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Presenteeism and Health:

Exploring the Link Between Employee Productivity

And Common Physical and Mental Health Issues

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Abstract

This study explored how health issues impact self-reported employee productivity. Survey and clinical archival data were obtained from national samples of employees who had voluntarily used a telephonic nurse information service (N = 4,789) or a telephonic behavioral counseling service (N = 1,050; both services by Optum®).   A typical employer can have about 1 in every 10 employees use these kinds of health services in a one-year period. The results indicated that employees were about 30 percent less productive when first calling for assistance with health issues than after they had used the services. The results of regression analyses showed that productivity level at the time of first use of the health service could not be predicted to a useful extent from available demographic and clinical measures. The majority of employees reported positive health improvements (daily activities, stress, and overall well-being) after using the services. These health improvements were positively correlated with self-reported productivity gains. The bottom-line impact for employers is that these kinds of health issues are common and they involve significantly lower productivity during the health episode.

Presenteeism and Health:

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Employers have always been concerned about employee productivity. When employees are not on the job due to sickness or personal issues, the company loses their productivity. More recently employers are realizing that absenteeism is not the only cause of lost productivity. Although an employee may be on the job physically, he or she may not be performing up to their potential. This lack of productivity while on the job has been dubbed "presenteeism." Many factors (such as control, person-job fit, management style) have been examined that contribute to both absenteeism and presenteeism. Due to its applicability to 100 percent of employees, individual health is one area that merits more attention.

This study explored how personal health issues impact employee productivity. Data were obtained from national samples of employees who had voluntarily used services now commonly available to employees as part of their company's health benefit plan: 1) telephonic nurse information or 2) telephonic behavioral counseling. Each service operates a confidential, third party external, 24-hour by 7-day per week call center that is provided at no cost to employees. Access is offered through a toll-free phone number.

Goals of the Study

This study addressed five research questions (RQ).

RQ1: What is the level of self-reported work productivity for employees prior to use of call center health services?

RQ2: Is self-reported employee productivity before use of the call center health service related to personal or health factors (such as age, sex, type of clinical issue, or health problem severity)?

RQ3: To what extent does employee productivity change from before to after use of call center health information services?

RQ4: How does use of the call center health service affect the health of employees?

RQ5: Are improvements in employee productivity associated with improvements in employee health status?

<u>Overview of the Study</u>

This report features multiple studies of two call center health services. One service offers telephonic nurse information and the other service offers telephonic behavioral counseling. Replication studies are also presented that examine these same two services but during different time periods. These two kinds of services reflect auxiliary benefits commonly offered in today's employer benefits marketplace. As these are confidential services provided by third-party professionals who do not work for the employee's company, the fear that the company can find out about the employee's personal health problems is greatly minimized (compared to confidentiality fears for an internal company employee assistance program). Consequently, these services provide a context that is likely to yield information about employee productivity and absenteeism problems, issues that employees may not want to share with their company.

An applied naturalistic research design was used to gather archival clinical and survey data that was collected by a national provider of both services. Because the data were obtained from same provider, the data collection systems, research methodology and outcome survey items were the same for both nurse and behavioral counselor services. This allowed for the rare opportunity to directly compare findings between nurse and counselor services. The primary study samples included 4,789 nurse and 1,050 counselor cases, all from services in January through December of 1999. All cases feature clinical assessment information generated by the nurse or counselor and outcome information provided by the employee during follow-up structured interviews.

Method

The data for this study were collected as part of a larger dataset maintained by the service provider (Optum®). This company provides services to over 1,000 large employers and over 50 health insurance plans (who in turn provide the services to their employer clients).

The Nurse Health Intervention Service

During this study, Optum nurses were available by telephone 24 hours a day, 7-days a week as an employee benefit offered at no cost to enrolled employees (and their families). Registered nurses answered all of the calls. They addressed the person's symptoms, past medical history, and current health care situation. The nurses usually offered information about relevant health issues and discussed options for possible use of available medical services and self-care techniques. The average nurse call lasted about 7-10 minutes. For most employers, the total number of callers to the service in a one-year period represents about 10% to 15% of the number of covered employees. Of these callers, on average about 60% are classified as symptom-based clinical callers who have immediate health care needs, the other 40% of callers are seeking general health information or member benefits assistance. Usually about two-thirds of all callers are employees from the company sponsoring the service and about one-third of callers are the spouse or another family member of the employee. Thus, a typical employer providing this kind of nurse information service would have roughly 6% of their employees call with clinical health symptoms in a one-year period (i.e., 13% overall use rate X 60% clinical symptom-based type calls X 66% employee status).

The Counseling Health Intervention Service

Optum behavioral counselors were available by phone 24-hours a day, 7-days a week as an employee benefit offered at no cost to employees (and their families). Masters level staff answered all calls. Sessions usually included a detailed problem assessment process and

discussion of appropriate options for addressing the caller's issues. Some callers (about 10%) had an additional one to three counseling sessions conducted in-person with an affiliate counselor located near the caller's place of residence. Depending on the severity and urgency of the issue, some callers also were referred to counseling services provided by their health care insurance benefit. Other participants called or visited Optum legal and financial consultants. The average person had 1.4 sessions with a counselor over a 1 to 3 week period. For the typical employer, the total number of callers to the counselor service in a one-year period represents about 4% to 8% of the number of covered employees. Of the callers, usually about 85% are employees from the company sponsoring the service and about 15% are the spouse or another family member of the employee. About 85% of callers are for clinical issues and 15% for member services information. Thus, a typical employer providing this kind of behavioral counselor information service would have roughly 4% of their employees call with clinical symptoms in a one-year period (i.e., 6% overall service use rate X 85% clinical symptom-based calls X 85% employee status).

<u>Selected Study Sample</u>

The population of users for both the nurse and the counselor samples was drawn from a larger nationwide population of employees with access to Optum NurseLine, Optum Immediate Access (counselors), or Optum Care24 (a combination of nurse and counselor services). Access to these services was based on group membership, through an employer or health plan. The services were not available for individual purchase. During the study year, Optum received over one million calls for service. A routine part of the service includes follow-up with a quasi-random sample (10%) of the users with clinical issues. Those who participated in the follow-up had two sets of self-report data: One at the time of their clinical contact and one at the follow-up interview. These callers who participated in the routine satisfaction surveys were used for this study. The specific sample was limited to individuals who met certain survey process quality

criteria, including: having a valid home phone number, being over 18 years old, and, for counselor cases, giving permission to be called for the follow-up survey. The sample was then further segmented by taking only those callers who reported being employed, were between the ages of 18 and 65, and had valid responses to all the demographic data, clinical variables, and follow-up outcome survey measures selected for this study.

Sample Characteristics

In this study, the nurse call service sample had 4,789 callers and the behavioral counselor call service sample had 1,050 callers. Both samples were comprised of approximately 70% females and 30% males, which is typical for these kinds of services. The average age was about 36 years. Age ranged from 18 to 65, with the majority of callers being between the ages of 26 and 45 (see Table 1).

---- Insert Table 1 ----

Profile of Nurse Callers. The employees who called the nurse service had a variety of symptoms. The nurse identified the symptoms after listening to the person's description of their condition. The top 11 most common clinical symptom guidelines for this sample were: Abdominal pain (6.7%), back pain (4.8%), cough (4.1%), sore throat (4.0%), chest pain (3.8%), headache (2.9%), vomiting (2.6%), diarrhea (2.6%), sinusitis (2.3%), cold/upper respiratory infection (2.1%), and fever (1.7%). These 11 conditions accounted for about a third of all cases, with the remaining 64.9% of cases distributed over more than 200 other clinical topics.

The severity level of the problems facing the nurse callers included the categories: Do nothing/don't know, doing self-care at home, calling a doctor, going to a doctor's office or clinic, going to urgent care center or outpatient services, going to the emergency room, or calling 911 emergency medical services. For this study, the level of clinical problem severity was assessed at three time points for each caller. The first assessment was a self-report by the caller of what he or she had planned to do for their issue. At the start of the call, the nurse asked where the

person had planned to seek care for their issue if they had not called the nurse. The second

measure of clinical problem severity was the nurse's recommendation at the end of the call. At

the end of the call, after using of a computerized medical database and the nurse's own clinical

expertise, the nurse offered his or her opinion as to the most appropriate action plan. (Note that

nurses routinely also educated callers to the options for the next level of care if the caller's

symptoms were to worsen after the call.) The third measure of problem severity was the self-

report of the caller. This data was obtained at the follow-up interviews conducted a few days

after the close of the clinical episode. One question asked the caller what he or she had done for

care after speaking with the nurse. If several different actions were taken after the call, only the

action of the highest severity level was recorded (e.g., when the caller reported that first they did

self-care and then went to a doctor's office, then a doctor visit was coded as the outcome).

Table 2 lists the percentage of nurse callers in each severity category for all three

measures. A range of severity was exhibited at each time point. In this study, the callers were

fairly evenly distributed across the categories of did self-care at home, called a doctor, visited a

doctor office of clinic, or went to the urgent care or used emergency services.

---- Insert Table 2 ----

Profile of Counselor Callers. Employees called the counseling service for a variety of

clinical reasons. The type of problem a caller had was determined by the judgement of the

counselor. A clinical database routinely tracks all callers for the presence or absence of

problems in five basic categories. In this study, the most common problem area was personal

and daily living issues (43%), which includes marital relationships, close relationships, legal

problems, financial issues and family care. Mental health issues, such as depression and anxiety,

were also common among employees (36%). Physical health issues (10%), individual work

problems (16%) and organizational level work problems (4%) were also experienced. A caller could have issues in more than one of the categories.

There was also a clinician-assessed severity level classification for each problem a caller had. If the person had more then one problem (on average, there were 1.4 problem types per caller), only the problem with the highest severity level was retained for this study. In this sample, 8% of callers had a high severity problem (defined as needing immediate assistance that same day), 71% of callers had a moderate severity problem (needing help within the next seven days) and 20% of callers had a low severity problem (not needing assistance within seven days).

Problem severity of the counselor callers was also represented in two other self-report measures, one collected at start of the call and the other collected after the end of the clinical episode. Similar to the nurses, the counselors asked the callers, at the beginning of the call, what they had planned to do for care if they had not called the service. Similar to the nurse service, the follow-up interviews asked employees what they had done for assistance with their problem after they had finished using the counseling call service. As can be seen in Table 3, there was a range of severity as represented in the two self-report measures. In general, the distribution of the two measures was similar.   The most common sources of care were: Self-care or waiting (doing nothing), using the call service's own counselors (on the phone or in-person), or using of outpatient mental health services from insurance providers. The employees calling the counseling service rarely used medical care providers.

---- Insert Table 3 ----

Summary. The nurse and counselor services provided a rich mix of clinical participants. Callers problems ranged from low severity (self-care or community services), to moderate severity (doctor calls/visits or phone counseling), to high severity (ER visit or outpatient mental

health treatment). Life-threatening or crisis level health issues were rarely experienced among the employees in this study. This composition of health problem types and clinical severity is typical for a population of working adults.

<div align="center">Results</div>

The results are presented in six parts, corresponding to the six research questions.

RQ1: What is the level of self-reported work productivity for employees prior to use of call center health services?

This issue was addressed in this study by examining the distribution of employee self-rated productivity before their use of the call service. The workplace section of the follow-up survey included the following instructions: "The next few questions address the effect of the Optum service on your work life." And then:

"On a scale of 1 to 10 where 1 is the least productive you have ever been and 10 is the most productive you have ever been. How productive were you when you first called Optum?"

The next survey item stated: "Using the same 1 to 10 scale, how productive are you now (after calling Optum)?"

Table 4 displays the distribution of these ratings for productivity level for the nurse and counselor services. The mean productivity rating for before use of the service was 5.54 for nurse cases and 5.66 for counselor cases. Thus, the average caller to both services reported having a productivity level just above the mid-point of the rating scale. Examination of the distribution of ratings reveals that both of the samples exhibited the full possible range of ratings from 1 to 10. Thus, although most callers to these health services were at a moderate level of productivity, some callers were very unproductive and yet others were highly productive.

<div align="center">---- Insert Table 4 ----</div>

In general, the two services had very similar average ratings on productivity. However, there is an interesting difference in the shape of the two distributions of ratings. In the nurse service there was a tri-modal pattern (peaks at ratings of 1, 5, and 10) whereas the ratings in the counselor service had a more normal bell-curve shaped distribution (single peak at 5). This pattern may reflect a qualitative difference in the nature of clinical populations using the two services. Compared to the counselor callers, the nurse callers included a relatively higher percentage who had acute health conditions that can be very disruptive to work productivity (e.g., pain, diarrhea, injury) as well as a relatively higher percentage who had minor conditions that have less of an impact on productivity (e.g., colds, cough).

RQ2: Is self-reported employee productivity before use of the call center health service related to personal or health factors (such as age, sex, type of clinical issue, or health problem severity)?

A common approach to health care cost management is to identify the most costly illness conditions and then to direct resources to address these problems. By extension, can the productivity of employees be predicted from the nature of their clinical issues or by other demographic factors? If so, the predictive characteristics could be used to target employees with low productivity and then apply interventions aimed at boosting their productivity. In this study, the level of productivity before use of the health service was tested for its statistical relationship with employee age and sex, presence of the different clinical problem types, and level of problem severity.

Prediction of Productivity Level of Callers to Nurse Service

For the nurse caller sample, almost all of the variables tested had statistically significant but very weak correlations with productivity level for the period before calling the health service (rs = .03 to .15; see Table 5). Lower productivity was associated with older age, being male,

having one of the clinical problems most commonly represented in this population of callers

(except for chest pain), and with having a health problem of high severity (*particularly when*

severity was assessed as the action taken after calling the nurse). To determine which of these

variables had the strongest unique association with productivity, a stepwise multiple regression

analysis was also performed. The results of this regression analysis found almost identical

results to the zero-order correlation findings, as all of the same variables were significantly

associated with before use productivity (see Table 5). It is important to note that the very large

sample size used in this study renders correlation coefficients that are small by most standards to

be statistically significant. Therefore, a discussion of the effect size is relevant to interpreting

these results. The amount of variance in productivity for nurse callers that was predicted by this

set of factors in this regression analysis was only 7% (and thus 93% of the variance in

productivity was not predicted).

---- Insert Table 5 ----

Prediction of Productivity Level of Callers to Counselor Service

For the counselor caller sample, several factors had small but statistically significant

correlations with employee productivity ratings for period before calling the counselor (see Table

6). Lower productivity was associated with having certain kinds of problems, including mental

health problems (r = -.13), physical health problems (r = -.10), and individual level work

problems (r = -.10) and with having problem of greater severity (measures of counselor assessed

at start of case and employee self-report of services used after calling the counselor; both r = -

.09). To determine which of these variables was the most related to productivity, a stepwise

multiple regression analysis was performed. The results of this analysis found lower

productivity was associated most with younger age, having mental health problems, physical

health problems and with having a higher severity problem (as assessed by the action taken after use of the counselor service). Only 3% of the total variance in productivity level of counselor service callers was accounted for by this set of factors in the regression analysis.

---- Insert Table 6 ----

The strongest finding from both the nurse and counselor samples was that the employees who had actually used more urgent and higher cost health providers after calling the service also had the lowest levels of productivity before their use of the call service. It makes intuitive and logical sense that lower work productivity would be associated with health issues that are perceived as more serious. In this sense, these results provide some construct validity for the measure of productivity used in this study. These findings also offer empirical support for a basic link between employee health and work productivity.

RQ3: To what extent does employee productivity change from before to after use of call center health information services?

The average rating for nurse callers and counselor callers was greater than 8 on the 1 to 10 rating scale. Comparison of the average productivity ratings for before and after use of the health service found increases that were statistically significant (paired t-tests at the $p < .001$ level). The results represent a 35% average *gain* in productivity level for nurse callers (8.54 minus 5.54 = 3.00 and 3.00 divided by 8.54 = 35%). Similarly, the results indicate a 31% average *gain* in productivity level for counselor callers (8.15 minus 5.66 = 2.49 and 2.49 divided by 8.15 = 31%).   These findings are averages that apply to the entire sample of employees who called the nurse service or the counselor service.

Another measure of change in productivity is to segment the sample into groups of employees with a decrease, no change, or an increase in productivity. This was accomplished on

a case-by-case basis, by subtracting the 1-10 productivity rating for <u>before</u> calling the service from the 1-10 productivity rating for <u>after</u> calling the service. This method classified employees into three groups: Those with a decline in productivity, those with no change, and those with an improvement. Using this measure, almost none of the employees had a decline in their productivity after they had used the call service (3% for nurse callers and 1% for counselor callers). Less than a third of employees reported no change in their productivity after use of the call service (30% for nurse and 27% for counselor). The majority of callers had higher productivity after use of the service than they did before use of the service (67% of nurse callers and 72% of counselor callers). *Among only those with an increase in their productivity,* there was 52% average gain in productivity level for nurse callers (After 8.85 – Before 4.23 = 4.62 Increase and 4.62 divided by 8.85 = 52%) and a 43% average gain in productivity level for counselor callers (After 8.21 – Before 4.70 = 3.51 Increase and 3.51 divided by 8.21 = 43%).

It is important to note, however, that the results in this study do not provide direct evidence that the use of the health call services is what <u>caused</u> these improvements in productivity. The reader will recall that the research methodology for this study involved two questions, both asked at follow-up shortly after use of the service, in which the employee estimated their productivity level for before and after use of the service. Even though the instructions asked the employee to consider the effect of the service on their work life, it did not specifically ask if a change in productivity level was caused by use of the service. Thus, a change in productivity level may have been due to the service, due to other factors such as natural health improvement, or due to some combination of the service and other factors.

RQ4: How does use of the call center health service affect the health of employees?

As part of the follow-up surveys, several items asked the employees about how their use of the health service had affected their health and personal lives. Specifically, the survey instructions were: "Which of the following changes have you experienced because of using

Optum's services? Please answer Yes, No or Not Applicable" And then the following

statements:

"Improved performance of routine daily activities (examples: work, chores, eating,

conversations)",

"Decreased stress level", and

"Improved overall health and well-being".

Employees in the nurse sample reported that because of using the nurse service, 53% had

improved performance of routine daily activities, 66% had decreased their level of stress, and

71% had improved overall health and well-being. Similar results were obtained for employees in

the counselor sample. Because of using the counselor service, 67% reported improved

performance of routine daily activities, 75% reported decreased their level of stress, and 73%

reported improved overall health and well-being. Thus, the majority of both the nurse and

counselor service users reported positive changes in three basic aspects of their health.

Moreover, if one of these health outcome was experienced, it was likely that the others were also

experienced (significant positive correlations were found between all three health outcomes for

both the nurse and counselor samples – see Table 7; $\underline{r}$s ranged from .38 to .54).

---- Insert Table 7 ----

RQ5: Are improvements in employee productivity associated with improvements in

employee health status?

To test for a link between changes in productivity and heath outcomes, various

correlational analyses were performed. Results of these tests indicate that for both the nurse and

counselor callers, productivity improvement and health outcomes were indeed positively

associated ($\underline{r}$s range from .08 to .15 for nurse and .19 to .26 for counselor; see Table 8). All of

these associations remained significant even when statistically controlling for the effects of age, sex and clinical factors on productivity and absenteeism in separate stepwise regression models (all results $\underline{p} < .05$; test statistics not presented). These findings offer some empirical support for the argument that employee productivity is related to improvements in the personal health of employees.

Discussion

This study explored how personal health issues impact employee productivity. Data were obtained from two self-report survey studies with national samples of over 6,000 employees who had voluntarily used a telephonic nurse information service or used a telephonic counselor employee service in the year 1999.

The results indicated that employee users of both kinds of services were initially performing at less than desired level of productivity (about a 5 on a 1 to 10 rating scale). Thus, while experiencing their health issue, employees were less productive than desired. The results of regression analyses showed that the initial level of productivity at the time of first use of the health information service was not predicted very well by the available demographic and clinical measures. After use of the health service, employee users of both kinds of health services were performing at about an 8 on the same 1 to 10 scale of productivity level. For the employees who had used the nurse service, there was an average increase of 35% in productivity level. For the employees who had used the counselor service, there was an average increase of 31% in productivity level. In addition, the majority of both the nurse and counselor service users reported positive changes in three basic aspects of their health: improved performance of routine daily activities, decreased stress level, and improved overall health and well-being. These three health outcomes were significantly and positively correlated with improved productivity. These findings support the argument that workplace performance is associated with improvements in the personal health of employees.

In sum, the results of this study indicate that employees with common mental and physical health issues appear to have a productivity deficit associated with the health episode. The demonstration of a statistical link between productivity and health should lead employers to consider offering services that improve the overall health of employees in order to improve the productivity of employees.

END

Table 1

Sample Characteristics

Variable	Nurse	Counselor
Employees in Survey	4,789	1,050
Sex		
Male	29%	29%
Female	71%	71%
Age		
Mean (years)	36.88	36.03
SD	(10.95)	(8.76)
range	18-65	18-63
18-25 years	16%	12%
26-35 years	34%	38%
36-45 years	26%	35%
46-55 years	18%	14%
56-65 years	6%	1%

Table 2

Problem Severity by Source: Nurse Sample

Severity Level	Service Type	Start Call %	End Call %	After Call %
8	Hospital	–	–	0.6
7	911 Emergency Medical	0.3	3.3	1.1
6	Emergency Room/Poison	18.9	13.6	16.4
5	Urgent Care/Outpatient	8.6	3.4	5.6
4	Medical Doctor Office	10.5	13.9	27.1
3	Call Medical Doctor	22.8	53.0	21.5
2	Self-Care	26.9	12.7	20.5
1	Do Nothing/Don't Know	12.0	–	7.2
TOTAL		100.0	100.0	100.0

N = 4789

Table 3

Problem Severity by Source: Counselor Sample

Severity Level	Service Type	Start Call	After Call
9	Hospital/Inpatient Mental-SA	0.3	0.7
8	ER or 911 Emergency Medical Service	0.7	0.4
7	Outpatient Mental Health Benefits	22.4	30.7
6	MD Office / Urgent Care / OP Medical	4.5	3.1
5	Optum counseling (EAP)	23.7	31.3
4	Non-benefits Services in community	17.8	2.9
3	Self care	11.2	15.0
2	Do Nothing	10.2	15.7
1	Don't Know	9.2	0.3
TOTAL		100.0	100.0

N = 1050

SA = substance abuse

OP = outpatient

EAP = employee assistance provider

Table 4

Self-Rated Productivity Before and After Use of Intervention: By Sample

| | Nurse | | Counselor | |
| | (N = 4789) | | (N = 1050) | |
Productivity	Before	After	Before	After
10 Highest	16.1	48.5	9.4	23.9
9	4.3	14.6	3.7	20.4
8	11.3	16.2	13.2	27.3
7	8.7	6.8	12.3	14.3
6	5.7	3.0	12.3	7.7
5	17.8	6.1	18.1	4.7
4	6.9	1.1	10.6	0.5
3	8.4	0.9	7.0	0.5
2	6.1	0.7	5.7	0.1
1 Lowest	14.8	2.0	7.7	0.7
TOTAL	100.0	100.0	100.0	100.0
Mean Rating	5.54	8.54	5.66	8.15
SD	(3.03)	(2.04)	(2.54)	(1.60)

SD = standard deviation

Table 5

Prediction of Productivity Level Before Use of Intervention Service: Nurse

Sample (N = 4798)

Variable	$\underline{r}$	Beta
Age	-.03*	-.05*
Sex	-.04*	-.05*
Problem Types		
Abdominal Pain	-.05*	-.05*
Back pain	-.06*	-.06*
Cough	-.09*	-.09*
Sore Throat	-.05*	-.06*
Chest Pain	-.01	-.01
Headache	-.05*	-.05*
Vomit	-.05*	-.06*
Diarrhea	-.07*	-.09*
Sinusitus	-.04*	-.05*
Cold (URI)	-.04*	-.04*
Fever	-.05*	-.06
Problem Severity		
Severity – self assessed	-.12*	-.06*
Severity – nurse assessed	-.11*	-.05*
Severity - action taken	-.15*	-.11*

NOTE: Sex coded as Male = 0 Female = 1.

Stepwise Multiple Regression: $\underline{R}$ = .26, $\underline{R}$ squared = .07,

$\underline{F}$ = 21.32, $\underline{p}$ < .001, $\underline{df}$ = 15, 4772

Table 6

Prediction of Productivity Level Before Use of Intervention Service:

Counselor Sample (N = 1050)

Variable	r	Beta
Age	.06	.07*
Sex	-.05	ns
Problem Types		
Personal Issue	-.01	ns
Mental Health	-.13*	-.12*
Physical Health	-.10*	-.07*
Individual Work	-.10*	ns
Organizational Work	-.01	ns
Problem Severity		
Severity – self assessed	-.01	ns
Severity – counselor assessed	-.09*	ns
Severity – action taken	-.09*	-.08*

Note: Sex coded as Male = 0 Female = 1.   * p < .05

Stepwise Multiple Regression; R = .17, R squared = .03,

F = 7.38, p < .001, df = 4,1049

Table 7

<u>Correlation of Improved Productivity and Health Outcomes After</u>

<u>Use of Health Intervention Services</u>

Outcome	(Yes)	2	3	4
Nurse Sample (<u>N</u> = 4789)				
1. Improved Productivity (67%)		.08	.12	.15
2. Improved Activities (53%)			.41	.54
3. Less Stress (66%)				.38
4. Improved Health (71%)				
Counselor Sample (<u>N</u> = 1050)				
1. Improved Productivity (72%)		.19	.26	.26
2. Improved Activities (67%)			.38	.47
3. Less Stress (75%)				.40
4. Improved Health (73%)				

Note: (Yes) = percentage with that outcome. Pearson <u>r</u> values in
table. All correlations significant at <u>p</u> < .01, two-tailed.