, investigative reports on job burnout, its antecedents, consequences, and buffers are unavailable for Indian software developers (SDs). Similarly, the buffers conceptualized in the individualistic society of the West may differ from the collective society of the East. Identifying the most important antecedent, the consequence, and the buffer can provide insight for intervention. By studying the role of burnout in Indian SDs, this study attempts to fill these gaps.

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Burnout

The concept of burnout, first introduced by Freudenberger (1974), denotes the inability to function effectively in one's job as a result of continuous and extensive job-related stress. Early research on burnout focused on caregiving and service professions (Burke & Greenglass, 1995; Firth & Britton, 1989; Freudenberger, 1974; Maslach, 1982). During the past decade, however, research has extended beyond the traditional borders of the human services to all types of professions. Burnout in the context of work, known as "job burnout," is a multidimensional construct consisting of emotional exhaustion, depersonalization, and diminished personal accomplishment. Contemporarily, it includes (a) exhaustion, (b) cynicism, and (c) professional efficacy (Schaufeli, Leiter, Maslach, & Jackson, 1996).

Work exhaustion refers to feelings of overstrain, tiredness, or fatigue resulting from chronic job stressors (e.g., role ambiguity and role conflict; Igbaria & Greenhaus, 1992; Moore, 2000). Common symptoms include reduction in job performance, interpersonal relationships, and organizational commitment and a decline in health. Cynicism is conceptualized as a dysfunctional coping response to job stress. Employees who develop cynicism about their work distance themselves from exhausting demands. Factors contributing to cynicism include the external attribution of job-related failures and successes, a general feeling of helplessness, and a lack of personal resources. Once cynicism occurs, employees begin to recognize an incongruity between their current contributions to employers and their original expectations. This can lead to feelings of inadequacy and result in lower self-efficacy. Therefore, cynicism is expected to be positively correlated with exhaustion and negatively correlated with professional efficacy. A high level of job burnout is reflected in high scores on exhaustion and cynicism and low scores on professional efficacy (Schaufeli et al., 1996). Maslach (1982, 1993) supports this sequential association of the three burnout dimensions of exhaustion, cynicism, and professional efficacy. Some researchers (Schwab & Iwanicki, 1982), however, argue that one dimension is not an inevitable consequence of another dimension.

Theoretical Framework

Although past studies have shown many antecedents and consequences of burnout, theoretical progress in this area is limited. Most studies rely on one of the two influential job stress models: (a) demand–control model (DCM; Karasek, 1979) and (b) effort–reward imbalance model (ERI model; Siegrist, 1996). The basic assumption of the DCM and the ERI model is that job demands increase stress/burnout when certain job resources are lost (e.g., autonomy in the DCM; salary, security/career opportunities, and esteem in the ERI model). Research on these models, however, has

been restricted to only a few predictors that may not be relevant to all occupations. In contrast, job demands–resources (JDs–Rs) model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) incorporates many possible working conditions, job demands, and job resources. It specifies that employees' working conditions can be categorized into demands and resources. The role different demands and resources play in the organization depends on the specific job attributes. For example, job resources act as buffers for different job demands. Although this theory integrates job resources and job demands, it neglects to address nonjob resources as buffers. Therefore, this study additionally rationalizes that personal resources, besides job resources, act as buffers of job burnout.

The first category of antecedents to job burnout consists of role characteristics that include role ambiguity and role conflict. The second category includes job characteristics of schedule pressure, irregular shifts, pressure from client interactions, group noncooperation, and psychological contract violation (PCV). The final category of antecedents incorporates the personal characteristic of work–family conflict.

Role Characteristics

Role ambiguity is the confusion regarding employee's job responsibilities. It increases as a result of conflicting role expectations. Demands from different clients or unrealistic work expectations can create conflicting demands. Similarly, confusion about not only what should be done but also how it should be accomplished can lead to even more conflict. Brookings, Bolton, Brown, and Mcevoy (1985) found that the presence of role ambiguity has a significant positive association with all components of burnout for female service professionals. Contrarily, other studies have shown that role ambiguity is linked only to the exhaustion component of burnout among information technology (IT) professionals (Cordes & Dougherty, 1993; Igbaria & Greenhaus, 1992; Moore, 2000). Though disparate role enactments can be potential contributors to job burnout, inconsistent findings warrant scrutiny and future research.

Role conflict occurs when the expectations of different people or different groups (e.g., supervisor, colleagues, family, friends, parents) clash regarding an employee's behavior (Brewer & Clippard, 2002; Rizzo, House, & Lirtzman, 1970). As work pressures increase, employees encounter greater conflict because the performance expectation in one area competes for resources with performance expectation in another area. McGee, Khirallah, and Lodge (2000) have found that role conflict contributes to the development of work exhaustion among IT professionals because of unrealistic expectations placed on employees by clients. In addition, role conflict is linked with emotional exhaustion but not with personal accomplishment or

depersonalization among teachers (Jackson et al., 1986) and is unrelated to exhaustion among IT professionals (Cordes & Dougherty, 1993). Contrarily, employees with greater role conflict are found to experience more burnout on all the components (Brookings et al., 1985). Inconsistent findings propel the need to examine these relationships further.

Job Characteristics

A schedule specifies deadlines within which work activities are to be completed. One of the causes of job burnout among SDs is the pressure they experience in meeting impending deadlines. Evidence suggests that continuous pressure of meeting work deadlines is linked to high exhaustion (Bhaktair, 2004) because people under time pressure do not work better, they just work faster. This may require employees to expend excessive amounts of energy maintaining performance standards, leading to feelings of exhaustion (Cordes & Dougherty, 1993). Shneiderman (1980) suggests that schedule pressure increases the levels of stress among SDs. High levels of stress deteriorate performance and reduce the short-term memory for engagement in and performance of multiple tasks. SDs, facing constant schedule pressure on the job, are thus likely to experience job burnout.

Shift work is an employment practice designed to make use of the 24 hours of the day rather than a standard 8-hour working day. It is widely noticed that software industries fail to follow the practice of standard working hours. Because of their job commitments, employees have to stay for long hours at their workstations to complete their tasks. Therefore, irregular shifts force employees to stretch one shift schedule into another shift. In a study of nurses, Jamal and Baba (1997) found that employees on rotating shifts experience a low degree of routine formation in everyday life and remain in a constant changing and adapting mode. This leads to psychosomatic health problems and withdrawal behavior but not burnout. In contrast, Leiter and Maslach (1988) and Kandolin (1993) found that irregular shifts of nurses intensify burnout. Studies on circadian rhythm suggest that one can work up to 8 hours daily comfortably. Stretching and changing work shifts regularly can lead to psychological problems (Costa, Folkard, & Harrington, 2000; Dagan & Eisenstein, 1999; Ruby, Brager, DePaul, Prosser, & Glass, 2009) and may increase the risk of job burnout among SDs.

Pressure from client interaction involves the perceptions of pressure SDs face while interacting with clients during the software development process. Because of the changing nature of software requirements, interactions with clients are more direct, frequent, or of longer duration, all of which are linked to higher levels of stress (Rajeshwari & Anantharaman, 2003). Frequent client interactions are also found to be emotionally draining and can lead to the erosion of mental and personal resources among service professionals (Cordes & Dougherty, 1993; Maslach et al., 1996). Client interaction can change requirement specifications and features of the software project that are difficult to rework. It brings unpleasant mental states and is likely to increase job burnout.

Group conflict is another cause of job stress among software professionals (Rajeshwari & Anantharaman, 2003). Typically, in software development, a new team is formed every time a new project starts, depending on project requirements and available manpower. It is extremely rare for an entire team to move from one project to another. Managers try to attract people by matching expertise for each project; however, the mere presence of expertise in a team may not be sufficient to ensure high-quality work. It is essential that teams are able to manage expertise, competence, cooperation, and trust within the team, otherwise, individuals may experience a low level of efficacy that can increase exhaustion and cynicism and decrease job performance (Faraj & Sproull, 2000).

Morrison and Robinson (1997) have found that violation of the psychological contract occurs when an employee perceives that the organization has failed to fulfill its obligations in exchange for his or her time, effort, and skill. Breach of this contract is one of the factors contributing to teachers' burnout. It threatens predictability and the sense of control that people believe they have over their environment (Cantisano, Domínguez, & García, 2007; Gakovic & Tetrick, 2003; Leiter, 1999; Topa & Morales, 2005). PCV may induce burnout because it erodes reciprocity and mutual trust, which are crucial in maintaining work effort and well-being. It is observed that PCV is more pronounced among highly skilled workforces (Robinson & Rousseau, 1994) and is likely to increase job burnout among SDs.

Personal Characteristics

Work–family conflicts are the interrole conflicts in which the different role pressures from work and family domains are mutually incompatible (Greenhaus & Beutell, 1985). There are two types of interference: the family domain interfering with working life (family-to-work conflicts) and the work domain interfering with family life (work-to-family conflicts; Mesmer-Magnus & Viswesvaran, 2005). With tremendous pressure at work, SDs remain constantly on edge. Inevitably, they spend large amounts of time away from home and often feel a loss of control in their personal lives, which affects the balance of both work-to-family and family-to-work interfaces. This conflict puts a lot of stress on software professionals (Rajeshwari & Anantharaman, 2003). Therefore, work–family conflict is likely to increase job burnout among SDs.

Based on the above discussion on antecedents of job burnout, the following hypothesis is proposed and a research question is raised.

> *Hypothesis 1:* Role ambiguity, role conflict, schedule pressure, irregular shifts, pressure from client interaction, group noncooperation, psychological contract violation, and work–family conflicts will be positively associated with job burnout.
>
> *Research Question 1:* Which will be the most positively associated antecedent of job burnout?

Work-Related Consequences of Job Burnout

Work-related consequences of job burnout can influence employee performance, organizational commitment, and the interpersonal relationships of SDs. Performance assesses the quality (poor vs. very well) of job-related behavior. Since it is difficult to get objective measures of productivity, self-rated performance is often assessed (Brown, Mowen, Todd Donavan, & Licata, 2002). Evidence suggests that a higher level of burnout decreases quality and quantity of job performance (George, David, Ken, & William, 2001; Maslach & Jackson, 1985). This is because employees suffering from burnout are likely to reduce the amount of work they do and may avoid tasks that they find more stressful and demanding. Among the three components of burnout, emotional exhaustion results in the deterioration of job performance, whereas depersonalization and reduced personal accomplishment have no relation with performance (Wright & Bonett, 1997; Wright & Cropanzano, 1998). Emotional exhaustion can lead to depersonalization and reduced personal accomplishment among SDs that needs further exploration.

The bond that employees have with their organization has three components: (a) affective commitment arising from their emotional attachment and identification with the organization, (b) normative commitment because of employees' acceptance of formal relationships and related obligations, and (c) continuance commitment arising from their desire to continue the job in the organization because they perceive high economic (e.g., pension accruals) and social (e.g., friendship ties with coworkers) costs if they quit the organization (Allen & Meyer, 1990). Leiter and Maslach (1988) found that high burnout is related to diminished organizational commitment. As burnout increases employee withdrawal from all contracts, it inevitably leads to reduced commitment to the organization. All components of burnout are significant predictors of organizational commitment. The depersonalization component of burnout, however, does not directly influence the level of commitment as the other two components do. Similar findings are reported in a study of lawyers (Jackson, Turner, & Brief, 1987) and

nurses (Leiter & Maslach, 1988) and are expected to be replicated among SDs.

Interpersonal consequences include changes in the nature or frequency of interactions with clients, coworkers (Jackson & Schuler, 1983), friends, and family members. Studies of police officers (Jackson & Maslach, 1982) and public contact workers (Maslach & Jackson, 1985) reveal that individuals suffering from burnout tend to distance themselves from their friends, family, and coworkers, causing greater interpersonal conflict by disrupting job tasks (Burke & Greenglass, 2001). It is also observed that SDs spend more time working in the office. They do not find enough time to fulfill the social obligations and responsibilities required for building good interpersonal relationships. Consequently, SDs often end up with interpersonal conflicts on and off the job.

In the light of the above discussion on the consequences of job burnout, this study proposes the following hypothesis and poses the following research question.

> *Hypothesis 2:* Job burnout will be inversely associated with work-related outcomes of performance, organizational commitment, and interpersonal relationships.
>
> *Research Question 2:* Which will be the most inversely associated work-related consequence of job burnout?

Buffers

Buffers include personal resources and job resources. Personal resources can be defined as an individual's cognitive ability that reduces the association of job burnout with work- and health-related outcomes. They allow individuals to handle external/internal demands in stressful situations (Duran, Extremera, Rey, Fernandez-Berrocal, & Montalban, 2006). In accordance with JDs–Rs prediction, this study includes personal resources of SWB, practicing yoga and meditation, and the job resource of social support as potential buffers against the adverse association of job burnout with work-related outcomes.

Earlier findings reveal that the widely used job resources of performance feedback, reward, autonomy, participation in decision making, job security, and supervisory support serve to buffer work- and health-related burnout outcomes (Demerouti et al., 2001; Maslach et al., 1996). Unlike job resources, personal resources are self-regulated and controlled (e.g., practicing of yoga, meditation, and SWB); thus, they are given sparse attention in the software environment. Although the job resource of social support has been studied in past research, it has mostly focused on supervisory support and does not integrate other dimensions of social support such as support from spouse, family, friends, and team members. This study incorporates

personal resources of SWB and practicing yoga and meditation as well as the job resource of social support as potential buffers of job burnout.

SWB is a positive psychological state characterized by a high level of satisfaction with life. Findings reveal that people with high SWB experience frequent joy and hold a positive attitude toward life that buffers against job burnout by inculcating positive attitudes and emotions. It can also speed the recovery of the psychological response to chronic stress (Chesney et al., 2005; Diener & Lucas, 1999; Salovey, Rothman, Detweiler, & Steward, 2000). Therefore, it is expected that the SWB of SDs will buffer against the adverse association of job burnout with work-related outcomes.

Social support refers to the extent to which an individual can rely on the support of his or her family, friends, or coworkers. Earlier studies have revealed that inadequate social support in the workplace may increase vulnerability to burnout (Baruch-Feldman, Brondolo, Ben-Dayan, & Schwarz, 2002; Carlson & Perrewe, 1999; Schaufeli & Greenglass, 2000). Therefore, individuals with high amounts of social support cope more effectively with stress at work (Jayaratne & Chess, 1983). Social support can also enhance their confidence that others will provide the necessary resources to help cope with a stressful situation (Cohen & Wills, 1985). Therefore, social support can buffer against the adverse association of job burnout with work-related outcomes among SDs.

Yoga is a lifestyle discipline that fosters personal transformation. It uses both Eastern mind–body skills and Western physical therapy/treatment techniques. Yoga and meditation have tremendous capacity to balance the functioning of the nervous system, relax the body, increase concentration of the mind, and reduce stress levels (Gupta, Khera, Vempati, Sharma, & Bijlani, 2006; Khalsa, 2004; Maharishi, 1996; Whicher, 1998). The preconception that yoga and meditation can buffer against burnout is strictly an Eastern concept and is overlooked in the Western parts of the world. Fortunately, many software giants such as IBM, Microsoft, Infosys, and Wipro have made such practices compulsory for reducing stress and burnout. Therefore, the practice of yoga and meditation can buffer the adverse influence of job burnout on work-related outcomes.

This discussion suggests that SWB, social support, and practicing of yoga and meditation will be the mediators. Mediators explain how and why, personal and job resources can modify the relationships between the predictor (job burnout) and the criterion (job performance, organizational commitment, and interpersonal relationships). The nature of mediated relationship is such that the independent variable influences the mediator, which, in turn, influences the criterion. There may not be "causal" relationships among them. The prerequisite is that there is a significant relationship between the predictor and the criterion before testing for a mediated effect (Baron & Kenny, 1986; Holmbeck, 1997; MacKinnon & Fairchild, 2009). Mediators of personal and job resources can so potently explain the criterion that filtering out their effects can nullify or drop down the influence of predictors to explain the criterion. Because mediators are modifiers and change agents, they can be used for intervention purposes (Fraizer, Tix, & Barron, 2004).

Establishing the mediational role of SWB, social support, and practicing of yoga and meditation implies the following: (a) the independent variable (job burnout) must be significantly associated with the dependent variables (job performance, organizational commitment, and interpersonal relationships), (b) the independent variable (job burnout) must be significantly associated with the mediators (SWB, social support, and practicing of yoga and meditation), (c) the mediators must be significantly associated with the dependent variable, and (d) the independent variable must be weakly (partial mediator) or nonsignificantly (full mediator) associated with the dependent variable after controlling the effects of mediators (Baron & Kenny, 1986; Holmbeck, 1997, p. 602). Based on this discussion, we propose the following hypothesis and raise the following research question.

> *Hypothesis 3*: Subjective well-being, social support, and practicing of yoga and meditation will mediate between job burnout and work-related outcomes.
> *Research Question 3:* Which will be the most influential buffer of job burnout on work-related outcomes?

The antecedents, work-related consequences of job burnout, and buffers are stated figuratively (see Figure 1). It includes the hypotheses.

To sum up, this study examines the antecedents, work-related consequences, and buffers of job burnout. It also determines the most influential antecedent and the consequence as well as the buffer of job burnout. It extends the past research findings from human service professionals to SDs. It is carried out in a different cultural context, in a different time period, in a different sample, using different measurement tools, and incorporating a few new constructs. Such replications and extensions are warranted to establish the external validity of earlier findings and to build the confidence of researchers and practitioners in past evidence (Tsang & Kwan, 1999).

Method

Participants

SDs were taken from three IT hubs of New Delhi, Pune, and Bangalore in India. The lists of employees were procured from employers in 12 software firms. Employees ($N = 2,000$)
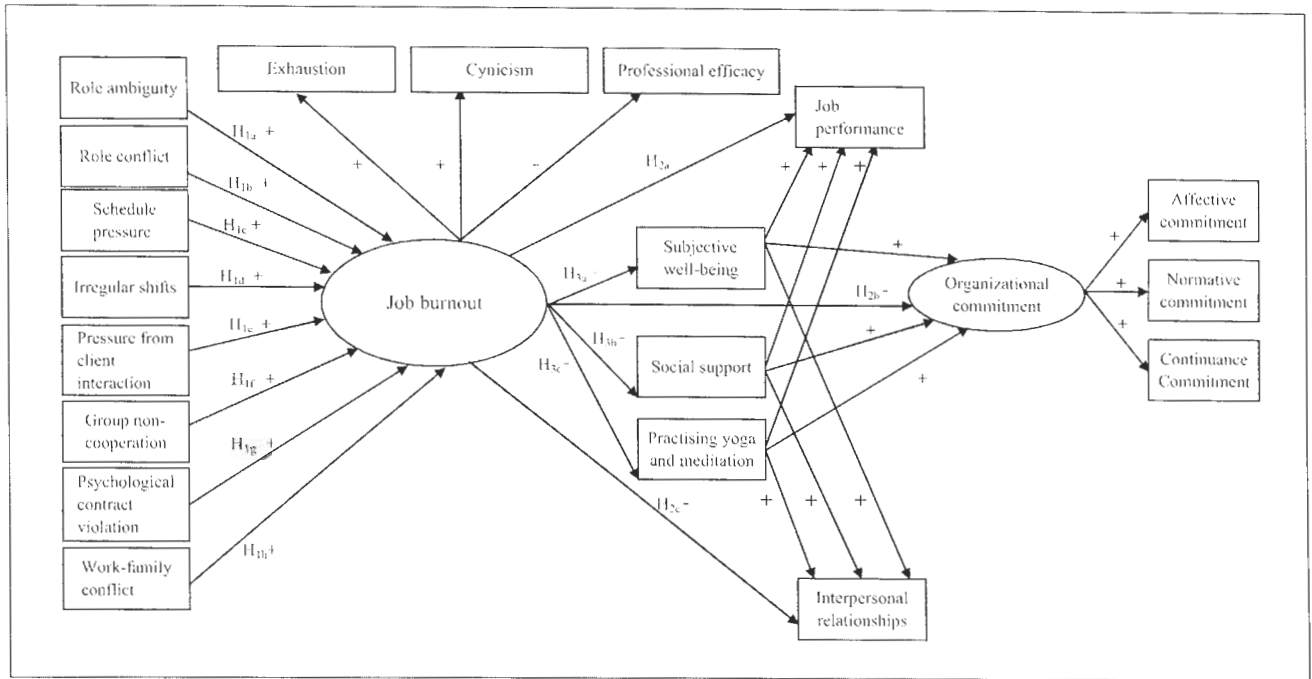
Figure 1. Conceptual model of antecedents, job burnout, work-related outcomes, and buffers
NOTE: "+" indicates positive association and "−" indicates negative association.

were selected through random sampling and were contacted through telephones and e-mails. SDs who had more than 1 year of experience were requested purposively to participate and those agreed were given or e-mailed the questionnaire prepared in English the next day. A sample of SDs ($N = 1,241$) having the requisite experience were given the questionnaire. A minimum of 1 year of service was kept for inclusion of SDs in the sample to ensure that their experience reflected their current job. They were requested to complete and return the questionnaire by postal service or e-mail after a fortnight to the researcher. When the researcher personally approached the employees, 340 employees returned the questionnaire and 32 sent the filled-in questionnaire through e-mails. The return rate was 30%.

The demographic profile of respondents on gender, age, years of service, education, monthly salary, family members' occupation, rural/urban background, and marital status are given in Table 1. Of the 372 respondents, male employees predominated the sample (71.8%), $\chi^2(1) = 70.54$, $p < .001$; were older, $F(1, 370) = 20.65$, $p < .001$; had more years of experience, $F(1, 370) = 6.02$, $p < .05$; and had more monthly salary, $F(1, 370) = 16.82$, $p < .001$, than the female employees. The female employees were from families who had more members employed in their family compared with male employees, $F(1, 370) = 23.19$, $p < .001$. Male and female SDs had similar levels of education, $F(1, 370) = 0.04$, $p = .83$. The male and female employees were predominately from urban and semiurban backgrounds

compared with rural backgrounds, $\chi^2(2) = 152.56$, $p < .001$. Of the total employees, more female employees were married compared with male employees, $\chi^2(1) = 73.03$, $p < .05$. (Note: In India, females marry at a younger age than males.)

Measures

Along with the sociodemographic profile of the respondents, the construct of job burnout, the consequences, and mediators of job burnout were also assessed (see the appendix).

Job burnout. The Maslach Burnout Inventory–General Survey was used to measure job burnout with a 16-item scale developed by Schaufeli et al. (1996). The scale has three dimensions: (a) exhaustion, (b) cynicism, and (c) professional efficacy. The sample items on (a) exhaustion include "I feel emotionally drained from my work" and "I feel used up at the end of the day"; (b) cynicism include "I have become more cynical about whether my work contributes anything" and "I have become less enthusiastic about my work"; and (c) professional efficacy include "I can effectively solve the problem that arises in my work" and "In my opinion I am good at my job." Responses for each item were on a 7-point Likert-type scale ranging from *never* (0) to *everyday* (6). The items of professional efficacy were negatively coded to assess professional inefficacy (Schaufeli & Bakker, 2004). Job burnout was conceptualized to reflect in higher scores on exhaustion, cynicism, and professional inefficacy (or lower score on professional efficacy).

Table 1. Demographic Profile

Variable	Male		Female	
	M	SD	M	SD
Age (years)	26.46	2.00	25.48	1.46
Experience in present job (years)	2.55	0.76	2.34	0.67
Experience in previous job (years)	1.78	1.32	1.88	1.05
Education (years)	16.64	1.06	16.62	0.92
Monthly salary (Indian rupees)	46,803	18,636	38,642	13,159
Total no. of family members working	2.03	1.16	2.64	0.89
Total no. of employees, n (%)	267(71.8)		05(28.2)	
Total no. of married employees, n (%)	142 (38.17)		81(77.14)	
Rural, n (%)		19 (05.10)		
Urban, n (%)		211 (56.72)		
Semiurban, n (%)		142 (38.17)		

Role ambiguity. Role ambiguity was measured with a six-item scale developed by Rizzo et al. (1970). The sample items include "I feel secure about how much authority I have" and "I know what my responsibilities are." Responses for each item were on a 5-point Likert-type scale ranging from *strongly disagree* (1) to *strongly agree* (5). All items were reverse coded. High scores on items indicated high role ambiguity.

Role conflict. Role conflict was measured with an eight-item scale developed by Rizzo et al. (1970). The sample items include "I have to do things that should be done differently" and "I receive incompatible request from two people." Responses were measured on a 5-point Likert-type scale ranging from *strongly disagree* (1) to *strongly agree* (5). High scores on items indicated high role conflict.

Schedule pressure. Schedule pressure was measured with an eight-item scale developed by the authors. Sample items include "Schedule to complete the job compels to work overtime" and "Schedule to complete the job hinders meeting project deadlines." Responses were given on a 4-point Likert-type scale ranging from *not at all* (1) to *always* (4). High scores on items indicated high schedule pressure.

Irregular shifts. Irregular shift was measured with a four-item scale developed by the author. Sample items include "I work in regular hour (negatively keyed)" and "Schedule of work changes regularly." Responses were on a 4-point Likert-type scale ranging from *not at all* (1) to *always* (4). Only one item was negatively coded. High scores on items indicated frequent change in shift pattern.

Pressure from client interactions. Pressure from client interactions was measured with a seven-item scale developed by Rajeshwari and Anantharaman (2003). Sample items include "Unclear expectations of clients" and "Lack of consensus about project specifications." Responses for each item were either *yes* (1) or *no* (0). High scores on items indicated more pressure from client interactions.

Group noncooperation. Group noncooperation was assessed with a 13-item scale developed by Rajeshwari and Anantharaman (2003). Sample items include "Lack of trust among team members" and "Presence of rivalry in my project team response." Responses for each item were on a 7-point Likert-type scale ranging from *not at all* (0) to *always* (6). High scores on items indicated more group noncooperation.

Psychological contract violation. PCV was assessed with a 16-item scale developed by Robinson and Rousseau. (1994). Sample items include employees' perspectives on "salary," "job security," and "career opportunity." All the items were assessed on a 5-point Likert-type scale ranging from *received much more than promised* (1) to *received much less than promised* (5). A high score on items indicated high PCV.

Work–family conflict. Work–family conflict was measured with a seven-item scale (Rajeshwari & Anantharaman, 2003). Sample items include "Increased workload leads to reduction in time given to the family" and "Doing job work at home." Responses for each item were on a 4-point Likert-type scale ranging from *not at all* (1) to *always* (4). A high score on items indicated more work–family conflicts.

Job performance. Job performance was measured with a seven-item scale developed by Abramis (1985) to evaluate the performance on taking decisions, meeting deadlines, planning, and organizing work over the past 6 months. Sample items include "How well do you think you were doing satisfactory quality and quantity of work" and "How well you were taking decisions." Response categories for each item were on a five-point Likert-type scale ranging from *very poor* (1) to *very well* (5). A high score on items indicated high job performance.

Organizational commitment. Organizational commitment was measured with a 24-item scale of the Allen and Meyer (1990). The scale had three dimensions: (a) affective commitment, (b) continuance commitment, and (c) normative

commitment. Sample items on affective commitment include "I would be very happy to spend the rest of my career with this organization" and "I do not feel like part of the family at my organization"; on continuance commitment include "It would not be too costly for me to leave my organization now" and "I feel that I have too few options to consider leaving this organization"; and on normative commitment include "Jumping from organization to organization does not seem at all unethical to me" and "I was taught to believe in the value of remaining loyal to one organization." Responses categories for each item were on a five-point Likert-type scale ranging from *strongly disagree* (1) to *strongly agree* (5). Four items of affective commitment, 2 items of continuance commitment, and 3 items of normative commitment were negatively coded, and the rest were positively coded. A high score on items of a single dimension indicated high commitment on that dimension.

Interpersonal relationships. Interpersonal relationships were measured with a five-item scale developed by the author. Sample items include "You have good relationship with all your family members" and "You have good relationship with all your community members." Response categories for each item were on a 5-point Likert-type scale ranging from *not at all* (0) to *excellent* (4). A high score on items indicated good interpersonal relationships.

Subjective well-being. SWB was measured with a five-item scale developed by Diener, Emmons, Larsen, and Griffin (1985). Sample items include "In most ways my life is close to my ideal" and "I am satisfied with my life." Response categories for each item were on a 4-point Likert-type scale ranging from *strongly disagree* (1) to *strongly agree* (4). A high score on items indicated high SWB.

Social support. Social support was measured with a 15-item scale developed by the author. Sample items include "You can get all the support whenever you are in need from your supervisor" and "You can share and talk about your problems with your team members." Response categories for each item were on a 5-point Likert-type scale ranging from *not at all* (0) to *to a great degree* (5). A high score on items indicated more social support.

Yoga and meditation. Yoga and meditation was measured with a seven-item scale developed by the author. Sample items include "I practice yoga and *asana*" and "I practice meditation." Response categories for each item were on a 4-point Likert-type scale ranging from *not at all* (0) to *daily* (3). A high score on items indicated more practice of yoga and meditation.

The convergent and discriminant validity of the constructs was tested by confirmatory factor analysis. Amos 4.0 software package was used to analyze the responses. Along with descriptive statistics and standardized regression weights/factor loadings, various fit measures of goodness-of-fit index (GFI), comparative fit index (CFI), normed fit index (NFI), and root mean square error of approximation

(RMSEA) of the scales were obtained. It was conservatively chosen to eliminate items with factor loadings less than 0.30. The purpose of this stage of the analysis was to identify and eliminate poorly performing items and to reaffirm the convergent validity of items in each construct. The GFI, CFI, and NFI were close to or greater than .90, the recommended cutoff criteria suggesting the good fit of items to each construct. RMSEA was close to the required limit of .08 except in a few cases the RMSEA was .10. All constructs had Cronbach's alpha of greater than .60 (Nunnally, 1967), suggesting the internal consistency of items to measure each construct. The sum of value of each construct of the respondent was assessed by dividing the number of items in that construct to keep the value of the construct within the range of the response scale (see Table 2).

Results

The Pearson correlations are presented in Table 3. Variables are designated by variable numbers as well as variable names. Data on all constructs were in metric scale. Correlations revealed the following:

- With the reverse scoring of professional efficacy items and wording the construct oppositely, professional inefficacy was found to be inversely associated with exhaustion and cynicism dimensions. However, without reverse scoring of professional efficacy items, professional efficacy related directly with exhaustion and cynicism suggesting that high (low) exhaustion and cynicism were associated with high (low) professional efficacy. Such correlations were not in accordance with the conceptualization of test developers (Schaufeli et al., 1996), but they were in accordance with the experience of burnout among young SDs having 2 to 5 years of experience and performing boundary-spanning activities in the complex and dynamic environment that require them to update their technical and organizational knowledge in order to be professionally efficient and competent (Rajeshwari & Ananathraman, 2005) and to demonstrate high performance constantly so as to sustain the high-stakes business. Therefore, the professional efficacy score was retained along with exhaustion and cynicism to gauge the burnout of SDs.
- High scores on role ambiguity, role conflict, schedule pressure, irregular shifts, group noncooperation, PCV, and work–family conflict were associated with high scores on exhaustion and cynicism among SDs. Contrarily, professional efficacy was positively correlated with all the stressors except pressure from client interactions.

Table 2. Scale Reliability and Validity of Antecedents, Job Burnout, Work-Related Outcomes, and Buffers

Variable	No. of Items		M	SD	Cronbach's α	GFI	CFI	NFI	RMSEA	Factor Loading Range
	Original	Retained								
1. Role ambiguity	6	6	3.00	0.73	.90	.98	.99	.99	.04	0.74 to 0.82
2. Role conflict	8	8	3.72	0.60	.89	.97	.98	.96	.05	0.53 to 0.76
3. Schedule pressure	8	8	3.08	0.54	.79	.98	.99	.97	.04	0.33 to 0.79
4. Irregular shifts	4	4	2.91	0.64	.71	.98	.97	.96	.10	0.52 to 0.65
5. Pressure from client interactions	7	7	0.58	0.15	.64	.98	.95	.90	.05	0.33 to 0.59
6. Group noncooperation	13	13	2.38	0.64	.93	.93	.96	.95	.07	0.36 to 0.86
7. Psychological contract violation	16	14	3.43	0.77	.79	.94	.90	.82	.05	0.32 to 0.69
8. Work–family conflict	7	7	2.64	0.76	.80	.95	.92	.91	.08	0.50 to 0.74
9. Job burnout										
a. Exhaustion	5	5	3.50	0.99	.85					
b. Cynicism	5	5	2.62	1.17	.93					
c. Professional inefficacy	6	5	2.20	0.17	.62	.85	.90	.88	.08	−0.30 to 0.89[a]
d. Professional efficacy	6	5	4.80	0.40	.62	.85	.90	.88	.08	0.30 to 0.89[b]
10. Job performance	7	7	3.94	0.29	.65	.98	.96	.91	.04	0.32 to 0.55
11. Organizational commitment										
a. Affective commitment	8	8	2.27	0.57	.90					
b. Normative commitment	8	7	2.09	0.69	.87	.91	.98	.96	.05	0.36 to 0.96
c. Continuance commitment	8	8	2.39	0.63	.95					
12. Interpersonal relationships	5	5	2.25	0.67	.75	.99	.99	.97	.06	0.54 to 0.79
13. Subjective well-being	5	5	2.35	0.61	.80	.98	.98	.97	.03	0.61 to 0.73
14. Social support	15	15	2.55	0.83	.91	.90	.82	.85	.09	0.33 to 0.80
15. Practicing yoga and meditation	7	7	1.71	0.79	.85	.97	.97	.96	.08	0.49 to 0.90

NOTE: GFI = goodness-of-fit index; CFI = comparative fit index; NFI = normed fit index; RMSEA = root mean square error of approximation.

a. The fit indices of the burnout scale are given with exhaustion, cynicism, and professional inefficacy.

b. The fit indices of the burnout scale are given with exhaustion, cynicism, and professional efficacy.

Only the high pressure from client interactions was associated with a high score on cynicism.

- High scores on exhaustion, cynicism, and professional efficacy were positively correlated with a high score on job performance. Employees experiencing job burnout were performing well. High scores on exhaustion, cynicism, and professional efficacy were found to be associated with low scores on organizational commitment and interpersonal relationships. Exhausted and cynical employees were not only more efficacious and had a high performance level at work but also had low organizational commitment and poor interpersonal relationships.
- SWB, social support, and yoga and meditation were inversely related to exhaustion, cynicism, and professional efficacy.

The correlations were in the hypothesized direction except in the case of the following: (a) the high scores on role and job stressors associated with a high score on professional efficacy, (b) the high score on job burnout components associated with a high score on job performance, and (c) the high score on SWB, social support, and practicing yoga and meditation were associated with a low score on job performance.

Latent variable structural equation modeling (LVSEM) was adopted to test the hypotheses. It unfolds antecedent–consequence relationships to test the preposition that are unreserved in bidirectional correlations. LVSEM tests the sequential relationships between a series of independent and dependent variables. It tests the complex models in a single analysis (Mackenzie, 2001). It also helps in specifying measurement models as well as structural models. In addition, it controls measurement errors—(a) random and (b) systematic. Random errors of each construct were isolated, increasing the fit measures of constructs using confirmatory factor analysis. Systematic errors occur because of factors such as social desirability, common method bias (e.g., scale type, rater, or context), and response biases (e.g., leniency, yea saying, or nay saying). Systematic errors such as common method bias (Podsakoff, MacKenzie, & Podsakoff, 2003) are controlled statistically using LVSEM with indicator variables loading on a latent factor. The

Table 3. Pearson Correlation Among Variables of Antecedents, Job Burnout, Work-Related Outcomes, and Buffers

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. RA	1.00	.69***	.42***	.48***	.07	.14**	.40***	.61***	.67***	.54***	.19***	-.19***	.23***	-.48***	-.41***	-.42***	-.52***	-.56***	-.60***	-.59***
2. RC		1.00	.49***	.53***	.06	.18***	.40***	.67***	.73***	.59***	.20***	-.20***	.28***	-.56***	-.40***	-.43***	-.60***	-.61***	-.65***	-.66***
3. SP			1.00	.52***	.10*	.24***	.44***	.56***	.68***	.55***	.21***	-.21***	.28***	-.58***	-.47***	-.45***	-.57***	-.57***	-.59***	-.58***
4. IS				1.00	.17***	.22***	.46***	.64***	.75***	.68***	.23***	-.23***	.34***	-.63***	-.47***	-.54***	-.64***	-.65***	-.64***	-.65***
5. PCI					1.00	.01	.10*	.07	.08	.19***	.01	-.01	-.02	-.11*	-.07	-.14**	-.12*	-.05	-.05	-.10*
6. EG						1.00	.09	.27***	.29***	.29***	.10*	-.10*	.08	-.20***	-.17***	-.14**	-.23***	-.22***	-.23***	-.24***
7. PCV							1.00	.52***	.59***	.54***	.14**	-.14**	.22***	-.42***	-.38***	-.41***	-.48***	-.51***	-.50***	-.48***
8. WF								1.00	.79***	.75***	.16***	-.16***	.33***	-.66***	-.50***	-.53***	-.67***	-.69***	-.73***	-.73***
9. EX									1.00	.77***	.23***	-.23***	.37***	-.72***	-.55***	-.60***	-.75***	-.83***	-.83***	-.81***
10. CY										1.00	.18***	-.18***	.32***	-.60***	-.48***	-.53***	-.64***	-.69***	-.69***	-.72***
11. PE											1.00	-1.0	.30***	-.19***	-.20***	-.19***	-.18***	-.26***	-.13**	-.19***
12. PIE												1.00	-.30***	.19***	.20***	.19***	.18***	.26***	.13*	.19***
13. JP													1.00	-.31***	-.25***	-.28***	-.34***	-.32***	-.09	-.32***
14. AC														1.00	.49***	.58***	.72***	.59***	.64***	.73***
15. NC															1.00	.52***	.51***	.49***	.42***	.48***
16. CC																1.00	.58***	.54***	.47***	.56***
17. IR																	1.00	.65***	.64***	.71***
18. SWB																		1.00	.70***	.71***
19. SS																			1.00	.72***
20. PYM																				1.00

NOTE: RA = role ambiguity; RC = role conflict; SP = schedule pressure; IS = irregular shifts; PCI = pressure from client interaction; EG = extent of group noncooperation; PCV = psychological contract violation; WF = work–family conflict; EX = exhaustion; CY = cynicism; PIE = professional inefficacy; PE = professional efficacy; JP = job performance; AC = affective commitment; NC = normative commitment; CC = continuance commitment; SWB = subjective well-being; SS = social support; PYM = practicing yoga and meditation.
*p < .05. **p < .01. ***p < .001.
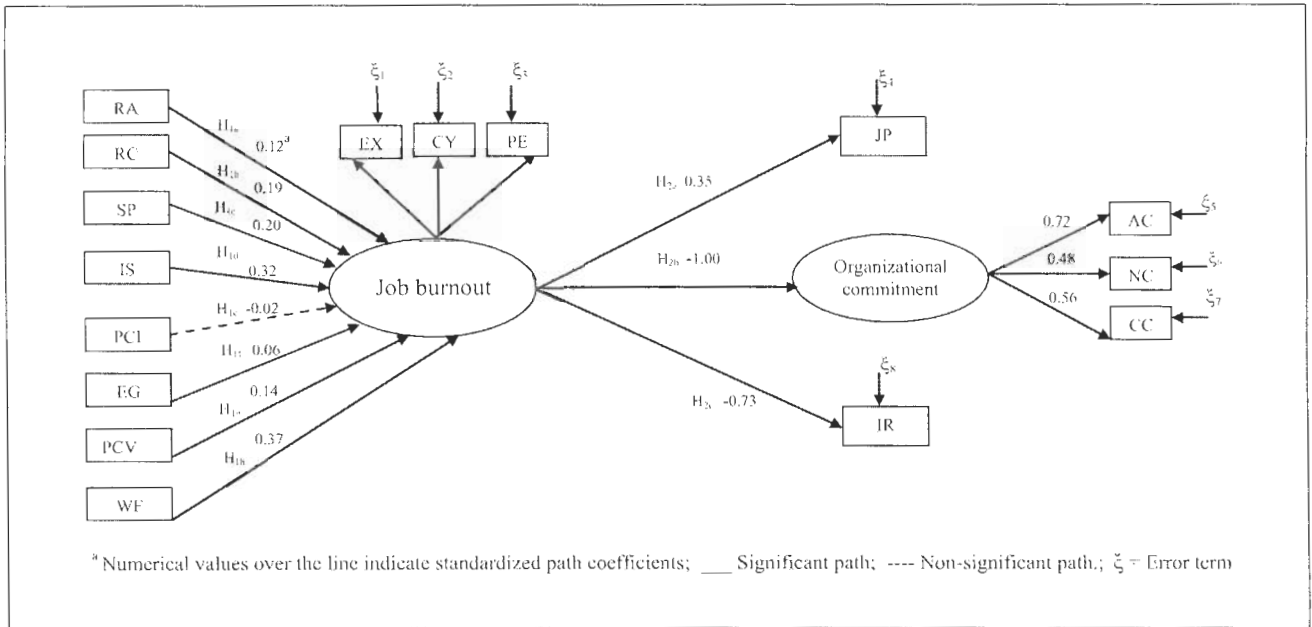
Figure 2. Direct path model of antecedents, job burnout, and work-related outcomes (— significant path; ---- nonsignificant path; ξ = error term)

NOTE: RA = role ambiguity; RC = role conflict; SP = schedule pressure; IS = irregular shifts; PCI = pressure from client interaction, EG = extent of group noncooperation; PCV = psychological contract violation; WF = work–family conflict; EX = exhaustion; CY = cynicism; PE = professional efficacy; JP = job performance; AC = affective commitment; NC = normative commitment; CC = continuance commitment; IR = interpersonal relationship.

advantage of LVSEM is that method bias is controlled in measurement model incorporating highly reliable and valid scales/measuring instruments.

The path analytic hypothesized relationships using LVSEM are shown in Figure 2. This was tested using Amos 4.0 (Arbuckle, 1995). The path coefficients are equivalent to beta coefficients in multiple regression equations. The direct correlations between the dimensions of job burnout reported earlier are consistent with the model values of job burnout, adding consistency to the conceptualization. In accordance with Maslach's (1993) marker for high job burnout (exhaustion $\geq$ 3.5, cynicism $\geq$ 2.4), about 44% of SDs were found to be at risk of high job burnout.

Supporting the first hypothesis, the unstandardized path coefficients indicated that the increase in role characteristics of role ambiguity and role conflict; job characteristics of schedule pressure, irregular shifts, group noncooperation, and PCV; and personal characteristics of work–family conflict increased job burnout. Only high pressure from client interactions did not result in high job burnout as hypothesized. It can be seen from direct standardized path coefficients (Figure 2) that the stressor of work–family conflict was the most influential predictor of job burnout compared with other stressors. This answered the first research question.

In accordance with second hypothesis, SDs experiencing more job burnout had decreased levels of organizational commitment and interpersonal relationships. Contradicting the conventional wisdom and a part of the second hypothesis, an increase in job burnout also increased job performance of SDs. Observation of direct standardized path coefficients (Figure 2) indicated that job burnout had the largest adverse association with the work-related consequences of organizational commitment. This provided an answer to the second research question.

In accordance with the specification of mediators in the third hypothesis, first, the independent latent variable of job burnout was associated with increased job performance and decreased organizational commitment and interpersonal relationships (see Figure 2). Second, the independent latent variable of job burnout inversely related to the mediators of SWB, social support, and practicing of yoga and meditation, suggesting that SDs experiencing more job burnout had lower SWB, received less social support, and less frequently practiced yoga and meditation (Figure 3). Third, the mediators of SWB, social support, and practicing yoga and meditation directly related to organizational commitment and interpersonal relationships. Only SWB and practicing yoga and meditation were inversely associated with job performance. In other words, all the mediators individually
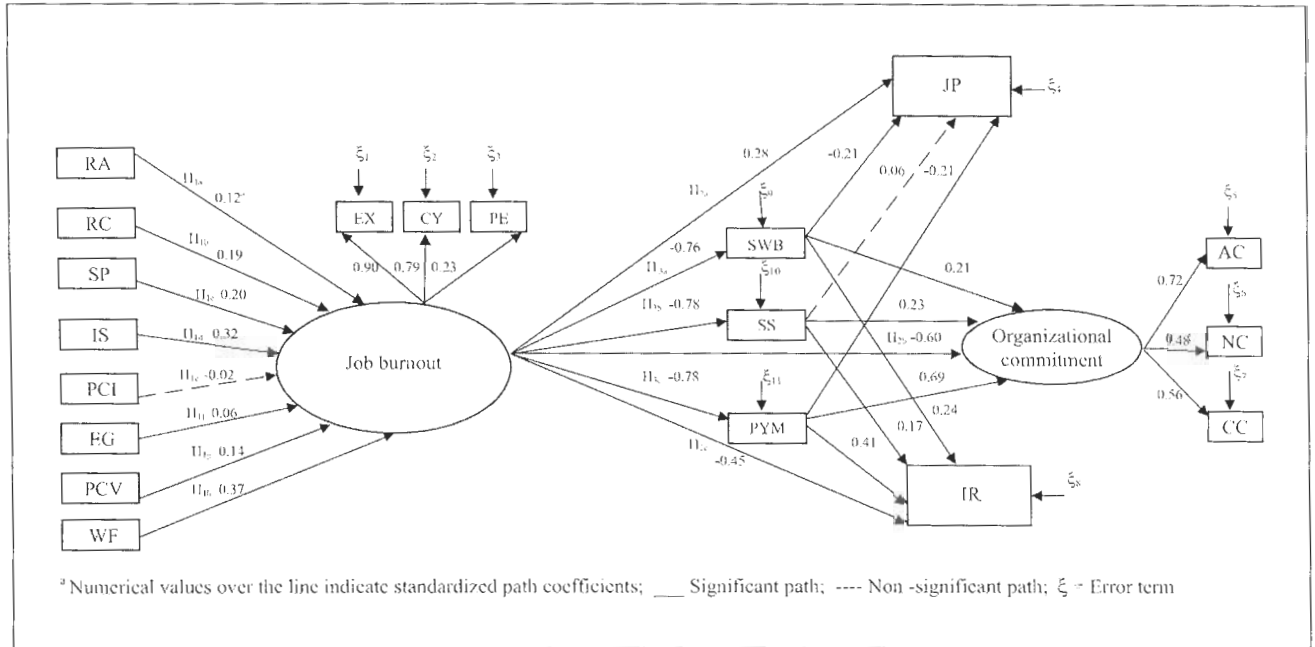
Figure 3. Indirect path model of antecedents, job burnout, work-related outcomes, and buffers (— significant path; ---- nonsignificant path; ξ = error term)
NOTE: RA = role ambiguity; RC = role conflict; SP = schedule pressure; IS = irregular shifts; PCI = pressure from client interaction; EG = extent of group noncooperation; PCV = psychological contract violation; WF = work–family conflict; EX = exhaustion; CY = cynicism; PE = professional efficacy; SWB = subjective well-being; SS = social support; PYM =Practicing yoga and meditation; JP = job performance; AC = affective commitment; NC = normative commitment; CC = continuance commitment; IR = interpersonal relationships.

increased the different dimensions of work-related outcomes, but SWB and practicing yoga and meditation were associated with decreased job performance. Finally, the association of job burnout in decreasing organizational commitment and lessening interpersonal relationships was further reduced when the effects of SWB, social support, and practicing of yoga and meditation were controlled for (Figure 3). It can be concluded that SWB, social support, and the practicing of yoga and meditation partially intervened in the relationship of job burnout and reduced organizational commitment and interpersonal relationships.

Because social support did not decrease or increase job performance, the relationship between job burnout and job performance was arrested partially when the effects of SWB and practicing yoga and meditation were partialled out. In other words, SWB and practicing yoga and meditation intervened to reduce the association of burnout-linked job performance.

Mediators had generative mechanisms through which the job burnout association with job performance, organizational commitment, and interpersonal relationships were lessened. Findings supported the third hypothesis and the partial mediational role of SWB, social support, and practicing yoga and meditation on the relationship of job

burnout with decreased organizational commitment and interpersonal relationships. Moreover, only SWB and practicing yoga and meditation arrested the positive association of job burnout with job performance (Table 4).

The fit measure of the direct and indirect path (including mediators) models (Table 5) indicated that the chi-squares of both models were highly significant ($p < .001$), although nonsignificant values were desired for similarity between observed and model-implied covariance matrix. Because of the sensitivity of chi-square to large sample size, relative chi-square (χ^2/degrees of freedom) was estimated. The relative chi-square was not less than the required limit of 3 (Kline, 1998). Hence, other fit measures of the models were considered. GFI is analogous to squared multiple correlation (R^2) in multiple regression. CFI indicates the overall fit of the model relative to a null model, and NFI adjusts for the complexity of the model. These fit measures being close to .90 implied good fit of both the models. The parsimonious fit measures (PGFI, PCFI, PNFI) were acceptable in both the models. They were slightly lower in the direct model because the mediators were absent in that model. RMSEA indicates the approximation of the observed model to the true model. The lower the RMSEA, the better is the model. RMSEA was lower in the indirect model. The fit

Table 4. Path Analytic Results of Hypotheses (Work-Related Outcomes)

	USTD	SE	CR	Decision
Hypothesis 1: Stressor association with job burnout				
H_{1a}: Job burnout ← role ambiguity	0.13	0.03	5.21***	Supported
H_{1b}: Job burnout ← role conflict	0.27	0.04	7.52***	Supported
H_{1c}: Job burnout ← schedule pressure	0.30	0.03	9.25***	Supported
H_{1d}: Job burnout ← irregular shifts	0.42	0.03	13.90***	Supported
H_{1e}: Job burnout ← pressure from client interactions	−0.08	0.09	−0.97	Refuted
H_{1f}: Job burnout ← group non-cooperation	0.08	0.02	3.72***	Supported
H_{1g}: Job burnout ← psychological contract violation	0.16	0.02	9.19***	Supported
H_{1h}: Job burnout ← work–family conflict	0.41	0.03	13.82***	Supported
Hypothesis 2: Job burnout association with work outcome				
H_{2a}: Job performance ← job burnout	0.12	0.02	7.02***	Refuted
H_{2b}: Organizational commitment ← job burnout	−3.75	0.22	−17.32***	Supported
H_{2c}: Interpersonal relationships ← job burnout	−0.56	0.03	−18.26***	Supported
Hypothesis 3				
Job burnout association with mediator				
Subjective-well being ← job burnout	−0.53	0.03	−19.48***	Supported
Social support ← job burnout	−0.73	0.04	−20.63***	Supported
Yoga and meditation ← job burnout	−0.71	0.03	−20.79***	Supported
Mediator association with work outcome				
Job performance ← subjective well–being	−0.10	0.04	−2.86***	
Organizational commitment ← subjective well-being	1.15	0.38	3.06***	
Interpersonal relationships ← subjective well–being	0.27	0.06	4.56***	
Job performance ← social support	0.02	0.03	0.87	
Organizational commitment ← social support	0.94	0.28	3.36***	
Interpersonal relationships ← social support	0.14	0.04	3.14***	
Job performance ← yoga and meditation	−0.08	0.03	−2.85***	
Organizational commitment ← yoga and meditation	2.88	0.30	9.63***	
Interpersonal relationships ← yoga and meditation	0.35	0.05	7.49***	
Job burnout influencing outcome after controlling the effects of mediator				
Job performance ← job burnout	0.10	0.04	2.77**	Supported
Organizational commitment ← job burnout	−2.39	0.38	−6.25***	Supported
Interpersonal relationships ← job burnout	−0.35	0.06	−5.59***	Supported
Latent constructs				
Exhaustion ← job burnout	0.96	0.04	22.51***	
Cynicism ← job burnout	1.04	0.05	22.51***	
Professional efficacy ← job burnout	0.10	0.02	4.75***	
Affective commitment ← organizational commitment	1.10	0.08	13.51***	
Normative commitment ← organizational commitment	0.92	0.02	7.59***	
Continuance commitment ← organizational commitment	0.91	0.07	13.46***	

NOTE: USTD = unstandardized path coefficient; SE = standard error; CR = critical ratio.
**$p < .01$. ***$p < .001$.

measures of both the models were acceptable and were not widely apart. However, the best that could be concluded that the indirect model provided a slightly better fit than the direct model because it included all the possible paths that were specified in three hypotheses (see Table 5).

To gauge the most influential buffer of job burnout, the direct, indirect, and total effects were estimated (Tari, Molina, & Castejon, 2007). To calculate total effects,

standardized path coefficients were multiplied between job burnout and mediators with standardized path coefficients between mediators and work-related outcomes (Bollen, 1989). It can be observed from total effects (see Table 6) that the practicing of yoga and meditation was found to be the most important partial buffer of job burnout that deceased burnout-linked job performance and increased organizational commitment and interpersonal

Table 5. Fit Measure of Two Models Dealing With Work-Related Outcomes

Model	χ^2	df	χ^2/df	GFI	CFI	NFI	RMSEA	PGFI	PCFI	PNFI
Direct	390.66	91	4.29	.91	.85	.87	.093	.60	.69	.67
Indirect	462.29	137	3.37	.90	.89	.90	.080	.61	.69	.68

NOTE: df = degrees of freedom; GFI = goodness-of-fit index; CFI = comparative fit index; NFI = normed fit index; RMSEA = root mean square error of approximation; PGFI = parsimonious goodness-of-fit index; PCFI = parsimonious comparative fit index; PNFI = parsimonious normed fit index.

Table 6. Direct, Indirect, and Total Effects (Work-Related Outcomes)

Effects	Path	2	3	4	JP	OC	IR
1. Job burnout	Direct	−0.76***	−0.78***	−0.78***	—	—	—
	Indirect	—	—	—	—	—	—
	Total	−0.76***	−0.78***	−0.78***	—	—	—
2. Subjective well-being	Direct	—	—	—	−0.21***	0.21***	0.24***
	Indirect	—	—	—	—	—	—
	Total	—	—	—	0.15***	−0.15***	−0.18***
3. Social support	Direct	—	—	—	0.06	0.23***	0.17***
	Indirect	—	—	—	—	—	—
	Total	—	—	—	−0.04	−0.17***	−0.13***
4. Yoga and meditation	Direct	—	—	—	−0.21***	0.69***	0.41***
	Indirect	—	—	—	—	—	—
	Total	—	—	—	0.16***	−0.53***	−0.31***

NOTE: JP = job performance; OC = organizational commitment; IR = interpersonal relationship.
***$p < .001$.

relationships. This provided an answer to the third research question.

Discussion

Using a cross-sectional survey of 372 SDs from IT hubs in India, this study examines antecedents, consequences, and buffers of job burnout. SDs experiencing more role ambiguity, role conflict, schedule pressure, irregular shifts, group noncooperation, PCV, and work–family conflicts are at a greater risk of job burnout. Only the pressure from client interactions did not influence job burnout. The most influential antecedent of job burnout is work–family conflict. SDs experiencing more job burnout are found to be better job performers, but they have lower organizational commitment and poor interpersonal relationships. Burnout had the most adverse association with the work-related outcome of organizational commitment.

SWB, social support, and practicing yoga and meditation were found to boost work-related outcomes. Only SWB and practicing of yoga and meditation were found to be the generative mechanism through which SDs further decreased their burnout-linked job performance. However, all the buffers, including SWB, social support, and practicing yoga

and meditation, reduced the adverse association of job burnout with organizational commitment and interpersonal relationships. The practicing of yoga and meditation was the most influential buffer against the association of job burnout with work-related outcomes.

Conceptualization of Job Burnout

Job burnout is reflected in high scores on exhaustion and cynicism and low scores on professional efficacy (Schaufeli et al., 1996). Contrarily, the results of this study reveal that professional efficacy of young SDs unusually increased along with exhaustion and cynicism. One of the test developers of job burnout (M. P. Leiter, personal communication, June 9, 2010) also noticed the same pattern among hospital residents who were experiencing efficacy from their medical training but at the same time were increasingly exhausted because of sleep deprivation and had developed cynicism. In a similar vein, studying executives in an Indian manufacturing industry, Sharma (2007) found that those suffering from burnout do not have low efficacy; on the contrary, high-achieving executives were mostly found to suffer from burnout.

It has been reported (Schaufeli & Salanova, 2007, p.179) that reversing the positively worded items of the efficacy scale does not measure inefficacy. Efficacy and inefficacy are likely to be strongly (but not perfectly) and negatively related to each other. For instance, an employee may score low on the efficacy item "I efficiently solve any problems that may arise in my work." Reversing the score would indicate that the employee is not efficient in solving problems at work; however, this does not necessarily imply that the employee is inefficient in solving problems. This would be the case if the employee agreed with the inefficacy item "At my work, I think I am inefficient when it comes to solving problems." In other words, although people do not feel happy, they do not necessarily feel sad; and when they do not feel sad, they do not necessarily feel happy. It, therefore, follows that assessing happiness with reversed sadness items, or sadness with reversed happiness items, is not effective. Similarly, reversing the scale of efficacy items cannot capture inefficacy. When the professional efficacy score is reversely coded to assess the inefficacy, it only reversed the direction of correlations of professional efficacy with exhaustion and cynicism (see Table 3).

The positive association found in this study between exhaustion, cynicism, and professional efficacy may not be intuitively appealing but relevant to the sample and the context of software business. SDs studied here are young (male *M* age = 26.46 years, female *M age* = 25.48), *full of zeal, enthusiasm, and determination.* In all, 60% of them are recently married, are concerned about material comforts, and have 2 to 5 years of experience in the same job or a similar job. They have shown high levels of competency updating their technical skills, performing boundary-spanning activities in the complex and dynamic environment regularly (Rajeshwari & Ananthraman, 2005), and overstretching themselves mentally and physically in accordance with the high job demands to sustain the high-stakes business. There is a condition when SDs are overextending themselves: working very hard in a way that they cannot extend forever. They feel that they are accomplishing great things, but they are also becoming increasingly exhausted and discouraged in their work. An increase in professional efficacy with exhaustion and cynicism is not sustainable in the long run but can be maintained for a short period of time. Had they had more years of experience in the same or a similar job, then exhaustion and cynicism may have erupted to retard professional efficacy.

Antecedents and Job Burnout

Schaufeli and Bakker (2004) developed the JDs–Rs model according to which high job demands and lack of job resources lead to job burnout in service professionals. Confirming these notions, it was found that when job demands are high, it becomes difficult for SDs to allocate their attention and energy to use job and personal resources to buffer job burnout. They are overstretched because they have to deal with changes at all levels at a fast pace in terms of (a) getting new projects, (b) meeting project deadlines, (c) working for longer periods, (d) changing teams and peer groups, and (e) synchronizing teleconferences and time differences with clients in the United States and the United Kingdom. They require more physical strength and mental energy to comply with these job demands. However, contradicting the earlier findings in service professions (Cordes & Dougherty, 1993; Maslach et al., 1996), the stressor of client interaction is found to be unrelated to job burnout. SDs work in situations that require only a few contacts with clients based on needs but more interaction with computers. Among the antecedents of job burnout, work–family conflict is the most important antecedent because the studied SDs were young and the majority of the SDs are newly married and are not able to give time to their families because of work pressure. Extended hours of work have caused them to neglect family concerns, causing work–family conflict.

Earlier studies suggest that the personal resource of SWB (Russell, 2008) and practicing yoga and meditation (Khalsa & Cope, 2006) and the job resource of social support (Park, Wilson, & Lee, 2004) are positively linked to job performance. Contradicting the notion, this study suggests that SWB and practicing yoga and meditation are inversely linked to job performance. However, social support did not relate to job performance of SDs. Constant performance-related pressure in software firms make SDs lead pressurized lives that are rigidly structured and regulated by project deadlines. They are strongly pushed to achieve project targets in a cost-effective manner. The urgency to deliver the software product before the set deadline makes them resource deprived. They do not get sufficient time and space to adjust their personal schedules and use their resources. Furthermore, in the environment of extended work schedules, erratic hours, and frequent changing peer groups in software firms, decreases in social ties among SDs trigger loneliness and a constant feeling of being left out, both on and off the job. Employees start working robotically rather than analytically.

Work-Related Consequences of Job Burnout

Job burnout and job performance. Earlier studies suggest that burnout is negatively linked with job performance (Cropanzano, Rupp, & Byrne, 2003; Maslach, 1982). However, this study, contradicting the hypothesis, suggests that SDs experiencing high job burnout perform better on the job. The discussion with SDs during the survey unfolds several possible reasons. SDs need to meet stringent deadlines set by clients. Because of this, they push themselves to increase their job performance and put in extra efforts so that time schedules are kept intact. Even if physical and mental

resources do not comfortably cope with job demands, they leave no stones unturned to complete the project and sustain the high-stakes business. It is the *Neelakantha syndrome* (the blue-necked one) of SDs. Indian young SDs have swallowed extreme pressure, remained resilient, and performed well to earn name, fame, and wealth for their family vis-à-vis the society. That is what in Indian mythology *Lord Shiva* did. He swallowed poison for the welfare of humanity. The phenomenon of *Neelakantha syndrome* is taken as a parallel, not as exactly matching the illustration of what *Lord Shiva* did.

Job burnout and organizational commitment. Corroborating earlier findings in service professions of nurses (Jackson et al., 1987) and lawyers (Leiter & Maslach, 1988), job burnout of SDs decreased organizational commitment. Job-hopping is very rampant among SDs. In this study, the average professional experience among SDs in their past job(s) is less than 2 years. This indicates that they do not mind changing jobs often if it helps them earn more and grow faster in the profession. As long as they are with their current organization, they are committed to the job/projects they work on. But after acquiring the work experience, most SDs start looking for better opportunities to speed up their career growth and do not hesitate to shift their organizational loyalty for an extra buck, an additional perk, or other monetary considerations. With taxing jobs and demanding stressors, the increase in job burnout has drastically decreased the organizational commitment of SDs.

Job burnout and interpersonal relationships. Confirming earlier findings in service professions (Burke & Greenglass, 2001; Maslach & Jackson, 1985), the influential stressors of irregular shifts and work–family conflicts followed by other role and job stressors have increased job burnout, leading to a perceptible decrease in social interaction and interpersonal relationships. Indians are strongly attached to families (Sinha et al., 2004). When role and job demands increase, the quality time required for the family tends to decrease, resulting in work–family conflicts and eventually causing job burnout. Thus, it becomes extremely difficult for SDs to strike a balance between family and professional life. As there is no standardized work schedule and SDs have to work according to project specifications, they contact their office any time and anywhere to meet the project/client requirements. They are hardly left with time to fulfill social obligations and responsibilities.

Buffers

Early research by Schaufeli and Bakker (2004) suggests that job/personal resources play a significant role in JDs–Rs, because they reduce job burnout by strengthening the person's ability to handle stressful situations. Results of this study support the JDs–Rs prediction that SWB and

practicing yoga and meditation of SDs decrease the burnout-linked job performance. Moreover, SWB, social support, and the practicing of yoga and meditation reduced the adverse association of job burnout with organizational commitment and interpersonal relationships.

By studying health-related consequences of job burnout among Indian SDs, it was found that social support is the most influential buffer of job burnout compared with practicing yoga and meditation (Singh & Suar, 2011). However, with work-related consequences of job burnout, this study finds practicing yoga and meditation as a more influential buffer compared with social support. Focusing more on family issues (Bolger, DeLongis, Kessler, & Wethington, 1989; Pearlin & Schooler, 1978) and adopting self-regulated coping mechanisms, particularly practicing yoga and meditation during early hours with family members, can be helpful in reducing work–family conflicts, boosting social support, and also bringing more physical, mental, and behavioral stability. The World Health Organization (2002) recommendations for physical activity could reduce 1.9 million deaths globally. Like physical activity, practicing yoga and meditation may counter burnout-induced morbidity and mortality. The software industry can promote the indigenous healing practices because of their sociocultural acceptability. As reported earlier, 44% of SDs reported experiencing job burnout; thus, clinical screening can be performed on SDs annually so that it is prevented with early intervention before it is too late.

The phenomenon of job burnout is extensively studied in services professions (Maslach et al., 1996) in the Euro-American cultures. This study breaks fresh ground. First, contradicting the prevailing common sense, a positive association is found between stressors and professional efficacy of job burnout. Also, job burnout has shown to enhance job performance. Second, practicing yoga and meditation is found to be the most influential buffer of job burnout on work-related outcomes in this study and social support on health-related outcomes (Singh & Suar, 2011) in another study. Therefore, important buffers are found to vary in different contexts. These findings call for intervention in work settings to offset the adverse consequences of job burnout.

There are certain limitations of the study that must be acknowledged. First, the self-reported responses obtained from the questionnaire may not be free from social desirability effects. Social desirability responding can be controlled by (a) developing projective inventory (Puhan, 1995) to assess the constructs and (b) partialling out the effects of social desirability in data analysis (assessing social desirability with other constructs). Similarly, the direct association between job burnout and performance is contrary to previous studies (Cropanzano et al., 2003; Maslach, 1982). These may be partly because of the self-reported measure of job performance as SDs might have overevaluated their

performance. Job performance of SDs assessed from their supervisors/team leaders' ratings (Prasad & Suar, 2010) or from their traditional performance appraisal records may reveal a slight different pattern of association with burnout. It warrants further investigation. Second, job burnout may differ across different age and gender groups. This study was carried out on young SDs who were likely to experience more job burnout. Females, who made up 28.2% of the studied sample, are also likely to report more job burnout in comparison to males. We did not do segregated analysis for different age-groups because of predominantly young SDs in the sample and for males and females because of the disproportionate representation of females. Future studies may consider different age-groups and do separate analyses for males and females to reveal their differing extent of job burnout. Third, neither the stressors of job burnout nor the consequences of job burnout can be fully controlled in the work environment. However, practicing yoga and meditation can bring more mental and physical resilience to partially counter the adverse association of job burnout. The sociodemographic profile of SDs along with the typical culture and operational practices in software industries might have yielded such findings; therefore, caution must be exercised in generalizing the findings to other industries.

The return rate of the questionnaire survey was 30%. The remaining 70% of SDs who did not respond to the questionnaire survey might have experienced more or less burnout compared with those who responded. Future research can try to understand who responds and who declines and why. Unlike the one-time investigation in this study on job burnout, longitudinal research on the same SDs can probe the development of job burnout over time. Furthermore, the plausibility of the proposition that job burnout, as conceived here in terms of its central meaning, may overlap to some degree with state of chronic fatigue syndrome or with its immediate precursor, chronic fatigue, has yet to be tested. In future investigations, individuals who score highest on burnout measures may be followed up for possible development of chronic fatigue syndrome. Moreover, software projects in India are mainly sponsored by American and European clients. SDs who work in requirement teams, software design teams, software development teams, and software-testing teams do so repeatedly in accordance with their experience across software projects with the directive of their team leaders. Inadequate task significance and freedom of SDs along with the antecedents found in this study can cause the psychological state of job burnout that can decrease their work-related behavior, and the most influential buffer found in this study can suppress the adverse consequences of job burnout. This can be investigated extending job characteristics model (Hackman & Oldham, 1980). Organizational politics that may moderate the relationship between job burnout and work-related outcomes needs exploration.

Appendix
Role Ambiguity

1. I feel secure about how much authority I have.
2. Clear planned goals and objectives exist for my job.
3. I know that I have divided my time properly.
4. I know what my responsibilities are.
5. I know exactly what is expected of me.
6. Explanation is clear of what has to be done.

Role Conflict

1. I have to do things that should be done differently.
2. I have an assignment without the manpower to complete it.
3. I work with two or more people who operate quite differently.
4. I have to pass on rule or policy to carry out an assignment.
5. I received incompatible requests from two or more people.
6. I do things that are apt to be accepted by one person and not by many.
7. I received an assignment without adequate resources and material to execute it.
8. I work on unnecessary things.

Schedule Pressure

Schedule to complete the job . . .
1. . . . compels to work overtime
2. . . . occurs regularly
3. . . . reduces efficiency
4. . . . increase errors
5. . . . affects peace in the family
6. . . . affects peace of mind
7. . . . hampers initiatives
8. . . . hinders meeting project deadlines

Irregular Shift

1. I work in regular hours.
2. I work in night to complete the assigned job
3. Schedules of work change regularly.
4. I work almost day and night.

Pressure From Client Interaction

1. Unclear expectations of client(s)
2. Incomplete requirements given by client(s)
3. Lack of consensus about project specification(s)

(continued)

Appendix (continued)

4. Prolonged/lengthy discussions with client(s)
5. Frequent changes in design/requirements made by client(s) during the course of their project(s)
6. Inadequate interactions with the client(s)
7. Lack of cooperation from client(s)

Group Noncooperation

1. Lack of trust among team members
2. Lack of support from team members in experimenting and learning
3. Lack of problem sharing
4. Lack of openness in expressing opinions/creative ideas
5. Limited functional autonomy in the team
6. Presence of rivalry in my project team
7. Conflicting interpretation of goals of the project
8. Covert discrimination and favoritism
9. Diversity of opinions among team members
10. Lack of clarity regarding the goals and objectives of my job
11. Unsure about how much authority I have
12. Professional incompetence of project supervisors
13. Professional incompetence among my project colleagues

Psychological Contract Violation

1. Salary
2. Pay raise
3. Bonus
4. Training
5. Advancement opportunities
6. Career developments
7. Overall benefits
8. Retirement benefits
9. Health care benefits
10. Decision-making input
11. Job responsibility
12. Job challenge
13. Feedback on performance
14. Supervisory support
15. Organizational support
16. Job security

Work–Family Conflict

1. Thinking of my work even at home
2. Carrying over emotions and feelings felt at home into the job and vice versa
3. Doing job work at home

4. Having to manage both home and office work
5. Increased workload leads to reduction in time given to the family
6. Frequent trips keep away from home
7. Constantly work during late nights, early mornings, or weekends to complete the project

Job Performance

1. Taking decisions
2. Meeting deadlines
3. Producing satisfactory quality of work
4. Producing satisfactory quantity of work
5. Planning and organizing work
6. Facing conflict situation
7. Feeling confident to handle the job

Organizational Commitment

1. I would be very happy to spend the rest of my career with this organization.
2. I enjoy discussing my organization with people outside it.
3. I really feel as if this organization's problems are my own.
4. I think that I could easily become as attached to another organization as I am to this one.
5. I do not feel like part of the family at my organization.
6. I do not feel emotionally attached to this organization.
7. This organization has a great deal of personal meaning for me.
8. I do not feel a strong sense of belonging to my organization.
9. I am not afraid of what might happen if I quit my job without having another one lined up.
10. It would be very hard for me to leave my organization right now, even if I wanted to.
11. Too much in my life would be disrupted if I decided I wanted to leave my organization.
12. It would not be too costly for me to leave my organization now.
13. Right now, staying with my organization is a matter of necessity as much as desire.
14. I feel that I have too few options to consider leaving this organization.
15. One of the few serious consequences of leaving this organization would be the scarcity of available alternatives.
16. One of the major reasons I continue to work for this organization is that leaving would require

considerable personal sacrifice—another organization may not match the overall benefits I have here.

17. I think that people these days move from company to company too often.

18. I do not believe that a person must always be loyal to his or her organization.

19. Jumping from organization to organization does not seem at all unethical to me.

20. One of the major reasons I continue to work for this organization is that I believe that loyalty is important and therefore feel a sense of moral obligation to remain.

21. If I get another offer for a better job elsewhere I would not feel it was right to leave my organization.

22. I was taught to believe in the value of remaining loyal to one organization.

23. Things were better in the days when people stayed with one organization for most of their careers.

24. I do not think that wanting to be a "company man" or "company woman" is sensible anymore.

Interpersonal Relationships

1. You have good relationships with all your family members.
2. You have good relationships with all your colleagues.
3. You have good relationships with all your friends.
4. You have good relationships with all your relatives.
5. You have good relationships with all your community members.

Subjective Well-Being

1. In most ways my life is close to my ideal.
2. The conditions of my life are excellent.
3. I am satisfied with my life.
4. So far I have got the important things I want in life.
5. If I could live my life over I would change almost nothing.

Social Support

1. You can get all the support whenever you are in need from your spouse.
2. You can get all the support whenever you are in need from your family.
3. You can get all the support whenever you are in need from your friends.
4. You can get all the support whenever you are in need from your team members.
5. You can get all the support whenever you are in need from your supervisor.

6. You can get advice to make decisions from your spouse.
7. You can get advice to make decisions from your family.
8. You can get advice to make decisions from your friends.
9. You can get advice to make decisions from your team members.
10. You can get advice to make decisions from your supervisor.
11. You can share and talk about your problems with your spouse.
12. You can share and talk about your problems with your family.
13. You can share and talk about your problems with your friends.
14. You can share and talk about your problems with your team members.
15. You can share and talk about your problems with your supervisor.

Yoga and Meditation

1. Engage in religious activity (*puja* or prayer)
2. Practice yoga and *asana*
3. Practice meditation
4. Practice breathing exercise such as pranayam
5. Going for morning walk
6. Take short breaks to prevent monotony in work
7. Member of a laughing/entertainment club

Note: The Maslach Burnout Inventory–General Survey is copyright protected by Consulting Psychologists Press, Inc. Therefore, it is not presented in the appendix.

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