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Original Research

Agreement among the Productivity Components of Eight Presenteeism Tests in a Sample of Health Care Workers

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ABSTRACT

Background: Presenteeism (reduced productivity at work) is thought to be responsible for large economic costs. Nevertheless, much of the research supporting this is based on self-report questionnaires that have not been adequately evaluated. **Objectives:** To examine the level of agreement among leading tests of presenteeism and to determine the inter-relationship of the two productivity subcategories, amount and quality, within the context of construct validity and method variance. **Methods:** Just under 500 health care workers from an urban health area were asked to complete a questionnaire containing the productivity items from eight presenteeism instruments. The analysis included an examination of test intercorrelations, separately for amount and quality, supplemented by principal-component analyses to determine whether either construct could be described by a single factor. A multitest, multiconstruct analysis was performed on the four tests that assessed both amount and quality to test for the relative

contributions of construct and method variance. **Results:** A total of 137 questionnaires were completed. Agreement among tests was positive, but modest. Pearson r ranges were 0 to 0.64 (mean = 0.32) for Amount and 0.03 to 0.38 (mean = 0.25) for Quality. Further analysis suggested that agreement was influenced more by method variance than by the productivity constructs the tests were designed to measure. **Conclusions:** The results suggest that presenteeism tests do not accurately assess work performance. Given their importance in the determination of policy-relevant conclusions, attention needs to be given to test improvement in the context of criterion validity assessment.

Keywords: health, presenteeism, productivity, testing, work.

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Introduction

Presenteeism refers to decreased productivity and/or below-normal work quality when physically present at work [1]. Although there are still discussions about definitions [2], presenteeism is usually measured by one of a number of self-report instruments. It has received more attention in recent decades because of reports that presenteeism causes significant losses to businesses and to the economy as a whole [3,4]. In fact, presenteeism has been described as a “silent” but significant source of productivity loss that can cost organizations much more than absence from work [4,5].

Unfortunately, the use of self-report data, rather than more expensive direct measures, carries with it a number of problems. Presenteeism estimates require the measurement of work outputs that are often not clearly specified [2,6], are often difficult to quantify, and are not easily compared across disparate work roles and conditions. Moreover, self-reports of presenteeism are likely

influenced by bias due to method variance [2]. Method variance occurs when something inherent to the structure or presentation of the questionnaire produces the apparent statistical association between test items, as opposed to such being due to the relationship of the respective terms.

Within some of the presenteeism instruments, work productivity has been broken down into two components, quantity (i.e., amount of output) and quality (excellence of output) [7–10]. Notably, neither component is very clearly defined, thus making them vulnerable to imprecision-related errors and biases of several sorts, including method bias. Analyses such as Campbell and Fiske’s multimethod, multitrait approach [11], however, allow the “teasing out” of such method variance when faced with concepts such as amount and quality of work that are likely related, but not identical.

Although rarely addressed in the context of presenteeism, self-reports generally show poor validity [12]. In particular,

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self-reports of performance are notoriously inaccurate [13] and are vulnerable to a form of social desirability that reflects a general tendency of humans to place themselves in a good light in comparison with others [14,15]. It seems highly likely that our ego involvement in work performance would make us particularly susceptible to this form of bias.

In contrast to the measurement of absenteeism (the number of work-days missed), the estimation of presenteeism is somewhat more complicated and generally requires a subjective interpretation. Mattke et al. [6] reviewed 17 self-report tests of lost productivity and found a variation in formats, ranging from generic instruments to tests that were disorder-/condition-specific. The authors concluded that most of the instruments under study had been validated to some extent. It should, however, be noted that criterion validity, the association between self-report and a benchmark (criterion standard), was generally not assessed or was unimpressive in magnitude. Similar conclusions have been supported in two more recent systematic reviews [16,17]. Nonetheless, self-report tests of presenteeism continue to serve as the mainstay of publicly reported productivity studies, presumably because of lower costs and ease of data collection.

A final issue is that the reviews of presenteeism instruments in the last decade or so (i.e., from 2004 onward) [6,16–21] are based on studies that used all or most of the questions from each test and have thus included items that did not measure lost productivity. Rather, most of the items were often about the work environment, personal limitations, health, mental well-being, and other matters that are thought to provide relevant context. For example, one of the most frequently used self-report instruments, the general health version of the Work Productivity and Activity Impairment Questionnaire (WPAI) comprises six items [22,23], but only one of these can be said to measure presenteeism (also see [24]). That is, the respondents are presented with an 11-point scale (0–10) to answer a single question about the extent that health problems had affected work productivity. The remaining five questions covered employment status, time absent from work for health or for other reasons, hours actually worked, and the effect of health issues on nonwork activities. This issue similarly pertains to several presenteeism tests, but none of the aforementioned review studies excluded the non-presenteeism questions of any of the tests in their analyses. Thus, the findings of these reviews [i.e., 6,16–21] may be biased because they were focused to a meaningful degree on non-presenteeism test questions rather than on those items that specifically addressed productivity loss.

The goal of this study was to assess agreement among the more prominent presenteeism instruments using only those items from each test that deal directly with productivity. Specifically, the objectives were 1) to determine the inter-relationships of the productivity components of eight presenteeism instruments and 2) to assess the interplay of the two productivity subcategories, amount and quality, to allow the examination of the contribution of method variance to estimates of construct validity.

Methods

Participants

Eligibility for the study was restricted to persons actively employed/engaged as health care workers by Alberta Health Services within the Edmonton Zone of the Province of Alberta, Canada, who willingly chose to participate in the study. Participants were recruited via the managers/supervisors of enough clinical units to produce a subject pool comprising 494 health

care workers. That is, the pool comprised about one-third of the full complement of 1477 persons listed as health care employees in the zone. Respondents were recruited in two waves. The first group completed a self-report paper-and-pencil questionnaire that was distributed to workers via their supervisors. Each questionnaire was placed in a sealable, addressed envelope along with an information sheet that explained the procedure, confidentiality provisions, testing protocol, and the voluntary nature of participation. It was clearly stated that individuals could choose to not participate without consequence and that the employer would not see individual responses (the exception being the data specialist who extracted activity log data, who had access to such information in any case under strict confidentiality rules). Furthermore, respondents were asked to provide their names, activity log number (associated with on-the-job recording of patient-related work activity), and the name of the clinic where they were employed so as to allow database matching for a later study that is not reported here. It was made clear that such identifying information would be stripped from the file once the database records were merged.

The second recruitment wave involved Internet administration of the questionnaire. This happened because of a request from one of the health service areas (nutrition/dietary) where it was suggested that an online delivery would likely produce greater participation. Minimal changes in format were incorporated to accommodate the differences in mode of delivery. Notably though, the confidentiality component for the online version included the additional warning that responses were likely to be stored on a server in the United States and thus subject to the laws of that country, particularly those that allowed government access to any such recorded information. Notification of the survey involved group distribution of an invitation via email to health care workers within the study region, including an advance notice to those within the clinical area in question.

As a consequence of the wish of the hosts of this study to have their managers involved in the distribution of questionnaires and of our wish to use a questionnaire collection system that was anonymous, we did not seek personalized data on eligible nonparticipants.

Completion of the first wave of data collection (i.e., paper-and-pencil questionnaire completions) took place between April 11 and May 12, 2014. Data from the second wave (online completions) were collected between June 16 and July 26, 2014.

The Questionnaire

The findings from a systematic review of the psychometric properties of existing presenteeism tests [17,25] provided the information on test quality and utilization that served as the base for the selection of the instruments for the present study. Sixteen discrete instruments were examined in the review. The two that showed the highest frequency of appearance in the literature (the WPAI and the Health and Work Performance Questionnaire [HPQ] at 56% and 14% of studies, respectively) were retained for the present investigation (see Table 1). Note that the general health version of the WPAI was used here. Also retained were the Valuation of Lost Productivity Questionnaire (VOLP), Work Productivity Short Inventory (WPSI), Health and Work Questionnaire (HWQ), Lam Employment Absence and Productivity Scale (LEAPS), Endicott Work Productivity Scale (EWPS), and Quantity and Quality (Q-Q) on the basis of the relative strength of their psychometric properties (reliability, validity, and sensitivity to change). Note that the six-item version of the Stanford Presenteeism Scale, although it showed psychometric strength [25], was excluded because none of its items were deemed to be measures of productivity.

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