The Impact of Health Insurance on Employee Job Anxiety, Withdrawal Behaviors, and Task Performance

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Abstract
One aspect of the continuing debate in the U.S. regarding health insurance that has received little attention, to date, is the impact of health insurance coverage on employees, notably with regard to individual employees’ attitudes, behavior, and performance. Although the debate was not over when this report was published in January 2011, in 2010 the U.S. passed legislation that extends or requires health insurance coverage for employees, depending on an employer’s specific situation. This report incorporates the findings of two studies that touch on these considerations. In these studies we used samples comprising healthcare and senior-services customer-contact employees who had worked for at least six months at one of sixteen facilities operated by Berkshire Healthcare. In Study A, within a sample of 591 employees, we found that health insurance coverage had no significant impact on individual employees’ job anxiety or withdrawal behaviors. However, health insurance coverage did have a significant, positive impact on individual employees’ task performance. In Study B we compared the impact of health insurance that included mental illness coverage and health insurance that did not include mental illness coverage on individual employees’ job anxiety, withdrawal behaviors, and task performance. Study B showed a puzzling result; specifically, that individual employees with health insurance that included mental illness coverage had significantly higher company-documented tardiness for the six-month period preceding the study than those with health insurance that did not include mental illness coverage.

Keywords
health insurance, job anxiety, withdrawal behaviors, absenteeism, employee performance

Disciplines
Business | Hospitality Administration and Management

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by Sean A. Way, Ph.D., Bill Carroll, Ph.D., Alex M. Susskind, Ph.D., and Joe C.Y. Leng
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EXECUTIVE SUMMARY

One aspect of the continuing debate in the U.S. regarding health insurance that has received little attention, to date, is the impact of health insurance coverage on employees, notably with regard to individual employees’ attitudes, behavior, and performance. Although the debate was not over when this report was published in January 2011, in 2010 the U.S. passed legislation that extends or requires health insurance coverage for employees, depending on an employer’s specific situation. This report incorporates the findings of two studies that touch on these considerations. In these studies we used samples comprising healthcare and senior-services customer-contact employees who had worked for at least six months at one of sixteen facilities operated by Berkshire Healthcare. In Study A, within a sample of 591 employees, we found that health insurance coverage had no significant impact on individual employees’ job anxiety or withdrawal behaviors. However, health insurance coverage did have a significant, positive impact on individual employees’ task performance. In Study B we compared the impact of health insurance that included mental illness coverage and health insurance that did not include mental illness coverage on individual employees’ job anxiety, withdrawal behaviors, and task performance. Study B showed a puzzling result; specifically, that individual employees with health insurance that included mental illness coverage had significantly higher company-documented tardiness for the six-month period preceding the study than those with health insurance that did not include mental illness coverage.
About the Authors

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Bill Carroll, Ph.D., is a senior lecturer at the School of Hotel Administration, Cornell University (wjc28@cornell.edu) and the CEO of Marketing Economics, a consulting firm specializing in travel industry pricing, distribution, yield management and strategic planning. He has held executive positions at Hertz, where he was responsible for global pricing, yield management, marketing information systems, and counter sales, and at Reed Elsevier’s Travel Group. He also works closely with PhoCusWright, Inc. a travel industry research, consulting, and publishing company. In collaboration with PhoCusWright, Bill’s current research focuses on the evolution of hotel distribution and its impact on major chains and intermediaries. His research has been published in American Economist, Cornell Hospitality Quarterly, Journal of Revenue and Pricing Management, and Journal of Pricing Management.

Alex M. Susskind, Ph.D., is an associate professor of food and beverage management at the Cornell School of Hotel Administration (ams76@cornell.edu). Alex’s current research efforts focus on (1) the influence of customer-service provider interaction as it relates to organizational effectiveness and efficiency from the perspective of guests, employees, and managers and (2) the influence of communication relationships upon individuals’ work-related attitudes and perceptions surrounding organizational events and processes such as teamwork and downsizing. His research has been published in diverse outlets such as Communication Research, Cornell Hospitality Quarterly, Journal of Applied Psychology, Journal of Food Quality and Preference, and Journal of Hospitality and Tourism Research.

Joe C.Y. Leng is pursuing a Master of Health Administration (Sloan Program) at Cornell University (cl738@cornell.edu). Prior to joining the Sloan Program, he has worked at Singapore’s Ministry of Health for six years. Joe holds a Master in Public Administration from the Lee Kuan Yew School of Public Policy, National University of Singapore.

The authors acknowledge the support of Berkshire Healthcare in conducting this study.
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Health insurance is a benefit provided to a majority of workers in the U.S. However, Rho and Schmitt reported that 16.7 percent of U.S. workers do not have health insurance.¹ One question that arises regarding health insurance is what impact, if any, the provision of health insurance might have on individual employees’ attitudes and performance. Using data obtained from Berkshire Healthcare and its employees, we investigated two related questions regarding the effect of health insurance on workers. (Berkshire Healthcare is a data-provider friend of the Cornell Center for Hospitality Research.) In Study A, we investigated whether the job anxiety, withdrawal behaviors (i.e., absenteeism and tardiness for the preceding six-month period), and task performance of individual employees who had health insurance was significantly different from those who did not. As mental health care coverage is included in some, but not all health insurance policies, we conducted Study B, in which we investigated whether the provision of that specific coverage was associated with significant differences in the job anxiety, withdrawal behaviors, and task performance of individual employees. We first summarize the results of both studies, and then we explain them in more detail.

Health Insurance Coverage
The purpose of Study A was to empirically and impartially examine the impact, if any, of health insurance coverage on the self-reported job anxiety, company-documented tardiness, company-documented absenteeism, and self-reported task performance of individual employees. We will review our methodology in a moment, but first we’ll present a summary of our findings. In Study A, we found that health insurance coverage was not associated with the self-reported job anxiety (see Exhibit 4, page 11), company-documented tardiness for the preceding six-month period (see Exhibit 5, page 12), or company-documented absenteeism for the preceding six-month period (see Exhibit 6, page 12) of individual employees, after controlling for numerous demographic and job attributes. However, after controlling for those same demographic and job attributes, health insurance coverage was positively related to individual employee self-reported task performance (see Exhibit 7, page 13). Based on this survey, our results indicate that individual employees with health insurance were more likely than those without health insurance to do the following:

- Adequately complete assigned duties,
- Fulfill responsibilities specified in their job description,
- Perform expected tasks,
- Meet formal performance requirements of the job,
- Engage in activities that directly affect their performance evaluation,
- Take care of aspects of the job that they’re obligated to perform, and
- Perform essential duties.

Health Insurance that Included Mental Illness Coverage
Study B was essentially the same as Study A, but with one important difference. The purpose of Study B was to examine whether health insurance that included mental illness coverage had differential effects on job anxiety, tardiness, absenteeism, and task performance of individual employee, as compared to health insurance that did not include mental health coverage. We present the regression results for individual employees’ job anxiety in Exhibit 8 (page 14), tardiness for the preceding six-month period in Exhibit 9 (page 14), absenteeism for the preceding six-month period in Exhibit 10 (page 15), and task performance in Exhibit 11 (page 16). The sample size here was 503 Berkshire Healthcare employees. We found one notable difference between individual employees who had health insurance that included mental illness coverage and those who had health insurance that did not include mental illness coverage. That is, after once again controlling for demographic and job attributes, individual employees who had health insurance that included mental illness coverage had significantly higher company-documented tardiness for the preceding six-month period than individual employees who had health insurance that did not include mental illness coverage. We find this result difficult to interpret, and we therefore have continued to collect individual employee company-documented tardiness data for following (next) six-month period. This will allow us to examine whether health insurance that included mental illness coverage has a differential predictive effect on individual employee company-documented tardiness as compared to health insurance that does not include mental illness coverage.

Robust Results and Future Research
It is important to note that our results are robust. In both studies, we controlled for the influence of individual employee age, gender, education, ethnicity, family or household structure, number of dependent children, job title, tenure, weekly commitment, hourly wage, and facility as they relate to individual employees’ self-reported anxiety, company-documented tardiness for the preceding six-month period, company-documented absenteeism for the preceding six-month period, and self-reported task performance. Therefore, the finding that health insurance coverage is positively related to individual employee task performance is noteworthy.

We should point out that we also conducted supplemental regression analyses using trimmed samples, in which we excluded the top five percent of each individual sample in terms of company-documented tardiness incidents for the preceding six-month period. We did this to account for the non-normality in the distribution of individual employee company-documented tardiness incidents in both Study A and Study B and as a check of the robustness of the results reported in Exhibit 9. We then reassessed the regression models predicting company-documented tardiness for the preceding six-month period using the trimmed samples. This made no difference in the results.

As a consequence of this peculiar finding, we will collect individual employee company-documented tardiness, absenteeism, involuntary turnover, and voluntary turnover data for the six month period following our initial study, so that we can examine whether health insurance coverage is a predictor of individual employee company-documented tardiness, absenteeism, involuntary turnover, or voluntary turnover. The remainder of this report details the two studies’ methodology and findings.

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2 That is, after controlling for age, gender, education, ethnicity, family or household structure, number of dependent children, job title, tenure, weekly commitment (work hours scheduled per week), hourly wage, and facility.
EXHIBIT 1

**Berkshire Healthcare’s 17 facilities**

Bourne Manor Extended Care Facility, Bourne, MA  
Charlene Manor Extended Care Facility, Greenfield, MA  
East Longmeadow Skilled Nursing Center, East Longmeadow, MA  
Fairview Commons Nursing and Rehabilitation Center, Great Barrington, MA  
Hathaway Manor Extended Care Facility, New Bedford, MA  
Hillcrest Commons Nursing and Rehabilitation Center, Pittsfield, MA  
Hospitality Homes Skilled Nursing and Rehabilitation, Xenia, OH  
Hunt Nursing and Rehabilitation Center, Danvers, MA  
Kimball Farms Nursing Care Center, Lenox, MA  
Kimball Farms, PineHill Assisted Living, Lenox, MA  
Linda Manor Extended Care Facility, Leeds, MA  
Mount Greylock Extended Care Facility, Pittsfield, MA  
North Adams Commons Nursing and Rehabilitation Center, North Adams, MA  
Pilgrim Rehabilitation and Skilled Nursing Center, Peabody, MA  
The Commons at Squirrel Hill, Pittsburgh, PA  
Windsor Skilled Nursing and Rehabilitation Center, South Yarmouth, MA  
Williamstown Commons Nursing and Rehabilitation Center, Williamstown, MA

Note. Accurate company-documented individual CNA, LPN, and RN tardiness and absenteeism data were not available from Hunt Nursing and Rehabilitation Center (one of the 15 Berkshire Healthcare facilities located in Massachusetts); therefore, our current studies’ target respondents did not include CNAs, LPNs, or RNs working at Hunt Nursing and Rehabilitation Center.

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**Study Details: Methodology**

**Target respondents.** Berkshire Healthcare is a nonprofit healthcare and senior-services company that operates seventeen rehabilitation and nursing facilities in three states: fifteen in Massachusetts, one in Ohio, and one in Pennsylvania (see Exhibit 1). In the twelve-month period previous to the date that our study’s surveys were administered, Berkshire Healthcare employed, on average, 1,002 certified nursing assistants (CNAs), 347 licensed practical nurses (LPNs), and 158 registered nurses (RNs). Additionally, in this twelve-month period Berkshire Healthcare’s average CNA wage was $11.84 per hour, average LPN wage was $23.68 per hour, and average RN wage was $26.76 per hour. Annual turnover rates were as follows: CNA, 43.0 percent; LPN, 39.8 percent; and RN, 40.1 percent.

Target respondents \( (N = 873) \) include 584 CNAs (66.9%), 207 LPNs (23.7%), and 82 RNs (9.4%) that were scheduled to work at one of sixteen Berkshire Healthcare-operated facilities between June 15 and June 22, 2010, and for whom company-documented tardiness and absenteeism data were available for the six month period prior to the date that our surveys were administered.\(^3\) Note that 756 (86.6%) of our 873 target respondents worked at a Berkshire Healthcare facility located in Massachusetts, and thus, would have been required by Massachusetts state law to have health insurance.\(^4\)

**Procedures**

Between June 15 and June 22, 2010, each Berkshire Healthcare facility’s contact person provided each CNA, LPN, and RN target respondent from her or his facility with a survey packet which included the following: (1) a copy of a cover letter from the executive vice president of Berkshire Healthcare; (2) a copy of our survey; and (3) a postage paid, addressed return envelope. The executive vice president’s cover letter explained the purpose of our studies, promised anonymity for responses, and encouraged voluntary participation.

Responses were received from 602 of our 873 target respondents, a 69.0-percent response rate. A comparison of the 602 respondents and 271 non-respondents by job title tenure, number of scheduled weekly work hours (weekly commitment), hourly wage, and company-documented absenteeism incidents for the preceding six-month period showed no significant differences. However, company-documented tardiness incidents for the preceding six-month period for respondents and non-respondents were significantly different; with respondents having a mean of 3.38 tardiness incidents (s.d. = 7.49, min. = 0, max. = 73), while the mean for non-respondents was 7.37 (s.d. = 14.15, min. = 0, max. = 96). This result could be expected, as target respondents with higher levels of tardiness may have been more concerned that management may have had access to their responses.

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\(^3\) As a point of clarification, all employees in the sample had worked for Berkshire Healthcare for a minimum of six months. Accurate company-documented individual CNA, LPN, and RN tardiness and absenteeism data were not available from Hunt Nursing and Rehabilitation Center, in Massachusetts; therefore, our respondents exclude employees at Hunt Nursing and Rehabilitation Center.

\(^4\) “Massachusetts state law requires employers with 11 or more full time equivalent employees to provide a Section 125 complaint, cafeteria-style health plan that can be purchased with pre-tax dollars and provides penalties for noncompliance at both the employer and individual employee level.” S. Jackson, “Mulling over Massachusetts: Health Insurance Mandates and Entrepreneurs,” *Entrepreneurship Theory and Practice*, early review (first published on-line October 22, 2009; DOI: 10.1111/j.1540-6520.2009.00351.x; downloaded by the first author at 13:05, August 19, 2010), p. 1-23.
despite assurances from the executive vice president and the research team that they would not.

Study A: Sample
We excluded eleven of the 602 respondents because they had incomplete data, leaving a sample of 591 Berkshire Healthcare employees. Within this sample of 591 employees, 65.0 percent worked as a CNA, 25.0 percent as an LPN, and 10.0 percent as an RN; women dominated the sample (90.7%); the average age was 41.83; the average job tenure was 6.03 years; the average wage was $15.96 per hour; the average weekly commitment was 34.17 hours; and the average number of tardiness incidents for the preceding six-month period was 3.41 and 3.14 for absenteeism incidents during the same period.

Study A: Measures

Health insurance. Given the Massachusetts health insurance statute, it is not surprising that only 35 (5.9%) of the respondents did not have any health insurance. All of them worked at either the Berkshire Healthcare facility located in Pennsylvania or Ohio. We measure health insurance coverage with a dummy variable (mean = 0.94, s.d. = 0.24) labeled “Health insurance (dummy variable)” in Exhibits 4, 5, 6, and 7.

Job anxiety. Consistent with prior research, we measured individual employee self-reported job anxiety with four items adopted from the Parker and DeCotiis five-item job anxiety scale (see Exhibit 2); response options ranged from 1 (strongly disagree) to 5 (strongly agree). A sample item is “Sometimes when I think about my job I get a tight feeling in my chest.” Exploratory maximum likelihood factor analysis (i.e., maximum likelihood extraction with direct oblimin rotation) of the four-item job anxiety scale yielded a single statistically significant dimension: $\chi^2 (df = 2; n = 591) = 43.50$ ($p < .001$). The Cronbach’s alpha coefficient for this four-item job anxiety scale was 0.85, which exceeded the recommended minimum value of 0.70 for a scale.

Tardiness. Based on company records, we collected the number of times (incidents) that the company reported that the individual had been late for work during the six-month period preceding the administration of our survey (i.e., between December 16, 2009 and June 15, 2010). To account for non-normality in the distribution of individual employee company-documented tardiness incidents for the preceding six-month period, we used its natural logarithm and we also reassessed the regression models for company-documented tardiness (see Exhibit 5 using a trimmed sample, which excluded the twenty-seven cases with the highest company-documented tardiness incidents for the preceding six-month period (approximately 5 percent of Study A’s sample). The pattern of results for these regression models of both the full and trimmed sample was the same.

Absenteeism. We likewise collected individual employee absenteeism incidents for the preceding six-month period. To account for non-normality in the distribution of

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individual employee company-documented absenteeism incidents for the preceding six-month period, we used its natural logarithm, and we also reassessed the regression models for company-documented absenteeism (see Exhibit 6) using a trimmed sample, which as before excluded the twenty-seven cases with the highest company-documented absenteeism incidents for the preceding six-month period. Again, the pattern of results for these regression models was the same for the full and trimmed absenteeism samples.

**Task performance.** Consistent with prior research, we measured individual employee self-reported task performance with the Williams and Anderson seven-item task performance scale (see Exhibit 2); response options ranged from 1 (strongly disagree) to 5 (strongly agree). A sample item is “I perform tasks that are expected of me.” Exploratory maximum likelihood factor analysis of the seven-item task performance scale yielded a single statistically significant dimension: $\chi^2 (df = 14; n = 591) = 384.10 (p < .001)$. The Cronbach’s alpha coefficient for this seven-item task performance scale was 0.90, which exceeded the recommended minimum value of 0.70 for a scale.

**Controls.** We also gathered demographic information from the respondents to create control variables for age, gender, education, ethnicity, family or household structure, and number of dependent children. With regard to family or household structure, we developed dummy variables to countenance three structures: a situation where the respondent and the partner or spouse were the household’s co-breadwinners (F/HS1); one in which the respondent reported being the sole breadwinner for a household that included a partner or spouse (F/HS2); and one in which the respondent reported no partner or spouse (F/HS3; the omitted category).

Furthermore, we used job-related information for each respondent that we obtained from the company to create control variables for job title, tenure, weekly commitment, hourly wage, and location of employment (facility). We used the job title information that we obtained from the company to create three job title dummy variables: CNA; LPN; and RN (the omitted category). We accounted for non-normality in the distribution of the tenure information that we obtained from the company by using its natural logarithm. Finally, we used the facility information that we obtained from the company to create sixteen facility dummy variables.

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8 Parker and DeCotiis, op.cit.

9 The correlation matrix for all of Study B’s variables is available from the first author upon request.

Study A: Results

Exhibit 3 presents the means, standard deviations, and correlation matrix for Study A’s dependent and independent variables. In summary, individual employee health insurance coverage was positively associated with individual employee self-reported task performance ($r = .14$, $p < .01$). There was a positive association between individual employees’ tardiness and their absenteeism for the preceding six-month period ($r = .22$, $p < .01$). We note, then, that individual employees with higher tardiness were also likely to be absent more frequently. Other noteworthy correlations include: Individual employee self-reported job anxiety was negatively associated with individual employee gender (that is, with being female) and the CNA job title. On the other hand, individual employee self-reported job anxiety was positively associated with individual employee education, hourly wage, and the LPN and RN job titles. Tardiness for the preceding six-month period was negatively associated with individual employee age and tenure, suggesting that older and more established employees are less likely to be late for work. Not unexpected, tardiness for the preceding six-month period was positively associated with the number of dependent children. In parallel fashion, absenteeism for the preceding six-month period was negatively associated with employee age, education, tenure, hourly wage, and the LPN and RN job titles, and positively associated with the number of dependent children, weekly commitment, and the CNA job title. Finally, individual employee self-reported task performance was positively associated with being female.

Below we present the regression results for individual employee self-reported job anxiety (see Exhibit 4), company-documented tardiness (see Exhibit 5), and company-documented absenteeism (see Exhibit 6).

Exhibit 4, Model 2 shows that the relationship between health insurance coverage and self-reported job anxiety was not significant ($\beta = 0.20$, $p > .10$). Therefore, we conclude that having health insurance does not affect individual employee job anxiety.

Exhibit 5, Model 2 (next page) shows that the relationship between health insurance coverage and company-documented tardiness for the preceding six-month period was not significant ($\beta = 0.07$, $p > .10$), and this relationship was the same for the trimmed tardiness sample. These results indicate that having health insurance does not affect individual employee tardiness.
### Exhibit 5

**Study A: Regression results for individual employee tardiness**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Company-documented Tardiness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
</tr>
<tr>
<td>Constant</td>
<td>1.35 (.58)**</td>
</tr>
<tr>
<td>Age</td>
<td>-0.01 (.00)***</td>
</tr>
<tr>
<td>Gender (dummy variable)</td>
<td>-0.03 (.13)</td>
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<tr>
<td>Education</td>
<td>-0.02 (.05)</td>
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<tr>
<td>Ethnicity dummy variables</td>
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<tr>
<td>Family/household structure dummy variables</td>
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<tr>
<td>Number of dependent children</td>
<td>0.05 (.03)+</td>
</tr>
<tr>
<td>Tenure</td>
<td>-0.09 (.05)+</td>
</tr>
<tr>
<td>Weekly commitment</td>
<td>0.00 (.01)</td>
</tr>
<tr>
<td>Hourly wage</td>
<td>0.00 (.02)</td>
</tr>
<tr>
<td>CNA (dummy variable)</td>
<td>0.23 (.28)</td>
</tr>
<tr>
<td>LPN (dummy variable)</td>
<td>0.35 (.15)*</td>
</tr>
<tr>
<td>Facility dummy variables</td>
<td>Yes</td>
</tr>
<tr>
<td>Health insurance (dummy variable)</td>
<td></td>
</tr>
</tbody>
</table>

| Model F                                        | 10.94 ***                   | 10.61 ***                   |
| Model R²                                       | .393                        | .393                        |
| ΔR²                                            | —                           | .000                        |

Notes: *N* = 591. Unstandardized beta coefficients are shown in the table above, standard errors are in parentheses, the change in $R^2 (ΔR^2)$ for Model 2 are in comparison to the $R^2$ in Model 1. “Yes” is used to indicate that the (1) ethnicity dummy variables, (2) family or household structure dummy variables, and (3) facility dummy variables were included in the regression model; + *p* < 0.10, two-tailed test; * *p* < 0.05, two-tailed test; ** *p* < 0.01, two-tailed test; and *** *p* < 0.001, two-tailed test.

### Exhibit 6

**Study A: Regression results for individual employee absenteeism**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Company-Documented Absenteeism</th>
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</thead>
<tbody>
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<td>Model 1</td>
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<tr>
<td>Constant</td>
<td>1.38 (.47)**</td>
</tr>
<tr>
<td>Age</td>
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<tr>
<td>Gender (dummy variable)</td>
<td>0.15 (.10)</td>
</tr>
<tr>
<td>Education</td>
<td>-0.07 (.04)</td>
</tr>
<tr>
<td>Ethnicity dummy variables</td>
<td>Yes</td>
</tr>
<tr>
<td>Family or household structure dummy variables</td>
<td>Yes</td>
</tr>
<tr>
<td>Number of dependent children</td>
<td>0.03 (.02)</td>
</tr>
<tr>
<td>Tenure</td>
<td>-0.14 (.04)***</td>
</tr>
<tr>
<td>Weekly commitment</td>
<td>0.01 (.00)+</td>
</tr>
<tr>
<td>Hourly wage</td>
<td>-0.00 (.02)</td>
</tr>
<tr>
<td>CNA (dummy variable)</td>
<td>0.32 (.23)</td>
</tr>
<tr>
<td>LPN (dummy variable)</td>
<td>0.29 (.13)*</td>
</tr>
<tr>
<td>Facility dummy variables</td>
<td>Yes</td>
</tr>
<tr>
<td>Health insurance (dummy variable)</td>
<td></td>
</tr>
</tbody>
</table>

| Model F                                        | 4.57 ***                      | 4.43 ***                      |
| Model R²                                       | .213                          | .213                          |
| ΔR²                                            | ----                          | .000                          |

Notes: *N* = 591. Unstandardized beta coefficients are shown in the table above, standard errors are in parentheses, the change in $R^2 (ΔR^2)$ for Model 2 are in comparison to the $R^2$ in Model 1. “Yes” is used to indicate that the (1) ethnicity dummy variables, (2) family or household structure dummy variables, and (3) facility dummy variables were included in the regression model; + *p* < 0.10, two-tailed test; * *p* < 0.05, two-tailed test; ** *p* < 0.01, two-tailed test; and *** *p* < 0.001, two-tailed test.
Exhibit 6, Model 2 shows that the relationship between health insurance coverage and company-documented absenteeism for the preceding six month period was not significant ($\beta = 0.03$, $p > .10$), and this relationship was the same for the trimmed absenteeism sample. These results indicate that having health insurance does not affect individual employee absenteeism.

Finally, the results presented in Exhibit 7, Model 2 show a significant, positive relationship between health insurance coverage and self-reported task performance ($\beta = 0.38$, $p < .001$). Consequently, we conclude that health insurance coverage has a positive impact on individual employee task performance.

Study B: Sample

Not all health insurance policies cover mental health care, and so we next empirically examined whether health insurance that included mental illness coverage had differential effects on individual employee anxiety, tardiness, absenteeism, and task performance, as compared to health insurance that did not include mental health coverage. We of course excluded the 35 respondents who did not have health insurance. Additionally, we excluded 48 individuals who indicated that they had health insurance but who did not indicate whether their health insurance included or did not include mental illness coverage, leaving a sample of 508 employees. Within this sample, 63.2 percent worked as a CNA, 26.4 percent as an LPN, and 10.4 percent as an RN; again, women dominated the sample (90.9%); the average age was 42.31; the average job tenure was 6.11 years; the average wage was $16.10 per hour; the average weekly commitment was 34.44 hours; and the average number of tardiness incidents for the preceding six-month period was 3.18, while the average for absenteeism for that period was 3.14.

Study B: Measures

Health insurance with mental illness coverage. Within Study B’s sample of 508 employees, 431 (84.8%) had health insurance that included mental illness coverage, and the remaining 77 (15.2%) had health insurance that did not include mental illness coverage.

Job anxiety. As we did above, in Study B, we measured individual employee self-reported job anxiety with four items adopted from the Parker and DeCotiis five-item job anxiety scale (see Exhibit 2). Again, in Study B, exploratory maximum likelihood factor analysis of the four-item job anxiety scale yielded a single statistically significant dimen-

Notes: $N = 591$. Unstandardized beta coefficients are shown in the table above, Standard errors are in parentheses, the change in $R^2 (\Delta R^2)$ for Model 2 are in comparison to the $R^2$ in Model 1. “Yes” is used to indicate that the (1) ethnicity dummy variables, (2) family or household structure dummy variables, and (3) facility dummy variables were included in the regression model; + $p < 0.10$, two-tailed test; * $p < 0.05$, two-tailed test; ** $p < 0.01$, two-tailed test; and *** $p < 0.001$, two-tailed test.
**Study B: Regression results for individual employee job anxiety**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Self-reported Job Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
</tr>
<tr>
<td>Constant</td>
<td>3.72 (.71)***</td>
</tr>
<tr>
<td>Age</td>
<td>-0.01 (.00) **</td>
</tr>
<tr>
<td>Gender (dummy variable)</td>
<td>-0.50 (.16) **</td>
</tr>
<tr>
<td>Education</td>
<td>0.06 (.06)</td>
</tr>
<tr>
<td>Ethnicity dummy variables</td>
<td>Yes</td>
</tr>
<tr>
<td>Family or household structure dummy variables</td>
<td>Yes</td>
</tr>
<tr>
<td>Number of dependent children</td>
<td>-0.03 (.04)</td>
</tr>
<tr>
<td>Tenure</td>
<td>0.14 (.05) **</td>
</tr>
<tr>
<td>Weekly commitment</td>
<td>0.00 (.01)</td>
</tr>
<tr>
<td>Hourly wage</td>
<td>0.01 (.03)</td>
</tr>
<tr>
<td>CNA (dummy variable)</td>
<td>-0.35 (.36)</td>
</tr>
<tr>
<td>LPN (dummy variable)</td>
<td>-0.18 (.19)</td>
</tr>
<tr>
<td>Facility dummy variables</td>
<td>Yes</td>
</tr>
<tr>
<td>Health insurance with MIC (dummy variable)</td>
<td></td>
</tr>
</tbody>
</table>

Model F: 3.02 *** 2.93 ***
Model R²: .174 .174
ΔR²: — .000

Notes: N = 508. Unstandardized beta coefficients are shown in the table above, Standard errors are in parentheses, the change in R² (ΔR²) for Model 2 are in comparison to the R² in Model 1. “Yes” is used to indicate that the (1) ethnicity dummy variables, (2) family or household structure dummy variables, and (3) facility dummy variables were included in the regression model; + p < 0.10, two-tailed test; * p < 0.05, two-tailed test; ** p < 0.01, two-tailed test; and *** p < 0.001, two-tailed test.

---

**Study B: Regression results for individual employee tardiness**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Company-documented Tardiness</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
</tr>
<tr>
<td>Constant</td>
<td>1.12 (.61) +</td>
</tr>
<tr>
<td>Age</td>
<td>-0.02 (.00) ***</td>
</tr>
<tr>
<td>Gender (dummy variable)</td>
<td>-0.03 (.14)</td>
</tr>
<tr>
<td>Education</td>
<td>-0.03 (.05)</td>
</tr>
<tr>
<td>Ethnicity dummy variables</td>
<td>Yes</td>
</tr>
<tr>
<td>Family or household structure dummy variables</td>
<td>Yes</td>
</tr>
<tr>
<td>Number of dependent children</td>
<td>0.02 (.03)</td>
</tr>
<tr>
<td>Tenure</td>
<td>-0.08 (.04) +</td>
</tr>
<tr>
<td>Weekly commitment</td>
<td>-0.01 (.01)</td>
</tr>
<tr>
<td>Hourly wage</td>
<td>0.03 (.02)</td>
</tr>
<tr>
<td>CNA (dummy variable)</td>
<td>0.52 (.31) +</td>
</tr>
<tr>
<td>LPN (dummy variable)</td>
<td>0.45 (.16) **</td>
</tr>
<tr>
<td>Facility dummy variables</td>
<td>Yes</td>
</tr>
<tr>
<td>Health insurance with MIC (dummy variable)</td>
<td></td>
</tr>
</tbody>
</table>

Model F: 8.43 *** 8.45 ***
Model R²: .370 .378
ΔR²: — .008 *

Notes: N = 508. Unstandardized beta coefficients are shown in the table above, Standard errors are in parentheses, the change in R² (ΔR²) for Model 2 are in comparison to the R² in Model 1. “Yes” is used to indicate that the (1) ethnicity dummy variables, (2) family or household structure dummy variables, and (3) facility dummy variables were included in the regression model; + p < 0.10, two-tailed test; * p < 0.05, two-tailed test; ** p < 0.01, two-tailed test; and *** p < 0.001, two-tailed test.
**Exhibit 10**

**Study B: Regression results for individual employee absenteeism**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Company-documented Absenteeism</th>
</tr>
</thead>
<tbody>
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<td>Model 1</td>
</tr>
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<td>Constant</td>
<td>1.32 (.50) **</td>
</tr>
<tr>
<td>Age</td>
<td>0.00 (.00)</td>
</tr>
<tr>
<td>Gender (dummy variable)</td>
<td>0.08 (.11)</td>
</tr>
<tr>
<td>Education</td>
<td>-0.04 (.04)</td>
</tr>
<tr>
<td>Ethnicity dummy variables</td>
<td></td>
</tr>
<tr>
<td>Family or household structure dummy variables</td>
<td></td>
</tr>
<tr>
<td>Number of dependent children</td>
<td>0.03 (.03) **</td>
</tr>
<tr>
<td>Tenure</td>
<td>-0.10 (.04) **</td>
</tr>
<tr>
<td>Weekly commitment</td>
<td>0.01 (.01)</td>
</tr>
<tr>
<td>Hourly wage</td>
<td>-0.01 (.02)</td>
</tr>
<tr>
<td>CNA (dummy variable)</td>
<td>0.33 (.25)</td>
</tr>
<tr>
<td>LPN (dummy variable)</td>
<td>0.26 (.13) +</td>
</tr>
<tr>
<td>Facility dummy variables</td>
<td></td>
</tr>
<tr>
<td>Health insurance with MIC (dummy variable)</td>
<td></td>
</tr>
</tbody>
</table>

Model F  4.02 ***  3.90 ***  
Model R² .219 .219 
ΔR² .000

Notes: N = 508. Unstandardized beta coefficients are shown in the table above, Standard errors are in parentheses, the change in R² (ΔR²) for Model 2 are in comparison to the R² in Model 1. “Yes” is used to indicate that the (1) ethnicity dummy variables, (2) family or household structure dummy variables, and (3) facility dummy variables were included in the regression model; + p < 0.10, two-tailed test; * p < 0.05, two-tailed test; ** p < 0.01, two-tailed test; and *** p < 0.001, two-tailed test.

**Tardiness.** We used the same strategy to account for non-normality in the distribution of individual employee company-documented tardiness incidents for the preceding six-month period in Study B as we did in Study A, with the same results.12

**Absenteeism.** We used the same strategy to account for non-normality in the distribution of individual employee company-documented absenteeism incidents for the preceding six-month period in Study B as we did in Study A, again, with the same results.13

**Task performance.** As we did above, in Study B we measured individual employee self-reported task performance with the Williams and Anderson task performance scale (see Exhibit 2).14 Again, in Study B, exploratory maximum likelihood factor analysis of the seven-item task performance scale yielded a single statistically significant dimension: χ² (df = 14; n = 508) = 364.65 (p < .001). The Cronbach’s alpha coefficient for this seven-item task performance scale was 0.90, which exceeded the recommended minimum value of 0.70 for a scale.

**Controls.** As we did in Study A, in Study B we included age, gender, education, ethnicity, family or household structure, number of dependent children, job title, tenure, hourly wage, weekly commitment, and facility control variables in all of our regression analyses. In the following section, the results of these regression analyses are presented in Exhibits 8, 9, 10, and 11.

**Study B: Results**

As we report in Exhibit 3, there was a positive correlation in Study B between individual employees’ tardiness and their absenteeism for the preceding six month period (r = .18, p < .01). Moreover, in Study B, individual employee self-reported job anxiety was negatively correlated with individual employee self-reported task performance (r = -.09, p < .05).15

Exhibit 8, Model 2 shows that the relationship between health insurance that included mental illness coverage and individual employee self-reported job anxiety was not significant (β = 0.03, p > .10). The results indicate that having health insurance that included mental illness coverage and

---

12 After excluding the twenty-three extreme cases to create a trimmed sample, the pattern of results for the resulting regression models was the same for Study B’s full (n = 508) and trimmed (n = 485) tardiness samples.

13 We excluded the twenty-three most extreme cases of absenteeism and conducted a similar analysis to that of tardiness with similar results.

14 Williams and Anderson, op.cit.

15 The correlation matrix for all of Study B’s variables is available from the first author upon request.
having health insurance that does not include mental illness coverage do not affect individual employee job anxiety. However, the results presented in Exhibit 9, Model 2 tell a different story. Specifically, the results show that there was a significant, positive relationship between health insurance that included mental illness coverage and individual employee company-documented tardiness for the preceding six-month period ($\beta = 0.27, p < .05$). Even when we used the trimmed tardiness sample (which excluded the worst offenders), health insurance that included mental illness coverage and individual employee company-documented tardiness for the preceding six-month period were positively related. These results indicate that individual employees who had health insurance that included mental illness coverage had significantly higher company-documented tardiness for the preceding six-month period than individual employees who had health insurance that did not include mental illness coverage.

Exhibit 10, Model 2 shows that the relationship between health insurance that included mental illness coverage and individual employee self-reported task performance was not significant ($\beta = -0.01, p > .10$). Thus, we conclude that health insurance that did not include mental illness coverage do not have differential effects on individual employee task performance.

Summary of Empirical Findings
Our studies’ results indicate that neither health insurance coverage, nor health insurance that included mental illness coverage had an impact on the self-reported job anxiety or company-documented absenteeism of individual employees.
from this particular company. Additionally, although Study A's results indicate that health insurance coverage does not affect individual employee tardiness, in Study B, we found that health insurance that included mental illness coverage was positively related to individual employee company-documented tardiness for the six-month period preceding the study. Thus, our results indicate that individual employees who had health insurance that included mental illness coverage had significantly higher company-documented tardiness for the preceding six-month period than individual employees who had health insurance that did not include mental illness coverage. Finally, Study A's results indicate that health insurance coverage had a positive impact on the self-reported task performance of this company's individual employees.

Limitations. We must add two caveats to these findings. First, as we have indicated throughout this report, Study A's and Study B's samples comprised customer-contact employees from sixteen healthcare and senior-services facilities owned and operated by Berkshire Healthcare. While we believe that our samples' healthcare and senior-services customer-contact employees have many similarities with customer-contact employees from hotels and other hospitality companies (for example, round-the-clock operations that require continuous staffing), it is possible that our results are idiosyncratic to healthcare and senior-services customer-contact employees (or, perhaps, just to those of this company). It is true, for instance, that the healthcare and senior-services customer-contact employees included in our studies' samples have specific levels of technical and professional training and education that is not found in many other endeavors, and this may set them apart from typical hospitality customer-contact employees. Second, we must note that Study A's sample is lopsided, with those having health insurance far exceeding those not having health insurance; that is, only 35 (5.9%) of Study A's respondents did not have health insurance. Because only a few individuals within Study A's sample do not have health insurance, our results may underestimate the impact of health insurance coverage on individual employees' job anxiety, tardiness, absenteeism, and task performance. However, even though we included numerous controls in our regression analyses, it is possible that something else about the thirty-five employees without health insurance is driving our results regarding task performance, and the absence of health insurance coverage is merely coincidental.
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