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Flight Attendants' Daily Recovery From Work: Is There No Place Like Home?

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This article builds on earlier work on recovery from work during off-job time and specifically addresses recovery in flight attendants, a group of employees whose work is characterized by a high degree of emotion work demands. Forty-seven flight attendants completed daily surveys on a total of 4 evenings when they stayed at home or when they stayed in a hotel. Multilevel analysis showed staying in a hotel did not impair well-being at bedtime. Spending time on work-related activities during off-job time decreased well-being, whereas spending time on physical activities (i.e., sports) and experiencing off-job time activities as recovery improved well-being, also when initial well-being immediately after work was controlled. Time spent on social activities increased depression during the evening. As a whole, this study largely confirms findings from previous research with other professional groups.

KEY WORDS: recovery; leisure; emotion; work; stress

Work in service jobs is particularly demanding. The specific demands in service jobs include what scholars have called "emotional labor" (Morris & Feldman, 1996) or "emotion work" (Zapf, Vogt, Seifert, Mertini, & Isic, 1999). Morris and Feldman defined emotional labor as the "effort, planning, and control needed to express organizational desired emotion during interpersonal transactions" (p. 987). Typical jobs that are characterized by a high degree of emotion work include those of kindergarten teachers, call-center employees, or front-desk employees. This article reports a study with flight attendants—a group of employees who face particularly high emotion work demands (Hochschild, 1983).

A high degree of emotion work, particularly a high level of emotional

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dissonance, has been found to be related to poor well-being in service workers, in general (Brotheridge & Grandy, 2002; Dormann & Kaiser, 2002; Zapf et al., 1999), and in flight attendants, in particular (Heuven & Bakker, 2003). From both a theoretical and practical point of view, it is important to find out how service workers, such as flight attendants, can sustain the demands of their jobs and how they can maintain their well-being over longer periods of time.

For a decade or so, researchers have increasingly argued that recovery from work and respite experiences are important to protect workers' health and well-being in the long run (Sonnentag, 2001; Westman & Eden, 1997; for reviews, see Eden, 2001a, 2001b). Thus, off-job time experiences and leisure activities that offer the opportunity to recover from job stress and to restore one's resources seem to be essential for maintaining one's well-being.

When it comes to opportunities for recovery from job stress, the situation of flight attendants is particularly problematic. On the one hand, flight attendants' jobs are highly demanding both with respect to the requirements associated with emotion work and to high physical demands, including the necessity to quickly adapt to different time zones. Thus, recovery is particularly important for this group of employees. On the other hand, opportunities to recover may not be optimal for flight attendants because it is difficult for them to maintain a regular private life (Wouters, 1989). Often, flight attendants spend their off-job time far away from their homes. This situation implies that they have to recover in an environment that may not be optimal for recovery, for example, because it does not provide sufficient resources and because the situation is less controllable than the situation at one's home.

In this article, we address this potentially problematic situation. We were particularly interested in how flight attendants experience their off-job time and how they recover from work on a day-to-day basis. We pursued three specific goals. First, we explored how off-job time spent far away from home differs from off-job time spent in one's home town. Second, we examined whether the effects of specific off-job time activities found in earlier research generalize to flight attendants, that is, to a group of employees who spend a substantial part of their leisure time far away from home. Third, we investigated whether the subjective experience of recovery is important for benefiting from off-job time.

THE RECOVERY CONCEPT

Spending effort and responding to work demands draws upon an individual's resources and causes strain reactions in the individual. These

strain reactions include both impaired well-being and performance-related aspects (Repetti, 1993; Totterdell, Spelten, Smith, Barton, & Folkard, 1995; Zohar, 1999). To protect one's well-being and performance in the long run, recovery is necessary (Meijman & Mulder, 1998).

Recovery refers to the process during which an individual's functioning returns to its pre-stressor level and in which strain is reduced (Craig & Cooper, 1992; Meijman & Mulder, 1998). Thus, recovery can be regarded as a process opposite to the strain process. This implies that recovery is a process during which the detrimental effects of stressful situations are eliminated—or at least alleviated. Recovery occurs when no further demands are put on those aspects of an individual's functioning on which demands have been put during the work process (Meijman & Mulder, 1998). If recovery is successful, an individual's well-being improves, and resources drawn upon during the strain process are restored. Thus, successful recovery after work is an important prerequisite for not feeling strained and for performing well when returning to work the next day. If recovery is not successful, well-being will be affected and the individual starts the next working day in a suboptimal state.

There is increasing empirical evidence that recovery is important to maintain well-being in the long run. For example, individuals who do not feel sufficiently recovered report more health complaints and higher levels of burnout (Elfering, Grebner, Semmer, & Gerber, 2002; Jansen, Kant, & van den Brandt, 2002; Sluiter, Van der Beek, & Frings-Dresen, 1999). Moreover, insufficient recovery has been found to be related to sickness absence 2 years later (De Croon, Sluiter, & Frings-Dresen, 2003).

PREREQUISITES OF RECOVERY PROCESSES

The effort-recovery model (ERM; Meijman & Mulder, 1998) and the conservation of resources theory (COR; Hobfoll, 1998) offer complementary theoretical perspectives on recovery from job stress. The ERM focuses on job demands and associated effort expenditure. More specifically, the model maintains that individuals must spend effort in order to respond to work demands and to accomplish their tasks. Effort expenditure leads to load reactions in the individual, including physiological, behavioral, and subjective responses. When job demands cease to impact on the individual and when no further effort expenditure is needed, load reactions are reduced and recovery occurs. In the optimal case, the psychobiological systems return to their predemand level. However, when demands continue to impact the individual, load reactions persist and no recovery occurs. If individuals face such situations over a longer period of time, load reactions accumulate and may result in negative outcomes, such as poor well-being

and health problems. Thus, ERM suggests that the core mechanism through which recovery occurs is the temporary relief from demands put on the individual.

COR theory offers a rather general model on stress, health, and well-being. COR theory has been successfully applied to the issue of recovery (Westman & Eden, 1997). A key concept within this theory is that of resources, that is, "objects, personal characteristics, and energies that are either themselves valued for survival, directly or indirectly, or that serve as a means of achieving these resources" (Hobfoll, 1998, p. 45). It is assumed that individuals strive to obtain, retain, and protect their resources. If an individual's resources are threatened or lost, or when no resources are gained after resources have been invested, stress will occur and well-being will suffer.

Applied to the context of work and recovery, COR theory suggests that resources are threatened or even lost when demands are imposed on the individual during stressful work. To maintain well-being in the long run, these resources must be restored. Similar to the processes suggested by ERM, COR argues that resources can be restored by not taxing the threatened resources further, for example, by taking a break. In addition to the suggestions of ERM, COR proposes that resources can be restored by investing other resources. Thus, whereas according to ERM, recovery occurs when demands cease to impact the individual (in terms of COR theory, when resources previously needed are no longer called upon), COR additionally suggests that recovery occurs when resources are regained by drawing on other resources.

Location, Off-Job Time Activities, and Subjective Experience as Predictors of Recovery

The location where the individual spends his or her off-job time, the activities in which he or she engages, and the subjective experience of these activities are important predictors of recovery.

Location

In traditional work settings, where individuals spend most of their weekly working time in one single factory or in one single office building, individuals usually stay at home or other places in their home towns after leaving work in the evening. Thus, their home and other places in their home town are the core locations where they spend their off-job time during the work week. The situation is very different for flight attendants

and other groups of employees who work at frequently changing work places. Flight attendants usually do not spend all their off-job time at home or in their home town. Dependent on flight routes and schedules, flight attendants may spend a substantial part of their off-job time far away from home, usually in a hotel in another city, often abroad or even on a different continent.

It can be argued that the location where one spends one's off-job time plays an important role in the recovery process of flight attendants. On the basis of ERM and COR theory, one can argue that spending off-job time far away from home is beneficial for recovery because many typical off-job demands to be met when being at home are not present when staying in a hotel. Particularly, the demands associated with household and child-care responsibilities are missing. However, when staying in a hotel in a foreign country, additional demands are present because simple every-day activities may require more effort, such as getting access to goods and services. In addition, according to COR theory, one can assume that recovery is more difficult when being away from home because one lacks resources that might help in regaining other resources, for example, social support provided by one's partner, other family members, and close friends. In addition, one lacks other resources that might support recovery processes such as one's favorite books or a musical instrument. Therefore, when being away from home, there are fewer resources available to help a person regain resources threatened during the day at work.

A recent empirical study on short, overseas business travel showed that stress and burnout of traveling employees decreased during the trip (Westman & Etzion, 2002). It has to be noted that employees in the Westman and Etzion study could use the trip as a respite experience "that is different from one's daily work in an environment that is detached from one's workplace" (p. 589). For flight attendants, however, staying in a hotel is a routine experience and may be closely linked to their workplace. Therefore, detachment from jobs may be difficult when staying in a hotel, and respite effects may be reduced. Thus, we assume that staying in a hotel during off-job time has a negative effect on well-being at bedtime and that staying at home and spending off-job time in one's home town has a positive effect on well-being.

Hypothesis 1: Spending off-job time far away from home has a negative effect on well-being.

Off-Job Time Activities

Off-job time activities play a crucial role for recovery. It is important to note, however, that not all off-job time must be equated with pure leisure time. First, individuals spend a substantial portion of their time off

the job on personal maintenance activities such as sleeping, eating, and personal hygiene. Second, also during off-job time, individuals face demands with a high-duty profile. These demands refer to household tasks but sometimes also to job-related or other work-related tasks. Thus, when examining the effects of off-job time activities, it is important to differentiate between activities with a high-duty profile and activities without a high-duty profile. Activities with a high-duty profile include (a) job-related activities and other task-related activities that refer to one's private life, such as paying bills or completing one's tax declaration and (b) household and child-care activities (Sonnentag, 2001). Many activities with a high-duty profile are not mandatory and may be skipped or postponed only within relatively narrow margins. Activities without a high-duty profile correspond to more typical leisure time activities, are less obligatory in nature, and potentially aid recovery. Major categories of this kind of activity comprise (a) low-effort activities, (b) social activities, and (c) physical activities (Sonnentag, 2001).

Work-related activities. Job-related and other task-related activities are work-related activities. These activities are characterized by a high degree of obligation. Moreover, they draw heavily upon resources, often upon resources similar to those already called upon during working time. According to the ERM and COR theories, recovery occurs when no further demands are put on resources required during working time. Therefore, when a person continues to draw on already challenged and threatened resources during the evening, no recovery occurs. As a consequence, well-being will not improve or will even further deteriorate during off-job time. Thus, we assume that spending time on job-related and other task-related activities during off-job time is negatively related to well-being at the end of the evening.

> *Hypothesis 2:* Time spent on work-related activities during off-job time has a negative effect on well-being.

Household and child-care activities. Similar to job-related and other task-related activities, most household and child-care activities are obligatory in nature. In addition, these activities are demanding, draw upon one's resources, and cause fatigue in the individual (Grandey & Cropanzano, 1999; Mardberg, Lundberg, & Frankenhaeuser, 1991).

The obligatory nature implies that individuals also must address these tasks when fatigued after a stressful working day. Thus, when facing household and child-care responsibilities after work, recovery must be postponed. Moreover, because household and child-care activities are demanding, they increase an individual's need for recovery, at the same time reducing the time available for recovery.

Hypothesis 3: Time spent on household activities during off-job time has a negative effect on well-being.

Low-effort activities. With low-effort activities, we refer to activities that, by definition, do not require much effort and are not very demanding. Typical low-effort activities include relatively passive activities, such as watching TV, browsing through a magazine, or just relaxing on one's sofa (Kleiber, Larson, & Csikszentmihalyi, 1986). In addition, there is no obligation to perform these activities. From both the ERM and the COR theories, low-effort activities are beneficial for recovery because these activities impose no major demands on the individual and do not draw upon resources. Rather, low-effort activities allow for the restoration of previously taxed resources and recovery. In teachers, time spent on low-effort activities was a positive predictor of well-being at bedtime (Sonnentag, 2001).

Hypothesis 4: Time spent on low-effort activities during off-job time has a positive effect on well-being.

Physical activities. Physical activities refer to a broad range of activities such as exercise, sports, cycling, and walking. Physical activities draw on resources different from those required in most jobs. Even for a physically demanding job, such as that of flight attendants, exercise and sports may involve functional systems other than those taxed during work. Because physical activities during off-job time are not obligatory, one can assume that individuals will regulate the amount and intensity of these activities in a way that may match available resources.

Moreover, many physical activities imply cognitive distraction from job-related demands (Yeung, 1996) or stimulate physiological and psychological processes that are beneficial to individuals' health and well-being (Brown, 1990; Byrne & Byrne, 1993; Wankel & Berger, 1990). In day-level studies, on days when individuals spend more time on physical activities, they report higher well-being at bedtime (Sonnentag, 2001; Sonnentag & Bayer, 2003).

Hypothesis 5: Time spent on physical activities during off-job time has a positive effect on well-being.

Social activities. Also, activities such as going to a party, dining out with others, or phoning other persons in order to chat would be subsumed under this category. Social activities are potentially successful recovery activities because they offer the opportunity for social support. Social support is one particularly important resource that helps in restoring lost or threatened resources (Hobfoll, 1998). Empirical research has shown that social support is positively related to well-being (Viswesvaran, Sanchez, & Fisher, 1999) and that individuals who spent their leisure time together

with others are better off in terms of well-being (Hills & Argyle, 1998; Iso-Ahola & Park, 1996), even in jobs that are characterized by high emotion work demands (Sonnentag, 2001).

Hypothesis 6: Time spent on social activities during off-job time has a positive effect on well-being.

RECOVERY EXPERIENCE

Studies have shown that in addition to specific off-job time activities, the way a person experiences his or her off-job time also plays a role in predicting well-being. For example, research has shown that individuals who psychologically detach from their work during off-job time report higher well-being at bedtime than individuals who continue to think about their job when being at home (Sonnentag & Bayer, 2003). Similarly, Sonnentag and Zijlstra (2003) reported that health care employees experienced higher well-being at bedtime when they felt that their off-job time was a positive experience.

However, to conclude that protection of well-being through off-job time activities is due to the recovering effect of these activities, it is necessary to directly examine the recovery experience provided by these activities. *Recovery experience* refers to an individual's *perception* that the activity he or she pursues helps in restoring his or her resources. Thus, it is not just the type of an activity per se and the time devoted to it that make recovery happen; *experiencing* an activity as recovery seems to be important. For example, experiencing the evening in front of the TV set as recovering will have a positive effect on well-being, whereas experiencing the TV program as boring will impair well-being.

Although to our knowledge this issue has not been addressed, there is some indirect evidence from research on *need for recovery*—the desire to be relieved of demands—that the subjective experience of an activity as recovering is important for individual well-being. Individuals who experience a high need for recovery suffer from poor well-being (Elfering et al., 2002; Jansen et al., 2002; Sluiter et al., 1999). Moreover, need for recovery longitudinally predicts sickness absence (De Croon et al., 2003).

Hypothesis 7: Experiencing off-job time as recovering has a positive effect on well-being.

PRESENT STUDY

We conducted our study with a sample of flight attendants who spent some of their evenings at home and some of their evenings in a hotel. To

avoid problems associated with retrospective reports, we asked our study participants to complete a daily survey on 4 working days. Well-being measures at bedtime on the 4 working days were our core outcome variables. Because well-being at bedtime may be affected not only by location, off-job time activities, and experiences, we controlled for other relevant stress variables, including demographic variables of gender, age, and the number of children; well-being immediately after work; and changes of time zone.

Method

Sample

A total of 47 flight attendants participated in this study. The majority were employed by a German airline ($N = 35$); the remaining participants were employed by other airlines in Germany, Austria, and Switzerland.

The majority of the study participants were female (61.7%). The mean age of study participants was 29.9 years ($SD = 5.5$), ranging from 19 to 44 years. On average, participants had worked 5.0 years ($SD = 5.0$) as flight attendants. Tenure with the present organization was 4.6 years ($SD = 4.7$). Mean time worked per week was 32.2 hr ($SD = 8.3$).

Most study participants (85.1%) had no children, 4 participants (8.5%) had one child, 2 participants (4.3%) had two children, and 1 participant (2.1%) had three or more children. Among all participants, 38.1% lived alone, and 48.9% lived with a partner. A total of 6 participants (12.7%) lived as a single parent or with a person other than a partner or child.

Measures

We collected our data with a questionnaire and a daily survey method. Participants had to fill in the questionnaire before starting to complete the daily survey. The daily survey covered a period of 4 working days. Participants were asked to complete the daily surveys on 2 evenings at home (i.e., when spending their off-job time in their home town, as opposed to another city) and on 2 evenings when staying in a hotel. On each day when completing the daily survey material, participants had to answer items on two measurement occasions: (a) when returning home or arriving at the hotel from work and (b) before going to bed. All items were in German.

Location. We assessed location in the daily survey at the second measurement occasion. Specifically, we used a one-item measure that asked directly whether participants were staying in a hotel or at home.

Off-job time activities. We assessed the amount of time spent on off-job time activities in the daily survey at the second measurement occasion before participants went to bed. We provided participants short descriptions of five activity categories and a list of prototypical activities within each category. The five activity categories were (a) *work-related activities* (e.g., finishing or preparing for work duties and doing one's private administration); (b) *household and child-care activities* (e.g., washing clothes, ironing, cooking, shopping, taking care of the children); (c) *low-effort activities* (e.g., watching TV, doing nothing, taking a bath); (d) *physical activities (*e.g., sports, cycling, workout); (e) *social activities* (e.g., meeting with others, going out for dinner, making a phone call in order to chat). For each of these activity categories, participants first had to report whether they had performed any activity within that category on the specific day. If they indicated that they had performed any activity within the respective category, they were asked to report the total amount of time they had spent on these activities. If they indicated that they did not perform any activity within the respective category, they were asked to proceed to the items referring to the next activity category.

Recovery experience. We assessed recovery experience associated with each activity performed on the specific day. In more detail, we proceeded as follows: After participants had reported how much time they had spent on activities within a category, they were asked to respond to four recovery experience items on a 5-point Likert scale ranging from 1 = *not true at all* to 5 = *very true*. A sample item was, "I felt more recovered after having performed these activities."

We computed Cronbach's alphas of this recovery-experience measure separately for each of the five activity categories and for each of the 4 evenings. For work-related activities, Cronbach's alphas ranged between .69 and .86. For household activities, Cronbach's alphas ranged between .71 and .82. For low-effort activities, Cronbach's alphas ranged between .84 and .90. For social activities, Cronbach's alphas ranged between .78 and .92. For physical activities, Cronbach's alphas ranged between .78 and .86.

For all further analyses, we computed a mean recovery experience score for each of the 4 evenings. Specifically, we averaged the recovery experience scores associated with each of the activities the participants had performed on a specific day. This procedure resulted in one recovery experience score for each participant per evening. Because it was a very rare exception that participants performed all five activities on a single evening, we could not compute the usual Cronbach's alpha coefficient for this mean recovery experience score. To gain some information about the consistency of recovery experience ratings across activities, we correlated the ratings provided separately for the five activities with this mean recovery experience score. The correlation between the experienced recovery ratings pro-

vided for work-related activities and the mean recovery experience score computed separately for each of the 4 evenings ranged between .47 and .70. For household activities, this correlation ranged between .55 and .75; for low-effort activities, this correlation ranged between .78 and .84. For physical activities, this correlation ranged between .77 and .86; and for social activities, it ranged between .71 and .92. Overall, these correlations correspond to acceptable item-total correlations.

Well-being at bedtime. We assessed well-being at bedtime in the daily survey at the second measurement occasion immediately before participants went to bed. On each of the 4 evenings, participants were asked to provide ratings of vigor, depression, and fatigue. We measured these well-being aspects with the Profile of Mood States (McNair, Lorr, & Droppelman, 1971). Specifically, participants responded to four items assessing vigor (e.g., "vigorous"), to three items assessing depression (e.g., "sad"), and to four items assessing fatigue (e.g., "exhausted") with respect to how they felt "now, at this moment before going to bed." Participants provided their responses on 7-point Likert scales ranging from 1 = *not at all* to 7 = *very much*. Cronbach's alpha computed separately for the 4 evenings ranged between .88 and .95 for vigor, between .74 and .90 for depression, and between .87 and .94 for fatigue.

To examine the factor structure of these well-being measures, we conducted exploratory factor analyses with varimax rotation, separately for all 4 days of data collection. For all 4 days, a three-factor solution resulted with all four vigor items loading on the vigor factor, all three depression items loading on the depression factor, and all four fatigue items loading on the fatigue factor.

Well-being after work. We assessed well-being directly after work in the daily survey at the first measurement occasion, when participants returned home from work or arrived at the hotel, respectively. Participants were asked to report how they felt "now, after having finished work." We assessed vigor, depression, and fatigue with items identical to the items used to measure well-being at bedtime. Cronbach's alphas computed separately for the 4 days of data collection ranged between .63 and .93 for depression, between .90 and .97 for vigor, and between .87 and .93 for fatigue. Again, for all 4 days of data collection, we performed exploratory factor analyses with varimax rotation. These analyses resulted in three-factor solutions with all items loading on their respective factors.

Control variables. We assessed participants' gender, age, and number of children with single items in the questionnaire. We measured change of time zone in the daily survey. Specifically, we asked participants to report the country where they had gotten up in the morning and to report in which country they were staying at the moment. On the basis of this information, we rated whether a change in time zone had occurred. Minimal changes of

time zone within Europe (i.e., the time zone difference of 1 hr from continental Europe to Great Britain) were not coded as a change in time zone. Thus, the changes in time zone occurred after flights from Europe to North America (and vice versa) and from Europe to East Asia (and vice versa).

Results

Means, standard deviations, and zero-order correlations between all study variables are shown in Tables 1 and 2.

Data Analyses Procedures

We tested our hypotheses with a hierarchical linear modeling approach (Bryk & Raudenbush, 1992; Snijders & Bosker, 1999). We chose this approach because our data contained data at two levels, that is, at the person level (e.g., demographic data) and the data level (e.g., location, off-job time activities), and because the day-level data were nested within the person-level data. We decided to use hierarchical linear modeling because this approach does not require independence of observations but allows for dependent observations nested within the higher level data structure.

We analyzed the data with the MLn program (Rasbash & Woodhouse, 1996). We centered day-level predictor variables around the respective person mean because our main focus was on within-person effects. We tested our hypotheses with a hierarchical test procedure and compared a set of nested models.

Descriptive Results

First, we analyzed whether off-job time activities, recovery experience, and well-being differed between evenings spent at home and evenings spent in a hotel. Specifically, both for evenings spent at home and for evenings spent in a hotel, we computed the mean time used for the specific off-job activities and averaged the recovery experience ratings and well-being scores. Because some of the participants completed all daily surveys only at home or only in a hotel, the sample size was reduced to 40–41 participants.

Table 3 shows the results from paired *t* tests. Analysis revealed that the two locations (home vs. hotel) differed with respect to the activities pur-

Table 1. Means, Standard Deviations, and Zero-Order Correlations at the Person Level

Study variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Gender	1.62	0.49	—													
2. Age	29.06	5.55	.09	—												
3. Number of children	0.23	0.63	.09	.60	—											
4. Time spent on work-related activities	15.24	17.72	.02	−.22	−.26	—										
5. Time spent on household activities	23.98	20.61	.25	.43	.46	.22	—									
6. Time spent on low-effort activities	99.27	66.06	−.31	−.09	.16	.08	.28	—								
7. Time spent on physical activities	13.89	33.26	−.11	−.12	−.10	−.01	−.23	.15	—							
8. Time spent on social activities	84.26	63.11	−.23	.05	.43	−.20	.19	.47	.20	—						
9. Recovery experience	3.50	0.57	−.10	−.12	.08	−.28	−.07	.08	.23	.37	—					
10. Vigor after work	3.30	1.07	−.06	−.03	.15	.10	.01	.18	.43	.21	.40	—				
11. Depression after work	1.56	0.70	−.07	.01	.04	−.08	−.04	−.32	.08	−.01	−.10	−.15	—			
12. Fatigue after work	3.58	1.07	−.04	.32	.10	−.15	.16	−.12	−.14	.05	−.34	−.61	.46	—		
13. Vigor at bedtime	2.60	1.09	−.12	.03	−.05	.13	.03	.05	.41	.08	.37	.81	.02	−.49	—	
14. Depression at bedtime	1.30	0.46	−.11	−.12	−.19	.22	−.23	−.11	.14	−.17	−.38	−.17	.59	.28	−.13	—
15. Fatigue at bedtime	3.77	1.32	−.06	.08	−.04	.12	.00	.05	−.09	−.16	−.55	−.46	.07	.67	−.62	.35

Note. $N = 47$. Correlations ≥.29 are significant at $p < .05$. Correlations ≥.37 are significant at $p < .01$.

Table 2. Zero-Order Correlations at the Day Level

Study variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Change of time zone	—												
2. Location	.14	—											
3. Time spent on work-related activities	−.07	−.31	—										
4. Time spent on household activities	.04	−.40	.18	—									
5. Time spent on low-effort activities	−.04	−.02	.01	.17	—								
6. Time spent on physical activities	−.07	.06	.12	−.01	.24	—							
7. Time spent on social activities	−.03	.34	−.21	−.08	.11	.19	—						
8. Recovery experience	−.14	.25	−.16	−.15	−.03	.20	.41	—					
9. Vigor after work	−.19	.07	.06	.00	.12	.33	.28	.38	—				
10. Depression after work	−.08	.12	−.06	−.03	−.22	.05	−.02	−.04	−.12	—			
11. Fatigue after work	.29	.04	−.02	.07	−.06	−.12	−.11	−.25	−.62	.40	—		
12. Vigor at bedtime	−.18	.04	.09	.01	.07	.36	.09	.36	.65	−.04	−.40	—	
13. Depression at bedtime	−.06	−.06	.15	−.08	−.06	−.05	−.04	−.32	−.12	.54	.23	−.20	—
14. Fatigue at bedtime	.36	−.01	.10	.01	.03	−.11	−.14	−.44	−.47	.13	.66	−.63	.30

Note. $N = 145$. Location: 1 = at home, 2 = at hotel. Change of time zone: 1 = no change, 2 = change. Correlations ≥.16 are significant at $p < .05$. Correlations ≥.22 are significant at $p < .01$.

Table 3. Off-Job Time Activities, Recovery Experience, and Well-Being When at Home or in a Hotel

Study Variables	At Home		At Hotel		
	M	*SD*	*M*	*SD*	*t*
Time spent on work-related activities	19.51	22.96	4.63	12.01	4.056***
Time spent on household activities	39.74	35.87	8.60	29.49	4.133***
Time spent on low-effort activities	101.50	69.68	85.38	79.39	1.104
Time spent on physical activities	14.56	28.74	7.25	21.81	1.187
Time spent on social activities	56.34	64.99	116.52	92.82	–3.490**
Recovery experience	3.35	0.55	3.62	0.80	–2.055*
Vigor at end of work	3.26	1.15	3.32	1.05	–0.359
Depression at end of work	1.56	0.75	1.64	0.83	–0.648
Fatigue at end of work	3.79	1.44	3.59	1.31	0.831
Vigor at bedtime	2.64	1.13	2.55	1.28	0.411
Depression at bedtime	1.31	0.57	1.27	0.42	0.563
Fatigue at bedtime	3.76	1.42	3.79	1.60	–0.121

Note. $N = 40–41$.
*$p < .05$. **$p < .01$. ***$p < .001$.

sued. Flight attendants spent significantly more time on work-related and household activities when being at home than when staying in a hotel. For social activities, an opposite picture emerged: Flight attendants spent about twice as much time on social activities when staying in a hotel than when staying at home. Moreover, recovery experience was higher when being at a hotel than when staying at home. It is interesting to note that there were no mean differences in well-being between the two locations, neither immediately after work when returning home or coming to the hotel nor later in the evening before going to sleep.

Test of hypotheses. In Hypothesis 1, we assumed that spending off-job time far away from home would have a negative effect on well-being. In Hypotheses 2–6, we predicted that spending time on work-related activities and household and child-care activities would have a negative effect, and spending time on low-effort physical and social activities would have a positive effect on well-being. Hypothesis 7 stated that recovery experience would have a positive effect on well-being.

Vigor, depression, and fatigue at bedtime were the dependent variables in these analyses. For each of these three dependent variables, we compared four nested multilevel models, a null model, Model 1, Model 2, and Model 3. In the null model, the intercept was the only predictor. In Model 1, we included demographic variables (gender, age, number of children; Level 2), well-being after work (Level 1), and change of time zone (Level 1) as control variables. With respect to well-being after work, we entered the after-work score of the respective dependent variable. For example, to predict depression at bedtime, we entered depression after work as the control variable; to predict fatigue, we entered fatigue after

work as the control variable. In Model 2, we entered location (i.e., hotel vs. home, Level 1). Finally, we entered time spent on the five off-job activities (Level 1) and recovery experience (Level 1) in Model 3. A significant improvement of Model 2 over Model 1 would indicate support for Hypothesis 1; a significant improvement of Model 3 over Model 2 would provide support for Hypotheses 2–7, respectively. We tested the improvement of each model above the previous one by computing the difference between the two respective likelihood ratios. This difference follows a chi-square distribution with the degrees of freedom equaling the number of new parameters added to the model.

Table 4 summarizes the findings for vigor as the dependent variable. Model 1, which included demographic variables, vigor after work, and change of time zone, showed a better model fit than the null model (difference of $-2 * \log = 17.188$, $df = 5$, $p < .01$). It is not surprising that vigor after work was a highly significant predictor of vigor at bedtime. The effect of time zone was marginally significant. When having changed into a different time zone, participants reported less vigor at bedtime, compared with days when participants stayed in the same time zone. Model 2, in which we entered location, showed no significant improvement over Model 1 (difference of $-2 * \log = 0.183$, $df = 1$, *ns*), indicating that location had no effect on vigor. In Model 3, we entered off-job activities and recovery experience as additional predictors. These variables were, in addition to location, the core predictor variables of interest. Model 3 showed a significant improvement over Model 2 (difference of $-2 * \log = 14.454$, $df = 6$, $p < .05$). Specifically, time spent on physical activities and recovery experience were significant predictors of vigor at bedtime. The effect of time spent on work-related activities was marginally significant. Thus, when spending little time on work-related activities, when pursuing physical activities, and when experiencing the off-job time activities as recovering, flight attendants still felt vigorous late in the evening. Thus, analysis with vigor as the outcome variable supported Hypotheses 5 and 7. With respect to Hypothesis 2, data were in the expected direction but failed to reach significance at the .05 level.

Table 5 displays the results for depression as the dependent variable. Again, Model 1, which included demographic variables, depression after work, and change of time zone, fitted the data better than the null model (difference of $-2 * \log = 37.237$, $df = 5$, $p < .001$). Depression after work was a highly significant predictor of depression at bedtime. In addition, the estimate of change of time zone was significant, indicating that after flights in a different time zone, depression at bedtime increased—also after having controlled for initial depression.

Location entered in Model 2 did not result in a better model fit (difference of $-2 * \log = 1.192$, $df = 1$, *ns*). In Model 3, we entered time spent

Table 4. Multilevel Estimates for Models Predicting Vigor From Control Variables, Location, Off-Job Time Activities, and Recovery Experience

	Null model			Model 1			Model 2			Model 3		
Study variable	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Intercept	2.6680	0.1749	15.25	3.387	0.5964	5.679	3.4210	0.6036	5.668	3.4020	0.5904	5.767
Gender				−0.4124	0.3502	−1.178	−0.4138	0.3513	−1.178	−0.3776	0.3429	−1.101
Age				0.0442	0.0397	1.114	0.0444	0.0398	1.116	0.0460	0.0389	1.184
Number of children				−0.3026	0.3359	−0.901	−0.3034	0.3370	−0.900	−0.3051	0.3293	−0.927
Vigor after work				0.3332	0.0893	3.733***	0.3345	0.0891	3.755***	0.2129	0.0933	2.282*
Change of time zone				−0.8189	0.4844	−1.691	−0.8246	0.4844	−1.702	−0.7575	0.4670	−1.622
Location							−0.0683	0.1582	−0.431	−0.1883	0.1854	−1.016
Time spent on work-related activities										−0.0063	0.0033	−1.899†
Time spent on household activities										−.0015	0.0023	−0.652
Time spent on low-effort activities										0.0012	0.0012	0.953
Time spent on physical activities										0.0068	0.0031	2.188*
Time spent on social activities										−0.0002	0.0011	−0.173
Recovery experience										0.3698	0.1569	2.357*
−2*log (lh)	466.228			449.040			448.857			434.403		
Diff−2*log				17.188**			0.183			14.454*		
df				5			1			6		
Day level intercept variance (*SE*)	0.8805 (0.1257)			0.7694 (0.1097)			0.7655 (0.1091)			0.6765 (0.0965)		
Person level intercept variance (*SE*)	1.1200 (0.2973)			1.0440 (0.2740)			1.0540 (0.2760)			1.0220 (0.2626)		

Note. Diff = difference; log (lh) = likelihood ratio.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 5. Multilevel Estimates for Models Predicting Depression From Control Variables, Location, Off-Job Time Activities, and Recovery Experience

	Null model			Model 1			Model 2			Model 3		
Study variable	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Intercept	1.259	0.0644	19.553	1.3030	0.2294	5.680	1.3360	0.2301	5.806	1.3730	0.2287	6.003
Gender				–0.0324	0.1348	–0.241	–0.0347	0.1340	–0.259	–0.0416	0.1331	–0.313
Age				–0.0013	0.0152	–0.082	–0.0009	0.0151	–0.062	–0.0011	0.0150	–0.074
Number of children				–0.1334	0.1293	–1.032	–0.1347	0.1285	–1.048	–0.1266	0.1278	–0.991
Depression after work				0.3790	0.0626	6.053***	0.3860	0.0627	6.152***	0.4032	0.0575	7.010***
Change of time zone				0.4740	0.1769	2.680**	0.4640	0.1765	2.629**	0.4183	0.1661	2.518*
Location							–0.0629	0.0574	–1.094	–0.1317	0.0652	–2.020*
Time spent on work-related activities										0.0015	0.0012	1.282
Time spent on household activities										–0.0007	0.0008	–0.814
Time spent on low-effort activities										–0.0000	0.0004	–0.061
Time spent on physical activities										–0.0026	0.0011	–2.342*
Time spent on social activities										0.0012	0.0004	3.206**
Recovery experience										–0.1581	0.0528	–2.996**
–2*log (lh)	196.538			159.301			158.109			138.987		
Diff –2*log				37.237			1.192			19.122**		
df				5***			1			6		
Day level intercept variance (*SE*)	0.1463 (0.0209)			0.1000 (0.0143)			0.0994 (0.0142)			0.0822 (0.0117)		
Person level intercept variance (*SE*)	0.1426 (0.0403)			0.1596 (0.0405)			0.1574 (0.0401)			0.1612 (0.0396)		

Note. Diff = difference; log (lh) = likelihood ratio.
*$p < .05$. **$p < .01$. ***$p < .001$.

on off-job activities and recovery experience into the model. Model fit increased significantly (difference of $-2 * \log = 19.122$, $df = 6$, $p < .01$). Time spent on physical activities, time spent on social activities, and recovery experience were significant predictors of depression at bedtime, with the estimate of time spent on physical activities and recovery experience showing a negative sign and the estimate of time spent on social activities showing a positive sign. In addition, location was a significant predictor of depression at bedtime in this model. When spending off-job time away from one's home town, when spending time on physical activities, and when experiencing off-job time activities as recovering, depression at bedtime was low—also when controlling for depression after work and change of time zone. However, when spending much time on social activities, depression at bedtime was high. Thus, for depression as a well-being measure, data again supported Hypotheses 5 and 7.

With respect to fatigue as the dependent variable, we performed the same set of analyses. Findings are shown in Table 6. As in the previous analyses, Model 1, which included demographic variables, fatigue after work, and change of time zone, showed a better model fit than the null model (difference of $-2 * \log = 69.249$, $df = 5$, $p < .001$). Fatigue after work was a highly significant predictor of fatigue at bedtime. Location entered in Model 2 did not contribute to a better model fit (difference of $-2 * \log = 0.212$, $df = 1$, *ns*). The improvement of Model 3 (which included time spent on off-job time activities and recovery experience as predictors) over Model 2 was marginally significant (difference of $-2 * \log = 11.082$, $df = 6$, $p < .0834$). In this model, recovery experience was a significant predictor of fatigue at bedtime; the estimate of time spent on work-related activities was marginally significant. When spending much time on work-related activities during off-job time and when failing to experience recovery during off-job time activities, flight attendants felt more fatigued and exhausted late in the evening, also when controlling for initial levels of fatigue. Thus, Hypothesis 7 was supported for fatigue as a well-being measure. In addition, results are in line with Hypothesis 2, although the conventional significance level was not reached.

To explore the effects of location in more detail, we conducted a series of additional analyses in which we focused on interaction effects between location and other variables. Specifically, we computed interaction terms between location and off-job time activities and between location and recovery experience and included these interaction terms in an additional Model 4, in addition to all other predictor variables entered in Model 1–Model 3. However, model fit did not increase for any of the three well-being measures. This finding suggests that off-job time activities and recovery experience identified as predictors of well-being at bedtime do not differ between home and hotel settings.

Table 6. Multilevel Estimates for Models Predicting Fatigue From Control Variables, Location, Off-Job Time Activities, and Recovery Experience

	Null model			Model 1			Model 2			Model 3		
Study variable	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Intercept	3.6760	0.2057	17.871	3.6240	0.6766	5.356	3.5910	0.6812	5.272	3.5580	0.6859	5.187
Gender				0.0226	0.3986	0.057	0.0240	0.3990	0.060	0.0243	0.4014	0.061
Age				0.0113	0.0448	0.253	0.0110	0.0448	0.245	0.0106	0.0451	0.235
Number of children				–0.1687	0.3834	–0.440	–0.1675	0.3839	–0.437	–0.1634	0.3865	–0.423
Fatigue after work				0.5923	0.06189	9.570***	0.5934	0.0619	9.594***	0.5703	0.0607	9.391***
Change of time zone				0.6007	0.4476	1.342	0.6084	0.4476	1.359	0.5102	0.4340	1.176
Location							0.0653	0.1415	0.461	0.1635	0.1667	0.981
Time spent on work-related activities										0.0055	0.0030	1.834
Time spent on household activities										–0.0007	0.0021	–0.319
Time spent on low-effort activities										–0.0017	0.0011	–1.526
Time spent on physical activities										0.0022	0.0028	0.770
Time spent on social activities										0.0005	0.0010	0.467
Recovery experience										–0.3376	0.1347	–2.506*
–2*log (lh)	506.614			437.365			437.153			426.071		
Diff –2*log				69.249***			0.212			11.082		
df				5			1			6		
Day level intercept variance (*SE*)	1.139 (0.1625)			0.6022 (0.3559)			0.6002 (0.0857)			0.5530 (0.0762)		
Person level intercept variance (*SE*)	1.576 (0.4112)			1.5020 (0.0860)			1.5070 (0.3567)			1.5530 (0.3609)		

Note. Diff = difference; log (lh) = likelihood ratio.
*$p < .05$. ***$p < .001$.

Discussion

In this study, we examined recovery processes in flight attendants. Specifically, we explored differences in off-job time activities and experiences between evenings spent at home and evenings spent in a hotel relatively far away from one's home town. We examined the effects of location, off-job time activities, and recovery experience on flight attendants' well-being. Analysis revealed that flight attendants spent less time on job-related and other task-related activities, less time on household and child-care activities, and more time on social activities when staying in a hotel compared with a stay in their home town. Moreover, the subjective recovery experience was higher when being in a hotel. Overall, hierarchical linear modeling showed that off-job time activities and experiences predicted well-being at bedtime, also when controlling for well-being after work.

Time spent on physical activities during off-job time was a significant predictor of low depression and high vigor at bedtime. This finding is in line with earlier research on the beneficial effects of exercise and sports on well-being (Byrne & Byrne, 1993; Petruzzello et al., 1991). It also confirms findings on within-person effects reported in earlier day-level studies (Sonnentag, 2001; Sonnentag & Bayer, 2003). It is interesting to note that physical activities demonstrated their positive effects also within our sample of flight attendants, a group of employees who face high physical demands in their daily work. It might be that the physical demands associated with off-job time physical activities, such as exercise and sport, are very different from the physical demands present in the job of flight attendants. In addition, one can assume that during physical activities, one regains resources such as physical energy. However, time spent on physical activities did not predict fatigue at bedtime. A similar finding became evident in the study by Sonnentag and Bayer (2003), in which time spent on physical activities improved positive mood but did not influence fatigue. It may be that physical activities increase physical fatigue, which may mask the positive effects on other aspects of fatigue.

Inspection of Table 1 and Table 3 shows that average time spent on physical activities was very low in absolute terms, particularly when one compares it with the amount of time spent on low-effort or social activities. This finding suggests that small absolute amounts of time spent on physical activities can make a big difference with respect to well-being. Thus, physical activities seem to be a very efficient way to regulate one's well-being during off-job time.

Time spent on work-related activities resulted in marginally lower levels of vigor and higher levels of fatigue at bedtime. This finding mirrors results from earlier studies that reported detrimental effects of job-related

and other task-related activities pursued during off-job time (Sonnentag, 2001; Sonnentag & Zijlstra, 2003). It seems that such job-related and other task-related activities impede recovery because they are taxing and draw on resources already called upon during work. In addition, it might be that job-related activities during off-job time, in particular, are detrimental for recovery because they make psychological detachment from work difficult (Sonnentag & Bayer, 2003; Sonnentag & Kruel, 2004).

Recovery experience was a significant predictor for all three well-being measures. This finding indicates that in addition to *what* one does during off-job time, the subjective experience associated with the activity plays a core role for recovery and well-being. More specifically, recognizing that an activity is *recovering* contributes to one's well-being at bedtime. Other research on need for recovery has concentrated on the negative effects of a *lack of* recovery (Jansen et al., 2002; Sluiter et al., 1999). The present study extended the picture by showing that a positive experience of recovery has a beneficial effect on well-being.

In contrast to what we predicted in Hypothesis 1, staying in a hotel had no negative effect on well-being at bedtime. Stated differently, staying at home was not beneficial for flight attendants' well-being. It might be that at the bottom line, the demands faced at a hotel do not exceed demands faced at home. Our descriptive findings on the amount of time spent on work-related and household activities support this interpretation. Moreover, one may speculate that flight attendants do not lack important resources when being in a hotel, for example, because they are accustomed to travel and know exactly how to prepare for their stay in a hotel. Additionally, it might be that the resources available at home are not sufficient for regaining threatened or lost resources.

With respect to depression at bedtime, a particularly interesting pattern of findings emerged. When entering just location into the hierarchical model (Model 2), location had no effect on depression. However, after additionally entering off-job time activities and recovery experience in Model 3, the estimate of location was significant and indicated a lower level of depression at bedtime when staying in a hotel. When interpreting this pattern of findings, one has to keep in mind that, at a hotel, flight attendants spend substantially more time on social activities; in Model 3, these are positively related to depression. Thus, when entering just location into Model 2, location had no effect on depression because the positive effect of staying in a hotel and the negative effect of spending time on social activities were both "carried" in the location measure. When explicitly introducing time spent on social activities as an additional predictor, the location measure was no longer confounded with activities pursued in the different locations. As a consequence, a positive effect of staying in a hotel became evident.

Contrary to what had been stated in Hypothesis 6, time spent on social activities increased depression. It seems that for flight attendants, spending time with others during off-job time is not primarily a source of support but rather seems to draw additionally on their resources. This finding might be very specific for a professional group faced with a high degree of emotion work and the demands of emotion regulation throughout the working day. Results from earlier studies showed that, particularly after stressful working days, individuals have a tendency for social withdrawal (Repetti, 1989; Repetti & Wood, 1997). It may be that flight attendants also experience a need to socially withdraw from others but may attempt to override this need and spend time with others when traveling. As a consequence, time spent on social activities impedes their well-being.

Neither time spent on household and child-care activities nor time spent on low-effort activities had an effect on well-being at bedtime. It has to be noted that both activity categories were very broad, comprising a broad range of activities. Thus, it might be that some of the household and child-care or low-effort activities during the evening increased well-being—for example, meal preparation—whereas other activities—for example, washing the dishes—reduced it. In addition, there might be substantial interindividual differences in this area.

Limitations and Directions for Future Research

This study is not without limitations. First, because of the comparably extensive data collection procedure, the sample size was relatively small and the power to detect interaction effects was low. Second, this study relied exclusively on self-report measures, which are associated with a number of problems, including common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Although we acknowledge that the use of self-report measures is problematic, the use of person-centered variables in the present study and findings from a recent study on teachers cited above (Sonnentag & Kruel, 2004) allow us to conclude that our study findings cannot be exclusively attributed to the use of self-report data. Third, we focused on short-term outcomes of recovery processes in flight attendants. Our study is mute about possible longer term effects. One may speculate that insufficient recovery during the evening may accumulate over time and may result in more serious forms of impaired well-being (Meijman & Mulder, 1998). Therefore, it would be an interesting and relevant question for future research to examine whether recovery on a daily basis helps in protecting well-being and health in the long run (see Strauss-Blasche, Ekmekcioglu, & Marktl, 2000; Westman & Eden, 1997). Thus, recovery on a

daily basis may be particularly relevant for maintaining health and well-being in the long run.

Practical Implications

Our study offers some suggestions about how to promote recovery processes. First of all, it seems important that individuals experience the activities they are pursuing as opportunities to recover from stress. We assume that individual differences are important here; therefore, it might help individuals to improve their well-being if they observed themselves to find out which activities are most beneficial for them.

When it comes to more specific activities, physical activities, even for short periods, had positive effects on well-being, particularly on vigor and low depression. Therefore, individuals should be encouraged to set aside some time for physical activities when traveling and select hotels that provide facilities that encourage sports and exercise.

Social activities increased depression in flight attendants, but it is not suggested that flight attendants should spend less off-job time on social activities. In the long run, social isolation, decreased social support, and decreased opportunities to build rewarding personal relationships may be consequences of social withdrawal during off-job time. It seems important that flight attendants find social activities that are not additionally demanding but that help in regaining resources for their stressful jobs.

To sum up, at least with respect to short-term effects, we did not find any evidence that spending off-job time far away from home is detrimental for flight attendants' well-being. Future research should also investigate longer term effects in order to shed more light on the complex picture of recovery from emotion work.

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