SABBATICAL LEAVE AS A "TIME OUT" FROM ACADEMIC JOB STRESS: A TEST OF CONSERVATION OF RESOURCES THEORY

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Abstract

To test hypotheses derived from Conservation of Resources Theory (COR), research showing the ameliorative effects of a short respite from work on job stress and strain was replicated among academics on a protracted respite–Sabbatical leave. In a quasi-experiment, 16 faculty members from 10 universities in three countries completed measures of job stress, strain and coping resources before, during and after their Sabbatical. They were compared to 148 matched controls who were not on leave during the same period. Analysis of variance detected significant declines in perceived stress and burnout during the respite among those who were on Sabbatical and no changes among the control participants. Furthermore, the respite promoted sense of control, positive affect, and life satisfaction. The results confirm COR and extend the length of leave from work that produces ameliorative respite effects from the days and weeks of previous research to months and years.

Studying Stress: The Respite Design

Respite research began as a way to examine the impact of job stress on strain using a more rigorous method than most previous job stress research. Over time, studying stress during such between-events respites, especially vacations, emerge as a topic of study in its own right. (Eden, 2001). Respite research uses repeated-measures designs to examine the hypothesized effects of job stress on strain without the causal ambiguity of single-occasion, stress-strain correlations. Workers are observed on the job and during low-stress off-the-job periods, called respites. A respite from work may be a day off, a weekend, a vacation, or some other form of absence from the work setting when the everyday pressures of the job may be absent. On each occasion workers rate both subjective stress to validate the presumed high or low stress of the occasion, and psychological strain as a hypothesized response to stress. Analyzing the data as interrupted time-series design, causal inferences concerning the effects of stress on strain can be drawn (Eden, 1982, 1990, 2001). A recursive pattern of rising and falling subjective job stress and strain, as objective job stress is present and absent, respectively, confirms the hypothesis that stress causes strain. Because a time-series design is relatively free of causal ambiguity, Cook & Campbell (1979) stated that “This design is obviously a very powerful one for inferring causal effects” (p. 222) and rated it very high on internal validity. The rival hypotheses that a reduction in stress and strain caused a respite such as vacation, or that an increase in job stress and strain...
caused a return to work, are untenable. Hence, it is a natural quasi-experiment that rules out the major threats to internal validity posed by measuring both stressors and strain once using questionnaires completed by the same individual and it may be the closest one can get to internal validity in ethically acceptable stress research (Eden, 2001).

Following the work of Kahn, Wolf, Quinn, Snoek & Rosenthal (1964), most scholars defined job stress in terms of role demands originating in the work environment. Stressors such as overload and role conflict are hypothesized to cause strain. A major strain produced by job stressors is burnout. Maslach & Jackson (1981) defined burnout as including exhaustion, depersonalization, and a diminished sense of personal accomplishment. Recently Maslach and her colleagues have revised their conceptualization of burnout and applied it to people in jobs beyond the helping professions (Schaufeli, Leiter, Maslach & Jackson, 1996).

Several studies have compared stress and strain during routine work to stress and strain on single days off (Frankenhaeuser et al., 1989), weekends (Halberg, Engeli, and Hamburger, 1965), vacations (Caplan & Jones, 1975; Laoundsbury & Hoopes, 1986; Eden, 1990; Westman & Eden, 1997; Etzion & Westman, 2001, Westman & Etzion, 2001, Westman & Etzion, in press), reserve military service (Etzion, Eden & Lapidot, 1998), and business trips (Westman & Etzion, in press). Most of the earliest studies treated the respite as an event useful for studying job stress and some of the latest focused also on the respite itself as the topic of research. Either way, the results have consistently demonstrated the confirmatory pattern of stress and strain means rising during work and falling during respites (or immediately after), showing that respites bring relief from job stress and strains. Thus, what began as an improved way to study job stress is evolving into a new area of inquiry, as the absence of job stress during the off-job respite is joined by the respite itself as an interesting topic to research.

The present quasi-experiment expands the stress-respite research by adding a new type of respite to this growing literature, namely, sabbatical and by measuring strains not previously examined using the respite design. The general purpose was to test the hypothesis that stressors cause strain and that Sabbatical, as a respite, has an ameliorative effect on stress and strain. Along with psychological strains such as burnout (Etzion et al., 1998; Westman & Eden, 1997; Etzion, in press; Westman & Etzion, in press) and life satisfaction (Lounsbury & Hoopes, 1986) that former respite research focused on, we examined the respite impact on positive affect and professional self-efficacy. Moreover, following Westman & Etzion (2001) that expanded the
respite research into behavioral strain we tested the impact of Sabbatical on academic performance. Furthermore, The present study expends the stress-respite research by encompassing a population–university academic staff–hitherto not studied using this paradigm, by appreciably extending the length of the respite studied, by enriching the literature on stress-strain moderators, both features of the respite and traits of the individuals observed, and by grounding it in Hobfoll’s (1989) conservation of resources (COR) theory.

How Respites Create Relief: The Respites’ Ameliorative Mechanisms

Although the respite research has dealt with the impact of respite on psychological and behavioral outcomes and the moderating effects of various personality and demographic characteristics, the respite research has been mostly atheoretical (Westman, 1999) and the psychological mechanisms through which respites contribute to well being have yet to be explicated. Most authors simply assume a spontaneous restorative function. In an effort to fill this gap, Westman & Eden (1997), Westman (1999) and Westman & Etzion (in press) have suggested to embed the respite research within Hobfoll's (1989) conservation of resources (COR) theory of stress. The COR theory makes novel predictions about what happens in the absence of stress. According to COR theory, stress occurs when individuals are either threatened with resource loss, actually lose resources, or fail to gain resources following resource investment. Those who possess strong resource pools often experience spirals of resource gain because initial gain begets further gain. The cycle of gain generates its own positive energy because resource accretion means that more resources can be invested in obtaining still further gains.

One of the mechanisms that might offset the vicious cycle loss and start a cycle of resource gain is a respite from work. Whereas negative life events lead to loss resources, positive life events, such as vacations, may lead to gain. Hobfoll and Shirom (1993) suggested that a relaxation period between stress episodes allows regrouping of resources such as social support and sense of mastery, replenishing resource reservoirs. A respite may be a way to facilitate such regrouping. Respite may also alleviate burnout by halting the resource loss cycle. Considering COR theory, respites evidently differ in the extent to which they provide opportunity for repletion of exhausted psychological resources. A Sabbatical of some months or more may be a good way to facilitate such regrouping. Although Westman & Eden (1997) and Westman & Etzion (in press) explained the respite effect they found in terms of Cor theory, they didn’t measure the main component of the theory, resources. In order to validate the Cor predictions
regarding the respite effect we used a resources measure derived from the theory.

**Sabbatical Leave as a Respite**

Sabbaticals are commonly defined as paid leaves of absence for a faculty member or occasionally an administrator for personal and professional improvement or development (Mill & Kang, 1997). Sabbatical leave as experienced by academic staffers every several years is a respite from routine, year-to-year work. However, it obviously differs from the respites previously studied in several important ways. First, it is still largely restricted to academics in university settings, though some workers in other occupations do get sabbatical leaves (e.g., school teachers and some high-level high-tech employees). Furthermore, sabbatical leave is appreciably longer than the respites studied to date. The typical length of a Sabbatical is either half-year with full compensation or a full academic year with a somewhat reduced compensation. Moreover, sabbatical leave is typically not a nonworking respite; rather, like active reserve military service and overseas business trips, it is a period of work, sometimes rather intense work, though usually of a different nature and in a different location than routine work. Indeed, part of the justification of a university sabbatical is to afford the academic the needed relief from the chronic pressure of routine teaching and administrative duties to do the requisite parts of the job, such as reading and writing, that are too often deferred during routine academic years due to overload with routine duties. In addition, usually the Sabbatical requires that the recipient submit a report of some nature upon return from the leave (Boening, 1996, in Miller & Kang, 1997). Although Westman and Etzion (in press), studied the impact of overseas business trips on stress and burnout, showed that working respite is not the same as a vacation respite, their participants reported less stress and strain after return, indicating an ameliorative postrespite effect. Similarly, Etzion et al. (1998) found that active reserve service, albeit not nonworking respite, provides relief from job stress and strain. Thus, despite not being a free working respite, Sabbatical may provide an opportunity for achieving personal growth and renewal.

**The Benefits of a Sabbatical**

Since Sabbatical leaves were first introduced at Harvard University in 1880, they have been recognized for their benefits. According to Toomey and Connor (1988) sabbaticals historically have been viewed as a way to deal with stress and job burnout, to broaden professional skills, and to provide an opportunity for personal growth. According to Zahorski
(1994) the results of Sabbaticals are usually new and improved attitudes and perspectives, renewed vigor, better physical and emotional health, and such quantifiable outcomes as articles books and scientific discoveries. Miller & Kang (1997) reported that teaching performance was believed to be improved following the Sabbatical by 68% of the responding faculty and 85% of the respondents indicated they were more productive as scholars as a result of taking a Sabbatical. However, comparing number of publications during the three years before and after Sabbatical, utilizing objective data on research production, they found decrease in research productivity after Sabbatical in most academic areas. Yet, Miller & Kang noted that personal narratives have demonstrated consistently that faculty experienced an emotional "recharging" while on Sabbatical. Jarecky and Sandifer (1986) reported that 80% of the medical school faculty members whom they interviewed rated their general satisfaction from their sabbatical experience as 8 or higher on a 10-point scale. Interviewees reported using the sabbatical as an opportunity to think about their careers, redefine objectives, and reconsider family roles. The sabbatical enabled them to “reestablish a sense of intellectual liveliness,” including the development of new research interests and it gave them time to think through problems in dept. According to Neidle (1984), sabbaticals provide rest, recreation, new ideas, and otherwise alleviate burnout. He furthermore suggested that leaves of about three months would provide “an ideal device” for preventing occupational stress. Sorcinelli (1986) focused as well on the benefits of sabbaticals. Respondents were 112 college faculty who, by means of interviews and questionnaires, pointed to several advantages of a sabbatical. These included opportunity to initiate research, open up fresh scholarly interests, catch up with new developments, and a chance for respite from teaching and administrative responsibilities. Taking time off permitted them to renew their intellectual and emotional resources. Similarly, Hendel and Solberg (1983) found that the most frequently mentioned benefits of a quarter leave program were “gave me insight into my research” and “gave me a break from teaching and/or administration”.

Most of these findings describing the benefits of a sabbatical exemplify resource repletion and are in accord with our adoption of COR as a nomological net to guide our research. We thus conceived of respite as a time to replenish depleted personal resources. Accordingly, we measured sense of control, social support, positive affect and life satisfaction, repeatedly, to determine whether indeed the Sabbatical does afford the individual a chance to replenish these resources and gain new ones.
Moderators of Respite Effect

Sabbaticals may differ in the extent to which they provide opportunity for repletion of exhausted psychological resources. The nature of the sabbatical differs from individual to individual, depending on how they have chosen to use their sabbatical time and how they have actually experienced it. Previous studies found that detachment from work and vacation satisfaction (Westman & Etzion, 1997; Etzion et al., 1998) moderate the impact of respite on strain. The greater the detachment and the satisfaction, the stronger the effect that respite experience had in relieving stress and burnout. Accordingly we predicted that the nature of the sabbatical as a respite (length, site, inside or outside home country, adjustment to new environment, with or without family, detachment from work, and quality of the sabbatical experience) moderate the respites effects.

Stress in Academe Domain

Sources of Stress in Academe

Although traditionally life as an academic professional has not been considered stressful (French, Caplan, & Harrison, 1982), recent changes in universities are intensifying the pressure on academics by demanding more tasks. Many universities have increased class size, reduced budgets, and introduced various forms of review and accountability, all of which can increase the job stress experienced by academic professionals. In view of the changes universities face, academe has become a fitting site to study job stress. It is rather ironic that the academics who do job-stress research have largely neglected to study their fellow academic employees.

Research on stress in academe began in the early 1970s. Eckert and Williams (1972) found that routine duties, long hours, poor facilities, friction among faculty members, and administrative red tape were the prevalent sources of stress. Thorsen (1996) found that the quantity rather than the nature of the academic work was stressful. Respondents reported that the hours spent on the job and the time-consuming tasks were the sources of their job stress. They furthermore reported that research was most stressful whereas teaching was least stressful. Narayanan, Menon & Spector (1999) found that interpersonal conflict, work overload and time wasters were common stressors among university professors. Winefield & Jarrete (2001) identified 11 sources of stress among Australian faculty members and reported that ten of the 11 sources were rated 2.7 or higher on a 4-point scale. The found that lack of funding was perceived as the most stressful whereas computing facilities was least stressful.
Keinan and Perlberg (1987) concluded that there are similar patterns of results concerning faculty rankings of stress in Israel and in the United States. Academicians in both countries indicated that the major sources of occupational stress were excessively high self-expectations, insufficient time for keeping up with professional developments, overload, difficulties in obtaining research funds, low pay, and pressure to publish. Peters and Mayfield (1982) found that the main reasons for burnout among faculty members were heavy teaching loads, university demands for doing research, and insufficient family time. Taris, Schreurs & Van Iersel (2001) reported that stress resulting from structural aspects of one’s teaching tasks, especially the time demands, were to a large degree responsible for occupational stress among university staff members. Leung, Siu & Spector (2000) identified six sources of stress among Hong Kong faculty members, namely, recognition, perceived organizational practice, factor intrinsic to teaching, financial inadequacy, home/work interface and new challengers.

**Reactions to Stress**

A few studies have found that stress in academe impairs physical and psychological health. Peters and Mayfield (1982) investigated reactions to stress in academe and found that 50% of the faculty members complained of burnout and frustration due to job stress. Similarly Blix, Cruise, Mitchell, and Blix (1994) found that faculty who experienced high levels of work stress reported higher burnout levels and health problems. Taris, Schreurs & Van Iersel (2001) found that high time demand and high stress resulting from the teaching task were related to emotional exhaustion, mental health complains and psychometrics complains. Winefield & Jarrete (2001) found that academics engaged in both teaching and research experienced the highest level of psychological distress. Similarly, Blackburn, Horowitz, Edington, and Klos (1986) found that job stress of faculty was strongly related to physical symptoms and sick days and Leung, Siu & Spector (2000) found that it was negatively related to job satisfaction and positively related to psychological distress.

These studies are primarily descriptive in nature. They were based on asking academic interviewees or respondents to questionnaires to report their perceptions and attitudes. As these studies exemplify, the research on stress and strain among university faculty members has been cross-sectional or correlational in design, rendering the causal interpretation of the results ambiguous, and the conclusion that academic stress causes strain among academics tenuous.
Therefore, we tested the stress-strain hypothesis more rigorously using the repeated-measures respite design and by introducing moderators.

**Moderators**

One of the axioms in occupational stress research is the importance of individual characteristics in mediating or moderating the relationship between stress and outcomes. Personality traits, demographic variables, and occupational characteristics have been found to be key moderators of the impact of stress on the individual. Based on research reviewed elsewhere, we hypothesized that general self-efficacy, sense of control, positive/negative affectivity and social support moderate the impact of stress on strain. Concerning the academe domain, personal characteristics of faculty members that have been most frequently investigated in this context are gender, age, tenure, rank, and academic discipline.

**Gender.** Gender is an important individual difference variable in job stress research (Johnson & Hall, 1996). However, there is very little research on gender differences in faculty stress and in sabbatical experience. One possible reason for this scarcity might be Hendel and Solberg’s (1983) finding that a higher percentage of men than women have been on sabbatical. This being the case, perhaps most past samples have not included enough women to investigate gender differences in sabbatical experience. However, Westman & Eden, in their vacation study found that women experienced greater relief than men.

There is some research on gender differences in faculty stress. Whereas Leung et al. (2000) did not find any gender differences in stress experience among academicians, other researches have found. Thorsen (1996) found that women in academe experience more occupational stress than men. This is consistent with the findings of Johnsrud (1991), and Witt and Lovrich (1988) who reported that job stressors are experienced more keenly by women at the academe. Both Keinan and Perlberg (1987) studying Israeli faculty members and Gmelch, Lovrich, and Wilke (1984) investigating faculty stress in American universities found that female academicians reported a higher level of stress than did their male counterparts. Finally, Narayanan, Menon & Spector (1999) found that although interpersonal conflict was the frequent stressor for both females and men, a greater proportion of females reported this to be stressful. Males on the other hand reported time or effort wasters to be the greatest source of stress.

**Tenure and rank.** Thorsen (1996) found that professors without tenure experience more occupational stress than those who are tenured, though rank had a stronger effect on perceived
stress than tenure status. Full professors reported less stress than the other two ranks (associate and assistant). Similarly, Keinan and Perlberg (1987) found that tenured faculty reported less occupational stress than did their untenured peers. They also found differences among academic ranks with full professors reporting less work-related stress than any other ranks. Marayanan et al. (1999) found that tenured faculty reported lack of reward and recognition as more frequent stressors while the non-tenured reported time/effort wasters as the most frequent stressor.

Kristenen (1996) reviewed empirical findings on within-occupation variance and discovered that official titles subsume heterogeneous work functions that are associated with different degrees of strain. Richard and Kriehok (1989) found that for men, strain decreased markedly as rank increased from assistant to full professor. These results can be explained by the demand-control model (Karasek, 1979). Among faculty members, the levels of demands, control, and decision latitude differ markedly for assistant, associate, and full professors. Even assuming that job demands are similar across ranks, the greater control and decision latitude that come with tenure and rank might explain the decline in strain. Richard and Kriehok (1989) found no differences between genders or occupational ranks in perceived role stressors among university faculty. However, they did find a significant interaction between gender and rank in predicting strain levels; whereas strain decreased for men as they moved up in rank, it tended to increase for women as they were promoted. Richard and Kriehok attributed this interaction to the small number of women who have made it to the rank of full professor. This paucity means that there are few same-gender role models who can mentor or coach the few women who do advance to higher academic rank and thus help them cope with the stress of the job.

Academic discipline. Thorsen (1996) and Gmelch et al. (1984) found no differences in job stress according to the area of study (e.g., humanities, mathematics, science, or education). Grouping the various humanities, the maths, and sciences may have masked the discrete effects of disciplines. Winefield & Jarrett (2001) found differences in job satisfaction and trait anxiety according to the area of study. Job satisfaction was higher in Medicine than in any of 10 other areas and anxiety was the highest in law and mathematical sciences. This implies that we need compare across more specified disciplines.

Age. Thorsen (1996) found that stress seemed to decline with age. However, age and experience were closely related. Therefore, relationship between stress and age in this sample may be accounted for by experience. If this finding is replicated, a practical recommendation
might be to space sabbaticals differently, such as more during earlier stages of an academic career than later. As it is hard to know how much of the age and tenure effects obscure one another, we tested the effects of age and tenure.

Based on the studies reviewed we hypothesized that gender, age, tenure, rank, and academic discipline moderate the impact of stress on strain.

Method

Design and Sample

The population consisted of all faculty members at ten universities located in New Zealand the United States and Israel who applied for sabbatical leave, leave of absence without pay, exemption from teaching load, or the like (“respite group”) during 2000-2001 and 2001-2002. They were asked to participate in the study by completing questionnaires at three occasions: before, during, and after their leave. This enabled testing the stressor-strain relationship hypothesis by comparing levels of stress and strain while participants were alternately on and off their jobs. Cook and Campbell (1979) and Eden (1982, 1990, 2001) proposed that data gathered this way can be analyzed as a “partially interrupted time series”, a statistically powerful quasi-experimental design that has very high internal validity and from which causal effects can be drawn.

Furthermore, the research design involved a group of comparable respondents who were not on Sabbatical or the like during the same year. To facilitate valid comparisons between those who were on "respite" and those who were not, for each individual in the respite group, we selected "matches" based on similarity of academic department, rank and gender. They were asked to complete questionnaires on the same occasions as their colleagues in the respite sample.

Thus, we combined the Cook & Campbell's (1979) interrupted time-series design with multiple replications used in most previous respite studies (Westman & Eden, 1997; Etzion & Westman, 2001, Westman & Etzion, 2001, Westman & Etzion, in press) with the matched-sample design used in Etzion, Eden & Lapidot (1998) and Etzion (in press) respite studies. Due to the presence of commensurate control group and the repeated measurement of the dependent
variables in the presence and absence of the putative casual variable, stress, the threat to internal validity is minimized and causal inferences concerning the effects of stress can be concluded.

Response rate and sample characteristic can not be reported accurately yet as the data gathering is still proceeding. Generally, out of some 460 academicians who were going on Sabbatical or the like (“Sabbaticals”) only 230 completed the first questionnaire and till now 17 completed the second. Of these, 168 completed the two questionnaires. Out of some 550 matched controls only 218 completed the first questionnaire and 194 completed the second. Of these, 148 completed both questionnaires. The sample thus consisted of 168 "Sabbaticals" and 148 matches who completed both questionnaires.

Due to the matching procedure, there were no significant differences between the two groups on all available demographic indicators except tenure. The average age of "Sabbaticals" and controls was 55 and 54, respectively (range = 37-69, 36-71). 28% of the respondents in both groups were women and 72% were men. Most had doctoral degree (98% in both groups) which was granted between 1958 to 1997 ($M=1979$) among the “Sabbaticals” and between 1957 to 2000 ($M=1981$) among the controls. Mean seniority among the “Sabbaticals” was 20 years, ranging from 3 to 41 years and among the controls 18 years, ranging from 1 to 46 years. Their ranks were as follows: 41% of the “Sabbaticals” and 39% of the controls were full professors, 52% and 45% were associate professors or senior lecturers and 7% and 16% were assistant professors or lecturers, respectively. They represented faculty members from the humanities (27% of the "Sabbaticals" and 30% of the controls), social sciences (23% and 19%), business administration (10% and 12%), life sciences (11% and 10%), education (5% and 6%), exact sciences (9% and 6%), engineering (4% and 3%), medicine (4% and 5%), agriculture (4% and 5%) and law (2% and 1%). The only exception was a significant difference in tenure, $t (307)=2.82, p<.05$. Ninety percent of the “Sabbaticals” were tenured in contrast to only 79% of the controls. Furthermore, these two groups did not differ significantly also on all stress and strain indicators.

**Measures**

We used self reported questionnaires to measure all variables. Index reliability was estimated by Cronbach's coefficient alpha on each occasion. All of these occasions are busy times in the lives of these individuals including an intrusive occasion in the privacy of participants' respite. The imposition of long questionnaires risked their refusal or partial
cooperation. To prevent respondent fatigue, we used measures that operationalize the construct of interest with as few items as possible while still maintaining adequate reliability.

Due to a natural variation in the Sabbatical length (some took brief sabbaticals of only three months or half a year whereas some took a whole year), the time frame the participants were asked to refer to while completing most items that were measured more than once was "the past few months". An exception was the second measurement of the respite group, where the referent time unit was "since beginning the Sabbatical".

**Perceived Stress** - Was assessed before, during and after the Sabbatical using three indices one based on stressors that characterize the Academy domain, the second based on role theory (Kahn, Wolf, Quinn, Snoek & Rosenthal, 1964), and the third based on Hobfoll's (1989) conceptualization of stress. Thus, the faculty stress and the quantitative workload indexes reflect perceived job stressors whereas the resources measure represents perceived inclusive stress beyond specific domain.

**Faculty stressors** – Was measured using ten items selected from the 45-items Faculty Stress Index (FSI) developed by Gmelch, Livrich, and Wilke (1983) and translated into Hebrew and validated by Keinan and Perlberg (1987). The items' wording was altered a bit to fit the research context more closely. The index measured on a Likert scale of 1 (not at all) to 5 (very great), the extent to which each sources of stress has characterized the respondents work as a faculty member during the past few months. Eight of the selected ten items were found by Keinan and Perlberg (1987) to be within the most 10-serious sources of stress among Israeli academic. Sample items are "Insufficient financial support for my research", "Insufficient time to keep abreast professionally" and "Difficulty preparing a manuscript for publication." Another 2 items were chosen from the FSI due to their relevant to the present research context. For example, "Demanding teaching load". \( \alpha = .74 \) and \( .83 \) on the first and the second occasions, respectively. Test-retest reliability = .45.

**Quantitative Workload** - Was gauged by two items selected from the 5-items Quantitative Workload Inventory (QWI) developed by Spector and Jex (1998). The QWI designed to assess the amount or quantity of work in a job, as opposed to qualitative workload, which is the difficulty of the work. Spector and Jex (1998) reported an average internal consistency (coefficient alpha) of .82 across 15 studies for all 5 items. The respondents were asked to indicate how often, during the past few months, their job left them with little time to get things
done and how often they had to do more work than they could do well, ranging from 1 (less than once per month or never) to 5 (several times per day). High scores represent a high level of workload. These two items were chosen because Spector (personal communication, Mars, 2000) found they have an alpha about the same as the whole scale. In the present research α = .79 and .85 on the first and the second occasions, respectively. Test-retest reliability was .

**Resources** – Adopting Hobfoll’s (1989) definition of stress as a reaction to actually resource loss, threat of resource loss, or failure to gain resources after resource investment, which is derived from Hobfoll’s COR theory, we measured resources, before during and after the Sabbatical, using a bipolar gain-loss scale that was recommended by Hobfoll (personal communication, February 2000). The questionnaire contained 12 resources, which fall in 3 categories, conditions (e.g. Professional advancement, People from whom I can learn), persona characteristics (e.g., feeling that I am accomplishing my goals, Professional knowledge), and energies (e.g. free time, Energy). Respondents were asked to indicate how much of each resource they have lost, ranging from −3 (a very large loss) to −1 (a Little loss) or have gained, ranging from +1 (a Little gain) to a +3 (a very large gain), or neither (0) during the past few months. α = .86 and .89 on the first and the second, respectively. Test-retest reliability =.21.

**Burnout** - Was assessed before, during and after the Sabbatical using the 16-item Maslach Burnout Inventory-General Survey (MBI-GS) developed by Schaufeli, Leiter, Maslach & Jackson (1996) to assess burnout in occupational groups outside the human services, and translated into Hebrew and validated by Etzion (2000). The MBI-GS assesses the same three dimensions as the original MBI, using slightly revised items, and the three components are conceptualized in slightly broader terms, with respect to the job, and not just to the personal relationships that may be a part of the job (Maslach, Schaufeli, & Leiter, 2001). Thus, the MBI GS comprises three subscales: Exhaustion (five items; e.g. “I feel used up at the end of the workday”), Cynicism (five items; e.g. “I have become less enthusiastic about my work”) and reduced Professional Efficacy (six items; e.g. ‘In my opinion, I am good at my job). All items are scored on a 7-point frequency rating scale ranging from 0 (never) to 6 (every day). High scores on Exhaustion and Cynicism, and low scores on Professional Efficacy (reverse-scored) are indicative of high burnout. Exploratory factor analyses of all the items yielded three factors that parallel the factorial structure of the MBI-GS. α of the entire measure was .83 on both occasions.
On the first occasion $\alpha = .86, .76$ and .83 of exhaustion, cynicism and professional efficacy, an on the second occasion .87, .78 and .84, respectively. Test-retest reliability of the whole measure was .60 and of exhaustion, cynicism and professional efficacy .49, .59 and .61, respectively.

**Sense of Control** - Was gauged before, during and after the Sabbatical by three items contrived for the present research. They were designed to assess, on a 5-points Likert scale (1= strongly disagree, 5= strongly agree), the degree to which respondents found their lives and work controllable. The items are “I control how much time I invest in work”, “I determine with whom I spend my time” and "I stop working when I feel like it". High scores represent a high level of control. $\alpha = .75$ and .79 on the first and the second occasions, respectively. Test-retest reliability $= .46$.

**Social Support** – was measured before, during and after the Sabbatical. We adopted House's (1981) matrix definition of four kinds of support (emotional, instrumental, informational, and evaluational) that can be obtained from several sources. In the present research the sources were the respondent's family members and colleagues. Thus we used an 8 item measure of four types of support obtained from each of these resources, to measure the amount of support that the respondent felt he or she received during the past few months. All items are scored on a 5-point frequency rating scale ranging from 1 (never) to 5 (very often). High scores represent a high level of perceived support. Exploratory factor analyses yielded two factors that are in accordance with the 2-sources. $\alpha$ of the whole measure =.85 and 87 on the first and the second. On the first occasion $\alpha$ of respondent’s family members and colleagues were .8 and .88, respectively, and on the second occasion $\alpha = .88$ and .90. Test-retest reliability of the whole measure was .64 and of the respondent's family members and colleagues .63 and .59, respectively.

**Positive and Negative Affect** - Using eight items selected from the 10-item NA and PA scales that comprise the Positive and Negative Affect Schedule (PANAS) developed by Watson Clark & Tellegen (1988), we measured PA before, during and after the Sabbatical whereas NA was measured only before the sabbatical. Watson et al. (1988) reported high internal consistency (coefficient Alpha) of the PANAS scale for different time instructions (e.g. today, past few weeks, year), ranging from .86 to .90 for PA and from .84 to .87 for NA, and the reliability was unaffected by the time frame (see further information on the PANAS in Watson et al., 1988).
Based on Median Varimax-Rotated Factor Loading computed by Watson et al. (1988), we retained the four mood descriptors they found best captured each dimension. PA reflected the extent to which the respondent felt interested, excited, enthusiastic and inspired and NA reflect the extent he/she felt upset, distressed, scared and jittery. Respondents indicated on a 5-point Likert Scale, ranging from 1 (very slightly or not at all) to 5 (extremely), the extent to which they have felt each mood state during the past few months. In the present research, $\alpha = .75$ and $\alpha = .88$ for PA on the first and the second occasions respectively and $\alpha = .79$ for NA. PA Test-retest reliability was .48.

**Life satisfaction** – Was assessed by four items chosen from the 5-items Satisfaction With Life Scale (SWLS) developed by Diener, Emmons, Larsen & Griffin (1985) and translated into Hebrew by Shmotkin, & Lomranz (1998). The SWLS designed to assess the cognitive component of subjective well being, as opposed to the affective component. It assesses satisfaction with the respondent’s life as a whole lighting the positive side of the individual experience. In their review of the SWLS, Pavot & Diener (1993) concluded, on the basis of data collected in several different samples, that the SWLS has strong internal reliability and a moderate temporal stability with sufficient sensitivity to detect changes in life satisfaction due to life events. Pavot & Diener (1993) reported a range of internal consistency (coefficient alpha) between .80 to .89 across 6 studies. We deleted the fifth item because Pavot & Diener (1993) a Arrindell, Heesink & Feij (1999) found it to be the weakest in terms of convergence with the other items. The respondents were asked to indicate the degree to which they agree with each statement (1= strongly disagree, 5= strongly agree). Sample items are "I am satisfied with my life" and "so far I have gotten the important things I want in life". In the present research, $\alpha = .87$ and .88 on the first and the second, respectively. Test-retest reliability = .75.

**General Self-efficacy (GSE)** - Was gauged after the Sabbatical using four items selected from the 8-item New General Self-Efficacy Scale (NGSE) developed, translated into Hebrew and validated by Chen, Gully & Eden (2001). Although the General Self-Efficacy Scale (SGSE (Sherer & Adams, 1983) has been the most widely used GSE measure, we chose the NGSE over the SGSE for two reasons: first, the NGSE is shorter than the SGSE (8 items vs. 17 items). Second, Chen et al. (2001) found it to be more valid measure of GSE than the SGSE scale. In addition, Chen et al. reported high internal consistency (coefficient alpha) of the NGSE, ranging from .85 to .90, and test-retest reliability, ranging from .62 to .86, across three studies. On the
basis of loading computed by Chen (personal communication, March, 2000), we chose the four items best captured the construct. Sample items are "I will be able to achieve most of the goals that I have set for myself" and "I will be able to successfully overcome many challenges". The items were scored on a five-point scale (1 = Strongly Disagree; 5 = Strongly Agree).

**Professional Efficacy** - Was assessed after the Sabbatical using eight items contrived for the present research. Accordingly with Eden (1988, 1996) and Woodruff and Cashman (1993) that proposed that each study should include a measure of self-efficacy that matches the particular performance being studied, we contrived eight items asking the respondent to rate how well he or she could perform professionally. Sample items are "I am able to publish in the leading journals in my field", "I am able to adopt new research methods" and "I am able to develop theoretical innovations". All items were scored on a 5-point Likert scale ranging from (not at all) to 5 (to a very great extent).

**Academic Performance** – Was measured after the Sabbatical using a 7-item measure that was constructed to assess the respondents’ performance during the past year. Six items asked the respondent to indicate how much outputs (e.g. research proposals, manuscripts or revisions submitted to journals, chapters for books) he or she have accomplished, ranging from 0 (none) to 4 (four or more). One additional item asked the respondents to evaluate his or her overall academic performance during the past year, ranging from 1 (fair) to 5 (extraordinary).

**Demographic characteristic** - A brief demographic questionnaire elicited information pertaining to age and gender, as well as work-related information such as permanent institution seniority, tenure, academic discipline, last degree and the year it was received.

**Sabbatical Variables**

**Sabbatical Expectations, Quality of the Sabbatical experience, Retrospective Evaluation** - We measured Sabbatical Expectations before the Sabbatical using eight items developed to assess general expectations and work-related-expectations the individual carried into the new situation. Four items asked the respondents to rate the extent to which they anticipate that during the Sabbatical they will have time for themselves, will do things they like to do or have wanted to do but lacked the time to do them before and will meet interesting people. Four items asked the respondents to rate different work-related-expectations such as collaborating research with colleagues, bringing themselves up-to-date professionally and producing output (papers, article etc.). One item ("developing teaching skills") was deleted since it weakened the scale reliability.
Exploratory factor analyses yielded two factors that overlap the expectations' sets. The items were scored on a 5-point Likert scale ranging from 1 (not at all) to 5 (to a very great extent). $\alpha = .77$ (all items) and .71 (each dimension).

**Quality of the Sabbatical Experience** was gauged during the Sabbatical using the same above eight items. Only the verb tense of the statements was changed to present. For example "am doing the things I like to do". High scores represent a high quality experience. Exploratory factor analyses yielded again the same two factors. $\alpha$ of all items and of general and work expectations were .77, .68 and .67, respectively. Similarly, Retrospective evaluation was assessed after the Sabbatical using the same scale in past tense. For example "I did the things I like to do". In addition, two open questions were added to the third questionnaire asking the respondents to describe the major benefits they derived from their sabbatical and the major deficiencies they experienced. This enabled us to learn more about the subjective experience of the respite and detect additional variables that might be useful to measure in future research.

**Sabbatical Satisfaction** - overall satisfaction with the Sabbatical was measured during a: after the Sabbatical, with a single item, on 5-points scale ranging from 1 (not at all) to 5 (to a very great extent).

**Psychological Detachment from Work** - This scale comprised five items concerning similarity of sabbatical activities to regular job activities, amount of contact with the workplace (e.g., visits, phone calls), thinking about the back-home job, feeling detached from permanent work place (reverse-scored) and engaging in things that concern the permanent workplace. Four items based on Etzion, Eden & Lapidot (1998) modified for this population and additional item contrived for the present research. The items were measured during the Sabbatical on a 5-points Likert scale (1= strongly disagree, 5= strongly agree). Low scores represent a high detachment. $\alpha = .81$.

**Adjustment** - Was measured during the Sabbatical using a 12-item measure. Those participants who spend their respite outside their home country were asked to indicate the extent to which various facets have made the Sabbatical a positive or negative experience for them, on a 5-point scale ranging from 1 (very negative) to 5 (very positive). Based on Black (1988) and Black & Stephens (1989) we measured two facets of adjustment. Seven items focused on adjustment to general conditions within the non-work environment of the new country (e.g. general living conditions, everyday customs that must be followed, cost of living) and five items
focused on adjustment to one's work environment (e.g. the host campus, working with host colleagues, the students). One item ("Teaching load") was deleted since it weakened the scale reliability. A factor analysis that was forced to two factors confirmed the suggested dimensions $\alpha$ of the entire measure was .75, $\alpha$ of adjustment to the non-work environment was .76, and of adjustment to work environment was .70.

**Sabbatical/Respite Self-Efficacy** - Adapting Eden (1999) suggestion we comprised nine items to measure the respondents’ beliefs regarding their capacity in various facets of the respite (e.g. I can form relationships with new people, I can cope with an unstructured schedule, I can cope with unfamiliar surroundings, I can derive maximal benefit from my Sabbatical), on a 5-point Likert scale, ranging from 1 (not at all) to 5 (to a very great extent). $\alpha = .89$.

**Characteristics of the respite** - A brief questionnaire elicited information regarding the kind of the respites (Sabbatical, Leave of absence without pay or other), length, site, outside or inside home country, with or without family, previous experience with sabbatical and division, working time (teaching, researching and other).

**Procedure**

A pilot study was conducted on a separate academician sample. Questionnaires were sent by the university’s Human Resources office to all faculty members at Tel Aviv University who were listed for Sabbatical leave in the Spring 1999 semester. The questionnaires were distributed a month before the semester ending and each questionnaire included sealed envelope addressed directly to the researcher. Of the 30 faculty members at Tel Aviv University who were listed for Sabbatical leave only three returned completed questionnaires. Similar procedure that was conducted at Haifa University yielded 4 completed questionnaires. Questionnaires were given also to some colleagues at the Faculty of Management at Tel Aviv University who were not departing for Sabbatical and they were asked to fill it out as though they were about to depart and provide comments. They do not belong to the sample but their comments were helpful.

The pilot was a failure in terms of response rate. We learned that the target sample will not respond to a questionnaire of the type and length we designed. We concluded that the questionnaire had to be drastically reduced in length. Therefore two steps were taken: first, we shorten the indices. For example, the already short, 8-item NGSE (New General Self-efficacy)
scale that developed by Chen et al. (2001) was reduced to only four items. Similar procedures were done in every index. The exception was the MBI-General Survey developed by Schaufeli et al. (1996) that has copyright protection that must be honored. Secondly, we decided to measure some variables only once instead of 3 times. Thus the final form of each questionnaire was short enough to be completed within 15 minutes.

The present research was conducted among faculty members at ten universities located in New Zealand (University of Waikato), the United States (University of California at Berkeley, Florida State University, Portland State University, University of South Florida, and University of Texas at Arlington) and Israel (Tel Aviv University, Haifa University, Bar Ilan University and the Hebrew University). A collaborator at each university got from the university's Division of Human Resources or from the dean's lists of those going on sabbatical during the coming academic year and sent them the first questionnaire. In order to maximize the response rate we approached the deans or the provosts, showed them the proposal, cover letter, and questionnaires, and asked them to send a direct appeal to their departing staff to complete the questionnaires. Additionally, at some universities the survey was widely publicized through the university newspaper.

Once a completed questionnaire from an individual from the respite sample was received, some matches were selected for him or her. In order to maximize control of extraneous sources of variance in the dependent variables we used the following matched-pairs techniques. First, a variation of matched-pairs snowball sampling in which every individual in the respite sample who agreed to participate was asked to nominate three colleagues in the same academic department, rank, seniority and gender, who were not taking sabbatical leave or the like during the same year. Those so nominated were recruited into the comparison sample. Second, the researcher chose the matched sample using available sources such as universities' catalogues on web sites which normally list faculty members, including specialty/department, seniority and rank. Gender was identified based on first name and/or pictures that are available in the web sites. The reason for choosing (or asking for) 3 matched controls instead of one per each participant in the respite sample was in order to verify rejoinder of at least one individual.

We sent the first questionnaire to each individual of the control group immediately after receiving questionnaire from his or her match from the respite group. The second and the third questionnaires were sent to each individual in the control group on the same occasions as to the
colleague in the respite group. The questionnaires were sent to all the participants even if they
did not complete one of the formers questionnaires. Although the second and the third
questionnaires were mailed to each matched-"pair" on the same time, we received them back at
different times, ranging from several days to two months.

The first occasion is the pretest and was administered a month before the end of the
semester before participants left for their sabbatical. This gave us preliminary data on their stre
and strain levels during routine work. Next they were asked to fill out questionnaires while the;
were in the middle of their sabbatical. As some of the participants were expected to reside
outside their home country during the Sabbatical, this timing coincided neither with their early
adjustment phase upon arrival at their overseas post nor with their closing down period near th
conclusion of their sabbatical. The third measurement is the posttest and was administered in t
middle of the semester that followed their leave. This measure may reflect some afterglow of t
respite and the beginning of renewed chronic stress. Since the research design includes group o
comparable respondents who were not supposed to be on leave, this timing coincided neither
with the semester break nor with the summer vacation.

A cover page informed the participants that they would be asked to fill out questionnai
on three occasions. Promising confidentiality, the participants were requested to write their na
only to enable to concatenate each person's data on all occasions. On the pretest questionnaire
they were asked for the date their Sabbatical begins and ends. On the first and the third
occasions, the questionnaire was sent to their University department, and during the respite it
was mailed to the participants home or Sabbatical address. Telephone calls were made to verify
that they got and completed the questionnaires. At each occasion the participants mailed the
completed questionnaire directly to the researcher at the University using reply-paid envelopes
To arouse interest and secure cooperation, we promised (and will deliver) a report on the major
findings to all participants, including information that could help them to maximize the benefit:
they might derive from their future Sabbaticals.

Analyses. Variables measured twice were subjected to repeated-measures analysis of
variance (ANOVA). Because these variables were measured before and during the respite, the
Respite X Occasion interaction tests the hypothesis that the respite and control groups differed
amount of pretest-to-posttest (T2) change. Following Rosenthal and Rubin (1982), we comput-
the correlation coefficient, $r$, to estimate effect size and the binomial effect size display (BESD) to estimate the success-rate equivalent of $r$ as an expression of the practical impact of the respite.

**Results**

**Perceived Stressors**

Table 1 presents the correlations between all perceived stress variables and shows that they were correlated within each occasion. The 3 correlations in the upper, left portion are simultaneous correlations at T1 and the 3 correlations in the lower, right portion are simultaneous correlations at T2. Test-retest reliability appears in boldface type.

**(Quasi) Manipulation check.** Table 2 shows comparison of Sabbatical and control mean on perceived stress indexes (job stressors and inclusive stress beyond the job domain) before and during the Sabbatical. Comparing across occasions shows highly similar levels of stress on pre-respite occasion. Thus our matching procedure created groups of highly similar individuals; Sabbaticals and their controls differed by only .05 (faculty stress), .21 (workload) and .06 (resources) scale point on means pretest stress. Repeated-measures ANOVA of perceived Faculty stress, Quantitative Workload and Resources revealed significant Occasion X Respite interactions which indicate that the two groups differed in the amount of change in stress over time. Simple-effects tests of the changes over time confirmed that perceived stress declined among the sabbaticals, $F(1, 165) = 199.41, p<.01$ (faculty stress), $F(1, 158) = 116.97, p<.01$ (workload) and $F(1, 165) = 192.5, p<.01$ (resources) and remained virtually unchanged in the comparison group, as predicted. After controlling tenure, the only demographic variable on which the groups deferred, the interactions Occasion X Respite remained significant (this is true also for all the dependent variables).

Following Rosenthal and Rubin (1982), we computed the correlation coefficient, $r$, to estimate effect size and the binomial effect size display (BESD) to estimate the success-rate equivalent of $r$ as an expression of the practical impact of the respite. The BESD equivalent of the effect sizes ($r = .49, .45$ and $.53$ of faculty stress, workload and resources, respectively) of the Occasion X Respite interactions is a ratio of $74.5\%$, $70\%$ and $76.5\%$ versus $25.5\%$, $30\%$ and $23.5\%$ among the controls, respectively. This is evidence that the Sabbatical provided a practically important respite from stress and validates the on/off-the-job dichotomy as a proxy for the presence or absence of job stressors.
Respite effects.

The impact of the respite from stress on burnout is evident in table 3. The overall burnout ratings declined from pre-respite to later among those who were on Sabbatical and increased among the controls. The significant Respite X Occasion effect indicates that the amount of before-during change in overall burnout in the two groups differed. The experimental improvement of 0.41 was significant, $F(1,163) = 32.97$, $p < .01$, as predicted, whereas the decline of 0.08 among the controls, which was not predicted, was not significant. The BESD equivalent of $r = .24$ is a ratio of 62% versus 38% among the controls, confirming the hypothesis that respite ameliorate burnout. The same pattern was found for Exhaustion, $F(1, 163) = 81.78$, $p < .01$ and $F(1, 146) = 0.33$, n.s., respectively. Repeated measures ANOVA of Cynicism detect a significant main effect of Occasion, $F(1, 308) = 17.38$, $p < .05$, and nearly significant effect Occasion X Respite interaction, $F(1, 308) = 2.99$, $p = .084$. Inspecting the next pair of rows in Table 3 reveals that by the second occasion Cynicism declined significantly in both groups, $F(1, 162) = 13.85$, $p < .01$ and $F(1, 146) = 4.42$, $p < .05$, respectively. However the decline was larger in the respite group (.38 versus .14), as hypothesized. Finally, Inspecting the last pair of rows in Table 3 reveals that, prior to the respite, the groups were virtually equal in mean professional self-efficacy. By the second occasion self-efficacy waxed in both, rendering the Occasion X Respite interaction not significant.

The significant Occasion X Respite effect on perceived control shows that control changed by different amounts among the Sabbatical and control groups. The means in Table 4 reveal a sizable improve in perceived control among those were on Sabbatical, as predicted, and a negligible decline among the controls, $F(1,165) = 41.11$, $p < .01$ and $F(1,146) =0.66$, n.s., respectively. The next two pair of rows in Table 4 shows that a similar patterns of changes in positive affect and life satisfaction were significant, $F(1,160) = 26.83$, $p < .01$ and $F(1,146) =1.59$, n.s., respectively (positive affect) ; $F(1,162) = 10.27$, $p < .01$ and $F(1,141) =2.83$, n.s., respectively (life satisfaction). Finally, repeated measures ANOVA detected no significant Occasion X Respite effect with regard to overall support or any of the specific support sources. Taken together, these results are evidence that respite promote psychological welfare in terms of high control, and cognitive and affective subjective well being.
Discussion

The prime hypothesis that was tested was the same hypothesis tested in previous respite research, namely, that stress causes strain. One difference between the present study and all preceding respite research is its broader scope and longer time span. The longest respite study to date was a few weeks of annual vacation or of compulsory military reserve service. The two-year time frame and the three measurements of the present study, together with the matched-pairs design, afforded a better test of the stress-strain-relief process as it unfolds over time.

The results confirm the hypotheses that perceived stress cause strain and that Sabbatical as a respite, has an ameliorative effect on stress and strain. Among those who were on respite, perceived stress and burnout declined and life satisfaction increased during the respite, whereas remained unchanged among the controls. This replicates previous respite researches findings. In addition, the respite increased sense of control and positive affect, psychological strains that have not previously studied using the respite design. The results of our study replicate the findings of Etzion et al. (1998) and Westman and Etzion (in press) showing that even a respite that is not purely a time of leisure has salutary impacts on well being, as vacations. Finally, the present replication of respite effects among university faculty members increases the variety types of employees among whom respites effects have been found, augmenting external validit

This study is different from other respite researches in that it tested, and confirmed, the above hypothesis using three different stress measures: one based on stressors that characterize the academy domain, the second based on role theory (Kahn et al., 1964), and the third based o Hobfoll's' (1989) conceptualization of stress. The faculty stress and the quantitative workload measures reflected perceived job stressors whereas the resources measure represented perceive inclusive stress beyond specific domain. Hence, not only those who were on respite experience less job stress but also felt less stressed in general. Moreover, although Westman & Eden (1993, Westman (1999) and Westman & Etzion (in press) have suggested to embed the respite researc within Hobfoll's (1989) COR theory and explained the respite effects they found in terms of it, they did not measure resources. The present study went beyond this. By measuring resources repeatedly, the results of the present study support the predictions derived from Hobfoll's theor regarding the psychological mechanisms through which respites contribute to well being. The results show that respite serves a mechanism that allows regrouping of resources such as sense control, life satisfaction and positive affect.
The literature reviewed in the academe domain appears to support the notion that facult occupational stress is related to strain. However, the research is characterized by a single-meth trap (Baily & Bhagat, 1987). The present study increased the confidence in the general directio of job stress-strain findings, and expanded their relevance to a relatively neglected population of workers that is found in virtually every society.

Finally, Sabbatical research has been very sparse. Most of it relates to the benefits of sabbatical to employees and to their organizations. Most of the research on sabbatical leave has been descriptive in nature. None of it has employed a repeated-measures design, and none compared the same individuals’ responses to stress and strain questionnaires before, during, and after sabbatical leave to detect patterns of change. Instead, research has been confined to the retrospective self-reports, which are the most fallible kind of data available. Using a rigorous design, our results clarify that Sabbatical have ameliorative effect on cognitive and affective subjective well being in terms of lower stress and burnout and higher sense of control, positive affect and life satisfaction.

References


Eden, D. (1996, August). From self-efficacy to means efficacy: Internal and external sources of general and specific efficacy. Presented at the 56th Annual Meeting of the Academy of Management (Organizational Behavior Division), Cincinnati, OH.


Table 1
Interrelations Between Stress Variables on two Occasions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Occasion</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<tbody>
<tr>
<td>Faculty stress</td>
<td>1</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantitative Workload</td>
<td>1</td>
<td>.56**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resources</td>
<td>1</td>
<td>-.32**</td>
<td>-.29**</td>
<td>-</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Faculty stress</td>
<td>2</td>
<td>.45**</td>
<td>.17**</td>
<td>-.17**</td>
<td>-</td>
<td></td>
<td></td>
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<tr>
<td>Quantitative Workload</td>
<td>2</td>
<td>.31**</td>
<td>.34**</td>
<td>-.14*</td>
<td>.65**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Resources</td>
<td>2</td>
<td>-.03</td>
<td>.03</td>
<td>.21**</td>
<td>-.54**</td>
<td>-.49**</td>
<td>-</td>
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</table>

* p < .05   ** p < .01
Table 2
Comparison of Means Perceived Stress Before and During Sabbatical between "Sabbatical" and "Controls"

<table>
<thead>
<tr>
<th>Variable</th>
<th>Occasion</th>
<th>Sabbatical</th>
<th>Control</th>
<th>F</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>1. Faculty stressors</td>
<td>Before</td>
<td>2.68</td>
<td>0.67</td>
<td>2.73</td>
</tr>
<tr>
<td></td>
<td>During</td>
<td>1.89</td>
<td>0.66</td>
<td>2.72</td>
</tr>
<tr>
<td>2. Quantitative Workload</td>
<td>Before</td>
<td>3.09</td>
<td>1.05</td>
<td>2.87</td>
</tr>
<tr>
<td></td>
<td>During</td>
<td>2.02</td>
<td>0.93</td>
<td>2.94</td>
</tr>
<tr>
<td>3. Resources a</td>
<td>Before</td>
<td>-0.05</td>
<td>0.72</td>
<td>-0.11</td>
</tr>
<tr>
<td></td>
<td>During</td>
<td>1.01</td>
<td>0.78</td>
<td>-0.14</td>
</tr>
</tbody>
</table>

Note. The F coefficient shown tests the Occasion X Respite interaction to detect a significant difference between the groups in the rate of Time 1- Time 2 change.

a High scores on Resources are indicative of low stress.

* p < .01
Table 3  
Comparison of Sabbatical and Control Means on Burnout Before and During Sabbatical

<table>
<thead>
<tr>
<th>Variable</th>
<th>Occasion</th>
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<th></th>
<th></th>
<th></th>
<th>F</th>
<th>r</th>
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<tr>
<td></td>
<td></td>
<td>Sabbatical</td>
<td>Control</td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
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<tr>
<td>Overall Burnout</td>
<td>Before</td>
<td>1.94</td>
<td>0.95</td>
<td>1.81</td>
<td>0.88</td>
<td>18.67**</td>
<td>0.24</td>
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<tr>
<td></td>
<td>During</td>
<td>1.53</td>
<td>0.84</td>
<td>1.89</td>
<td>0.90</td>
<td></td>
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</tr>
<tr>
<td>Exhaustion</td>
<td>Before</td>
<td>2.30</td>
<td>1.50</td>
<td>1.99</td>
<td>1.47</td>
<td>53.85**</td>
<td>0.38</td>
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<tr>
<td></td>
<td>During</td>
<td>1.22</td>
<td>1.20</td>
<td>2.04</td>
<td>1.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cynicism</td>
<td>Before</td>
<td>1.57</td>
<td>1.37</td>
<td>1.41</td>
<td>1.13</td>
<td>2.99*</td>
<td>0.10</td>
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<tr>
<td></td>
<td>During</td>
<td>1.19</td>
<td>1.15</td>
<td>1.27</td>
<td>1.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Reduced)</td>
<td>Before</td>
<td>1.98</td>
<td>1.23</td>
<td>1.99</td>
<td>1.09</td>
<td></td>
<td></td>
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<tr>
<td>Professional Efficacy</td>
<td>During</td>
<td>2.11</td>
<td>1.24</td>
<td>2.07</td>
<td>1.19</td>
<td></td>
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</tr>
</tbody>
</table>

Note. The F coefficient shown tests the Occasion X Respite interaction to detect a significant difference between the groups in the rate of Time 1- Time 2 change.

* p < .08   ** p < .01
Table 4
Comparison of Sabbatical and Control Means on Variables Measured Before and During Sabbatical

<table>
<thead>
<tr>
<th>Variable</th>
<th>Occasion</th>
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<th></th>
<th></th>
<th></th>
<th>F</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sense of Control</td>
<td>Before</td>
<td>3.23</td>
<td>0.87</td>
<td>3.24</td>
<td>0.94</td>
<td>30.62**</td>
<td>0.30</td>
</tr>
<tr>
<td></td>
<td>During</td>
<td>3.75</td>
<td>0.89</td>
<td>3.20</td>
<td>0.92</td>
<td></td>
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</tr>
<tr>
<td>Positive Affect</td>
<td>Before</td>
<td>3.27</td>
<td>0.81</td>
<td>3.30</td>
<td>0.68</td>
<td>20.35**</td>
<td>0.25</td>
</tr>
<tr>
<td></td>
<td>During</td>
<td>3.60</td>
<td>0.87</td>
<td>3.22</td>
<td>0.80</td>
<td></td>
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</tr>
<tr>
<td>Life Satisfaction</td>
<td>Before</td>
<td>3.71</td>
<td>0.74</td>
<td>3.59</td>
<td>0.84</td>
<td>11.81**</td>
<td>0.19</td>
</tr>
<tr>
<td></td>
<td>During</td>
<td>3.83</td>
<td>0.72</td>
<td>3.53</td>
<td>0.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Support</td>
<td>Before</td>
<td>3.18</td>
<td>0.79</td>
<td>3.09</td>
<td>0.76</td>
<td>0.36</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>During</td>
<td>3.20</td>
<td>0.84</td>
<td>3.10</td>
<td>0.78</td>
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<td></td>
</tr>
</tbody>
</table>

Note. The F coefficient shown tests the Occasion X Respite interaction to detect a significant difference between the groups in the rate of Time 1- Time 2 change.

* p < .05  ** p < .01