IBI Research Insights

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Finding the Elusive Lost Productivity for White-Collar Workers

- Linking Chronic Illness and Performance -

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April 2011

Synopsis: *White-collar workers represent a large and growing portion of the US workforce. The productivity of such workers is critical to most organizations, yet often very difficult to quantify, much less translate to dollars and cents. This Research Insights looks at self-reported data from a large US manufacturer that incorporated the HPQ-Select into its HRA, and draws connections between chronic health conditions, dimensions of job performance and lost-productivity. Results demonstrate the importance of self-reported data in gaining insights into how health impacts worker performance.*

Background

The most recent occupational outlook for the U.S. indicates a considerable increase in white-collar jobs, most notably professional and related occupational groups.[1] It is difficult to deny that white collar workers need to be a productive force in their companies for the U.S. to continue to be a strong economic factor in world markets.

The challenge of measuring health-related productivity in the white collar population has been vexing. Typically white collar workers don't have easily quantifiable output metrics – like their blue-collar manufacturing brethren – which makes quantification challenging. Thus, if we are to understand productivity in the white-collar population, we need to understand health-related job performance. And to understand health-related job performance, we need to understand the key components that influence the success of white-collar workers[2] at their jobs.

Chronic Health Conditions and Co-Morbidities

This *IBI Research Insights* draws on a sample of white collar workers taken from IBI's HPQ-Select database developed in IBI's work with a large member manufacturer. In this company, white-collar workers comprise 31% of the surveyed workforce (6,032 of 19,551 surveys). For this population, allergies are the most prevalent chronic condition (38%), followed by back/neck pain (21%) and high cholesterol (19%). Many of these conditions represent symptoms of work stress – particularly hypertension, obesity, depression, sleeping problems, and GERD/heartburn.[3]

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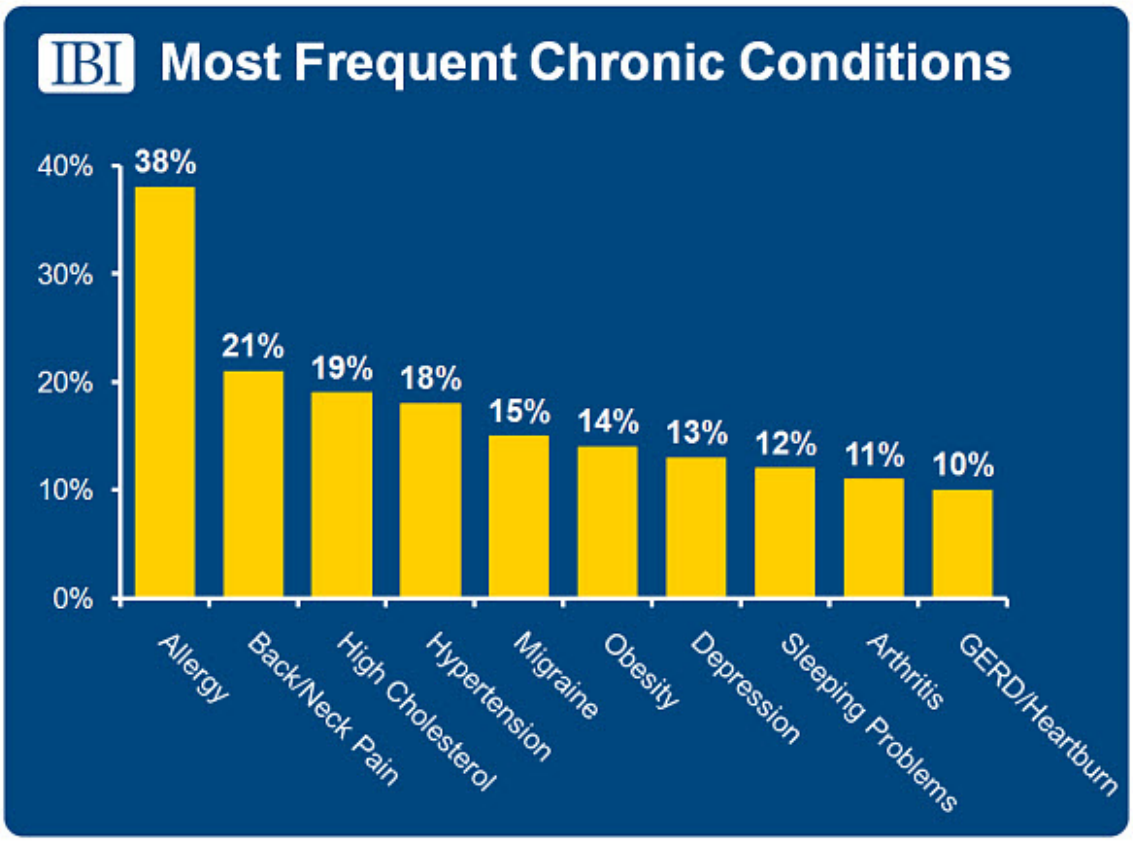
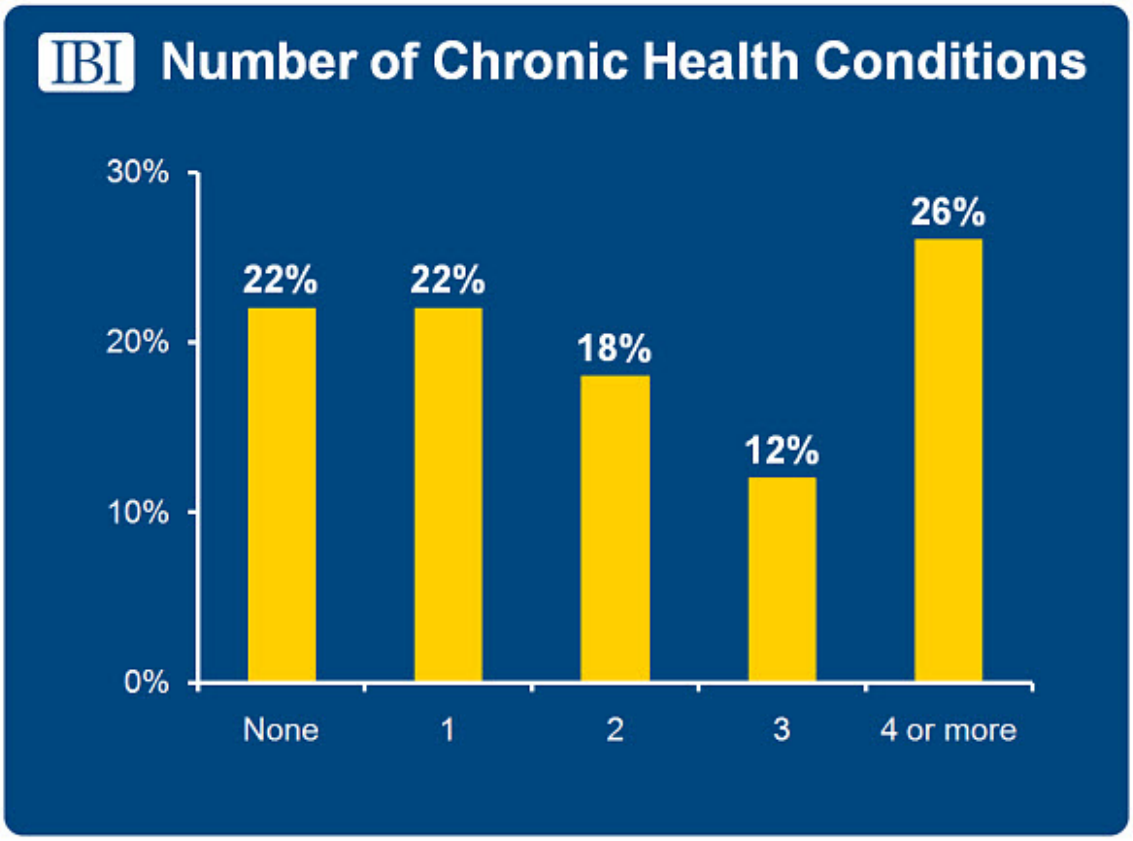
[1] Employment Projections: 2008-2018, Bureau of Labor Statistics, U.S. Department of Labor, USDL-09-1503, December 10, 2009. Chart 4, page 5. *www.bls.gov/news.release/pdf/ecopro.pdf*

[2] The following occupational groups are defined as "white collar" for the purposes of this analysis: executive, administrator, or senior manager (e.g., CEO, sales VP, plant manager); professional (e.g., engineer, accountant, systems analyst); Sales (e.g., sales representative, stockbroker, retail sales).

[3] Sandmark, H. and Renstig, M. Understanding long-term sick leave in female white-collar workers with burnout and stress-related diagnoses: a qualitative study. BMC Public Health 2010,10: 210. *http://www.biomedcentral.com/1471-2458/10/210*



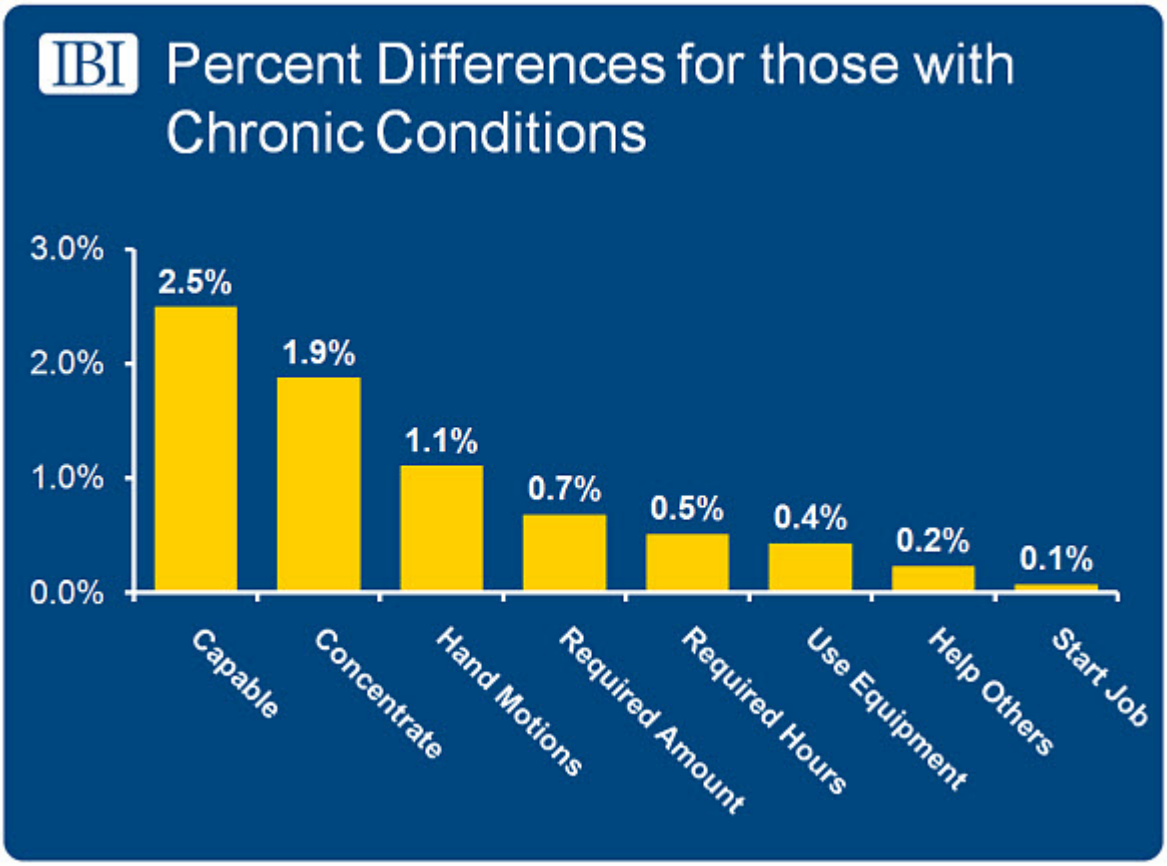
Chronic conditions don't stand alone. On average, these white collar workers have 2.6 chronic conditions, with more than a quarter having 4 or more. Fewer than a quarter have no chronic condition at all.



Job Performance and Lost Productivity

On-the-job performance is the link between chronic health and productivity. The health-risk appraisal used by this employer included the HPQ-Select[4] survey questions as well as a range of detailed questions around performance dimensions. Each of the survey respondents self-rated their job performance across the following eight dimensions on a 1 to 5-point scale.[5]

Capable: Feel you have done what you are capable of doing
Concentrate: Concentrate on your work
Hand motions: Repeat the same hand motions over and over again while working
Help others: Help other people to get work done
Required amount: Do the required amount of work on your job
Required hours: Work the required number of hours
Start job: Start on your job as soon as you arrived at work
Use equipment: Use your equipment (i.e., phone, pen, keyboard, computer mouse)



For this white collar sample, two dimensions – doing what one is capable of doing on the job and concentrating on one's work – are the two dimensions most affected by having any chronic illness. For the "capable" dimension, for example, there is a 2.5% difference in performance for those with at least one chronic illness compared to those with no chronic illness. If we simply focus on this performance dimension for illustration, this 2.5% difference in performance would amount to 6.5 days of under-performance over the course of a year.[6]

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[4] The HPQ-Select is an employee self-report survey instrument addressing chronic health conditions, absence lost time and health-related performance developed in partnership with Dr. Ronald Kessler of Harvard Medical School.
[5] The performance scales used a 1 to 5 scale where 5=All of the time 100, 4=Most of the time, 3=Half of the time 50, 2=Some of the time, and 1=None of the time '. The recall period was 28 days.
[6] For estimating performance lost time, we use 260 workdays in a year and subtract 2 absence days (the average absence in a year for this white collar sample). We then apply the 2.5% difference in performance for an individual

We also find that the number of chronic illnesses has a statistically significant influence on these two key performance dimensions for white-collar workers. For these two most important performance dimensions, as the number of chronic conditions increase, performance declines.

When we control for type of chronic conditions (across 29 chronic-condition classes), age and gender, we find that the following conditions significantly impact the "capable" performance dimension: pain, diabetes, heart failure, fatigue, anxiety, other emotional conditions and nicotine dependence. Notably, "other emotional conditions" are the leading driver of lower performance in this dimension, followed by pain. Research has shown that white-collar workers exposed to high job strain and inactivity at the job could effectively be encouraged to perform physical activity, preferably of high intensity, in order to reduce stress and increase energy.[7] These changes in behavior may lead to both a diminishment in the conditions (diabetes, fatigue, etc.) as well as a corresponding increase in job performance.

Translating Performance into Lost Productivity

If communications with CFOs on the impact of health-related job performance are to be effective, lost time associated with lower performance needs to be translated into financial lost productivity. In this example, if we take the estimated 6.5 days of reduced job performance over the course of a year and apply a $414 average daily salary and benefits for employees with chronic conditions, the lost-time cost to the employer would be $2,691 per white collar worker each year.

However, we know from research[8] undertaken by Dr. Sean Nicholson of Cornell University and his colleagues that the costs of absence and under-performance extend well beyond the value of salary and benefits. These additional lost productivity costs – developed in the form of multipliers –are a function of the ability to replace workers, the time value of output and the degree of team work. For a manufacturing firm like this one, a multiplier of 1.32 is applied to the salary and benefits to represent these additional costs to the employer. This increases the daily cost of lost productivity from underperformance to $546 per white-collar worker. Thus, the annual costs of 6.5 reduced performance days per white collar worker per year equal $3,549 per employee or $1.67 million for the employer's white collar workforce with chronic health conditions.

Commentary

As occupations with less tangible and measurable job outputs grow in the U.S., self-reported information about health-related job performance must become a bigger part of how employers quantify the impacts of poor health. A common fallacy is that white-collar workers, when faced with health problems resulting in absence or performance decrements, will simply work longer hours to make up the lost work time. There is little doubt that more hours worked simply will result in increasingly severe health-related absence and performance issues.

This analysis shows that there are two key dimensions of health-related performance for white-collar workers in this sample – capability in doing their jobs and their ability to concentrate on their work. Self-reporting tools will need to reflect specific performance elements as they vary by occupational group so that we can get more refined information on the real impacts of health on business relevant outcomes.

In June, IBI and researcher John Riedel, will publish a series of case studies on how employers have used self-report tools. Our focus is on how employers (and myriad employer vendors) are measuring the connection between health and productivity, and how they are using that information to inform their health and productivity strategies and initiatives. We provide ideas and examples across a range of measurement issues that can be easily translated into real world applications. Look for it.

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with chronic illness compared to an individual without chronic illness to the remaining work days of 258 to arrive at 6.5 days of reduced job performance.

[7] Hansen, A.M., Blangsted, A.K., Hansen, E.A., Sogaard, K. and Sjogaard, G. Physical activity, job demand-control, perceived stress-energy, and salivary cortisol in white-collar workers. International Archives of Occupational and Environmental Health. 2009. 83(2), 143-153. http://www.springerlink.com/content/yr30264580054553).

[8] Sean Nicholson, Mark Pauly, et al., "Measuring the Effects of Work Loss on Productivity with Team Production," Health Economics 15: 111-123 (2006).