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Justification bias in self-reported disability: New evidence from panel data☆

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ABSTRACT

The relationship between health and work is frequently investigated using self-assessments of disability from social surveys. The complication is that respondents may overstate their level of disability to justify non-employment and welfare receipt. This study provides new evidence on the existence and magnitude of justification bias by exploiting a novel feature of a large longitudinal survey: each wave respondents are asked identical disability questions twice; near the beginning and end of the face-to-face interview. Prior to answering the second disability question, respondents are asked a series of questions that increase the salience of their employment and welfare circumstances. Justification bias is identified by comparing the variation between the two measures within-individuals over time, with the variation in employment status over time. Results indicate substantial and statistically significant justification bias; especially for men and women who receive disability pensions.

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1. Introduction

Understanding the relationship between health and work is central to labor and health economics research and crucial for the design of health policies, social welfare systems, and strategies for productivity and growth. This relationship is often investigated using self-assessments of health and disability from social surveys. However, there exists a legitimate concern that thresholds for reporting a work-limiting disability may vary systematically according to individual circumstances (Kapteyn et al., 2007). In particular, individuals without a paid job may overstate their health-related work limitations because of financial incentives, such as qualifying for a disability pension. It is also possible that social context and psychological factors compel the non-employed to use illness to rationalize their inability to fulfil a socially prescribed role (Shuval et al., 1973). This so called 'justification bias' implies that the estimated importance of health and disability on labor supply decisions is most likely inflated. To more precisely measure the role of health in economic decision making, it is therefore critical to ascertain the magnitude of justification bias and characterize the types of individuals for whom justification bias is largest. In this paper, we present new evidence on these issues.

Despite the long-running recognition and attention devoted to the issue of justification bias, there is conflicting evidence about its importance. In early investigations, Anderson and Burkhauser (1985, p.324) state "we are persuaded that self-reports of health are unsatisfactory measures", while on the other hand, Stern (1989, p.392) concludes that "standard disability measures are powerful and reasonably exogenous predictors of labor force participation". A decade later, Kerkhofs and Lindeboom (1995) and Kreider (1999) find substantial over-reporting of work limitations, whereas, Dwyer and Mitchell (1999) find no evidence in support of the justification hypothesis using an overall general self-assessed health indicator and only weak evidence of justification bias using self-reported work limitations. More recently, Benítez-Silva et al. (2004, p.649) are "unable to reject the hypothesis that self-reported disability is an unbiased indicator", while in contrast, Baker et al. (2004, p.1090) find "evidence that the error in self-reported chronic conditions is related to labor market status", and the results in Lindeboom and Kerkhofs (2009, p.1042) "show that justification bias is substantial and that failing to account for this may change estimation results considerably". Further recent evidence on the importance of justification bias can be found in Gannon (2009),

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Datta Gupta and Larsen (2010), Datta Gupta and Jürges (2012), and Gosling and Saloniki (2014).

We contribute to this diverse literature by using an approach that differs from previous studies. We exploit a unique feature of an Australian longitudinal survey in which disability status is self-reported twice in each wave using identical questions—once at the beginning and once at the end of the face-to-face interview.[1] This question identifies disabilities or health conditions that have lasted six months or more, restrict everyday activity, and cannot be corrected by medication. The second disability question is, however, preceded by a series of questions about employment and sources of income, including disability welfare. Therefore, it is likely that respondents are inadvertently 'primed' to consider these issues when reporting disability the second time. How survey design can induce or exacerbate misreporting of health and disability has received little acknowledgement in the justification bias literature, but it has been shown that responses to life evaluation questions are extremely sensitive to question-order effects (Deaton, 2012). Priming has also been used in economic experiments to increase the salience of certain concepts and issues (Benjamin et al., 2010; Callen et al., 2014; Cohn et al., 2015).

The second novel feature of our approach is that we fully utilize the panel dimension of our data by estimating fixed-effects (FE) regression models. Essentially, we investigate how within-individual changes in the variation between the two self-reported disability measures correlate with within-individual changes in employment status. This modelling approach allows us to control for all time-invariant factors that influence reporting behavior, such as survey design and cognitive ability.

The FE results demonstrate that non-employed respondents and disability pension recipients are significantly more likely to exaggerate their level of disability. For example, we find that conditional on the response to the disability question at the beginning of the interview, unemployed and out of labor force (OLF) males are 3.1 and 6.6 percentage points respectively more likely to report a disability at the end of the interview than are employed males. The corresponding effects are smaller for females (2.2 and 2.6 percentage points respectively). For men and women, effect sizes are larger for respondents receiving disability pension payments (including employed pension recipients), but are still substantial and statistically significant for unemployed and OLF respondents not receiving pensions.

2. Causes of justification bias

Justification bias is a form of state-dependent reporting, whereby the reporting of self-assessed disability (or health) is systematically related to one's employment status. Most commonly, justification bias is the tendency for non-employed individuals to over-report their disability level, relative to their true or latent disability, in order to rationalize their economic inactivity. One potential motivation for this behavior is financial. For example, respondents who are fraudulently collecting disability-related welfare payments may overstate their disability. This inflation of self-reported disability may be motivated by a fear that their survey responses could be used by officials to re-assess their welfare eligibility.[2] Moreover, even if respondents understand that social surveys are not designed to assess or monitor welfare eligibility, they may feel a social desire to justify their welfare receipt to the interviewer.

Another possible cause of justification bias is the desire to conform to socially accepted norms associated with different states of employment (Myers, 1982). This desire induces inadvertent subtle changes of thresholds for equating poor health with a disability. For example, an employed respondent suffering migraines may not usually consider themselves as having a work-limiting disability, but after they become non-employed, their threshold for what they consider a work-limiting disability decreases and their assessment changes.[3] Another less conventional example is when an employed respondent under-reports their true disability. The social norm that workers are physically robust and capable of performing their paid roles can lead employed respondents to increase their disability reporting threshold.

Related to both the financial and social causes is the desire by respondents to present themselves in the best possible light during interviews. This drives respondents to exaggerate socially desirable behaviors or characteristics and underreport those that are less desirable. This is known as social desirability bias (Bowling, 2005). In our context, non-employed respondents (regardless of whether they receive a disability pension or not) may feel that a disability (or ill health) is a more socially acceptable reason for non-employment than either their failure to find employment or their choice to not work. Therefore, whether they are unemployed, early retired or out of labor force for other reasons, respondents who feel a social obligation to be working may inflate their level of disability. We would expect that this behavior is more likely to occur if the respondent's employment status is at the forefront of their mind or if they are conscious of the interviewer knowing their employment status.

The use of illness to legitimize one's failure to fulfil a socially prescribed role has been recognized for some time (Shuval et al., 1973). However, we still know very little about how the social pressure to justify non-employment varies across individuals, and in turn how this may lead to heterogeneity in justification bias. Given the traditional gender roles around providing income for the family, we may expect greater social pressure on males to use poor health as a reason for not working. Indeed males have been the sole focus in many studies that examine justification bias (e.g. Lindeboom and Kerkhofs, 2009). While few studies have explicitly examined gender differences, there is some evidence to suggest that over-reporting of disability among non-workers (aged 50–64) is higher for women than men (Kreider, 1999). This suggests that other, less obvious, social pressures may also be playing a role, and that further investigation into gender differences is important.

We may also expect to see differences in the tendency for justification bias by age, ethnicity, and education level. For example, non-employment may be more socially acceptable among older individuals near retirement age, than among younger individuals in the prime of their working lives. Cultural norms about contributing to household income and accepting welfare may differ, and there-

[1] Previous studies have exploited repeated health questions in surveys to investigate reporting bias and heterogeneity; see Crossley and Kennedy (2002), Clarke and Ryan (2006) and Lumsdaine and Exterkate (2013). In these studies the questions regard general health (rather than disability status) and either the survey mode (i.e. face-to-face versus self-completion), question wording, or available response options differ between the two survey questions. In addition, none of the studies use longitudinal data.

[2] Parsons (1982, p.83) observed that "The self-rated poor health group will be composed of two distinct subsets: those who would rate themselves in poor health in an incentive-neutral environment, and those who are induced by the economic environment to declare themselves in poor health."

[3] This mechanism is based partially on the concept that "disability" is not an objective binary health state, but more so a categorization that is based on self, doctor, or government evaluations and definitions. As Autor and Duggan (2006; p.85) write: "While certain medical conditions are clearly disabling, "disability" is not a medical condition. Disability is a dividing line (or zone) chosen by policymakers on a continuum of ailments affecting claimants' capability to engage in paying work and their pain and discomfort in doing so", and "Beyond the subset of clearly incapacitating medical and mental disorders, the extent of "disability" is ultimately a variable determined by policy."

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