## **Compensation Seeking and Disability After Injury:** The Role of Compensation-Related Stress and Mental Health

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### ABSTRACT

**Objective:** Claiming for compensation after injury is associated with poor health outcomes. This study examined the degree to which compensation-related stress predicts long-term disability and the mental health factors that contribute to this relationship.

**Method:** In a longitudinal, multisite cohort study, 332 injury patients (who claimed for compensation) recruited from April 2004 to February 2006 were assessed during hospitalization and at 3 and 72 months after injury. Posttraumatic stress, depression, and anxiety symptoms (using the Mini-International Neuropsychiatric Interview) were assessed at 3 months; compensation-related stress and disability levels (using the World Health Organization Disability Assessment Schedule II) were assessed at 72 months.

**Results:** A significant direct relationship was found between levels of compensation-related stress and levels of long-term disability ( $\beta = 0.35$ , P < .001). Three-month posttraumatic stress symptoms had a significant relationship with compensationrelated stress ( $\beta = 0.29$ , P < .001) as did 3-month depression symptoms ( $\beta = 0.39$ , P < .001), but 3-month anxiety symptoms did not. A significant indirect relationship was found for posttraumatic stress symptoms and disability via compensation stress ( $\beta = 0.099$ , P = .001) and for depression and disability via compensation stress ( $\beta = 0.136$ , P < .001).

**Conclusions:** Stress associated with seeking compensation is significantly related to long-term disability. Posttraumatic stress and depression symptoms increase the perception of stress associated with the claims process, which in turn is related to higher levels of long-term disability. Early interventions targeting those at risk for compensation-related stress may decrease long-term costs for compensation schemes.

J Clin Psychiatry 2015;76(8):e1000–e1005 dx.doi.org/10.4088/JCP.14m09211 © Copyright 2015 Physicians Postgraduate Press, Inc.

Submitted: April 22, 2014; accepted August 1, 2014. Corresponding author: Meaghan L. O'Donnell, Australian Centre for Posttraumatic Mental Health, Level 3, Alan Gilbert St, 161 Barry St, Carlton, VIC, 3053, Australia (mod@unimelb.edu.au). I njury is responsible for an estimated 12% of the global burden of disease and will account for 1 in 5 healthy life-years lost worldwide by 2020.<sup>1</sup> In many countries, people injured in 2 of the commonest settings—on the road and in the workplace—have access to compensation benefits. The central aim of compensation schemes that distribute these benefits is to return injured persons to preinjury levels of health. However, much research claims to find a negative association between seeking compensation and recovery from injury.<sup>2</sup> There is an urgent need to understand why claiming a compensation benefit is associated with poor health outcomes.

Virtually all previous quantitative research in this area has focused on establishing an association between seeking compensation and poor health outcomes. Few studies have analyzed what factors may explain this association.<sup>3</sup> Qualitative studies have suggested that the process of seeking compensation is inherently stressful, which may be associated with poor health outcomes.<sup>4,5</sup> In one of the first quantitative studies to examine the relationship between compensation-related stress and health outcomes, our research group recently identified that aspects of the claims process were stressful to some people and that high-stress claimants had significantly higher anxiety, depression, and disability and lower quality of life than nonstressed claimants.<sup>6</sup>

In the aftermath of serious injury, a wide variety of psychiatric disorders may develop<sup>7</sup> that contribute significantly to high levels of disability.<sup>8,9</sup> Such pathogenesis raises the question as to whether there is a relationship between an individual's psychological response to injury, the experience of stress associated with the compensation seeking, and later disability. If stress associated with seeking compensation is related to disability after serious injury, psychiatric symptoms may increase the risk of experiencing the claims process as stressful, which in turn may drive disability.

The aim of this study was to examine the relationship between the stress associated with claiming compensation and long-term disability. We wanted to identify if early psychiatric symptoms increased the risk of experiencing the claims process as stressful and whether this indirectly contributed to higher levels of disability. We examined data from a 6-year longitudinal cohort study of injury patients and tested a model that temporally sequenced 3-month psychiatric symptoms, the perceived stress associated with claiming compensation, and 72-month disability, while controlling for characteristics about the injury and premorbid levels of disability.

#### METHOD

### Participants

Injury patients admitted to 1 of 4 level 1 trauma services in Australia from 2004 to February 2006 were eligible for the study if they were aged between 16 to 70 years, provided that they were proficient in English and had experienced an injury that required hospitalization for greater

- The process of seeking compensation is inherently stressful, and this stress can lead to worse rehabilitative outcomes.
- The risk of finding the compensation process stressful is increased in those experiencing higher levels of posttraumatic stress and depressive symptomatology.
- Early psychological interventions have the potential to mitigate against the risks from both of these identified factors.

than 24 hours. Patients who were suicidal or psychotic at the time of recruitment, or had experienced a moderate to severe traumatic brain injury, were ineligible. Those with serious spinal cord injuries were not admitted to the study hospitals. Participants were randomly selected using an automated procedure that was stratified by duration of stay, to remove potential selection bias toward individuals who had longer durations in hospital. All participants provided written informed consent. The study gained approval from human research ethics committees at each hospital and the University of Melbourne, Melbourne, Victoria, Australia.

Data were collected prior to discharge (baseline) and again at 3 months and 72 months as part of a larger study, the Australian Injury Vulnerability Study. In total, 1,590 patients were approached, and 1,048 completed the baseline assessment. Of these, 904 (86%) completed the 3-month assessment, and 616 (59%) completed the 72-month assessment. At 72 months, 332 participants indicated that they had been involved in a compensation claims process associated with the original injury; they constitute the analytic sample for this study. Descriptive data regarding the sample are presented in Table 1.

Individuals who refused to participate in the study did not differ from participants in age, gender, length of hospital admission, or injury severity. Those who completed the 72-month assessment did not differ from noncompleters in gender, length of stay, Injury Severity Score (ISS), or number of days in the intensive care unit (ICU) although they were younger (mean = 36.1 vs mean = 39.5 years, P < .001), had higher premorbid disability (mean = 9.6 vs mean = 6.8, P = .003), had lower income (mean = \$29,483 vs mean = \$33,590, P < .001), and were more likely to be unemployed (15.0% vs 7.7%, P < .001).

#### Measures

**Disability.** Disability was measured with the World Health Organization Disability Assessment Schedule II (WHODAS II).<sup>10</sup> The WHODAS II was administered during the hospitalization to assess premorbid disability (ie, 2 weeks prior to injury) and at 72 months to assess long-term disability. (See supplementary material for more descriptive information about measures.)

*Injury characteristics.* The injury characteristics included ISS,<sup>11</sup> duration of stay in the ICU, duration of stay in the hospital, and whether patients were discharged to a

#### Table 1. Characteristics of a Sample of Injury Patients Who Claimed Compensation, Including Preinjury, Injury, and Claim Details (N = 332)

Variable	Value
Age, mean (SD), y	39.0 (13.0)
Gender, male, %	70.8
Relationship status, %	
Married/living together	47.3
Single	52.7
Mechanism of injury, %	
Motor vehicle accident	84.3
Fall	6.6
Assault	0.6
Work	6.6
Other	1.8
Preinjury disability, mean (SD)	
WHODAS II	2.1 (3.6)
Injury characteristics, mean (SD)	
ISS	12.1 (8.2)
Length of stay, d	13.7 (14.8)
Discharge to rehabilitation, % (n)	30.1 (100)
Intensive care unit stay, d	1.1 (3.4)
Psychiatric symptoms at 3 months, mean (SD)	
Clinician-Administered PTSD Scale	19.4 (19.2)
HADS (depression)	4.7 (3.9)
HADS (anxiety)	5.6 (4.2)
Disability at 72 months, mean (SD)	
WHODAS II	8.1 (9.7)
Compensation scheme, % (n)	
Transport accident (Victoria)	60.8 (202)
Workers' compensation (Victoria)	10.5 (35)
Transport accident (South Australia)	9.3 (31)
Workers' compensation (New South Wales)	6.9 (23)
Transport accident (New South Wales)	5.4 (18)
Workers' compensation (South Australia)	5.4 (18)
Other	1.5 (5)
Abbreviations: HADS = Hospital Anxiety and Depression Severity Score, PTSD = posttraumatic stress disorder. S	n Scale, ISS = Injury SD = standard

Severity Score, PTSD = posttraumatic stress disorder, SD = standard deviation, WHODAS II = World Health Organization Disability Assessment Schedule II.

rehabilitation facility. The injury characteristics data were collected during hospitalization.

**Prevalence of psychiatric disorders.** The Mini-International Neuropsychiatric Interview (MINI, version 5.5)<sup>12</sup> was used to determine the prevalence at 3 months postinjury of major depressive episode (MDE), panic disorder, social phobia, posttraumatic stress disorder (PTSD), and generalized anxiety disorder (GAD). The MINI is based on the *DSM-IV* and the *ICD-10* classifications of mental illness. MINI interviews were conducted at 3 months over the telephone, and the interviews were audio recorded. Five percent of interviews were reassessed by a blinded, independent assessor, and the diagnostic consistency across all diagnoses was 0.99.

**Posttraumatic stress symptoms.** The Clinician-Administered PTSD Scale for *DSM-IV* (CAPS)<sup>13</sup> was used to measure the presence and severity of posttraumatic stress symptoms at 3 months. The CAPS interviews were conducted at 3 months over the telephone, and the interviews were audio recorded. Five percent were reassessed by a blinded, independent assessor, and the diagnostic consistency in the presence of disorder was 1.00.

*Anxiety and depressive symptoms.* The Hospital Anxiety and Depression Scale (HADS)<sup>14</sup> was used to measure anxiety

## Figure 1. Structural Relationship Between 3-Month Posttraumatic Stress Symptoms Severity, Depression Severity, and Anxiety Severity and Compensation Stress and Disability at 72 Months After Injury<sup>a</sup>



<sup>a</sup>Solid black lines indicate significant β weights, dashed lines indicate nonsignificant β weights, and gray lines represent indicator measures for latent variables.
\*P<.005.</p>

Abbreviations: ICU = intensive care unit, ISS = Injury Severity Score.

and depressive symptoms at 3 months. This self-report measure was sent to participants at 3 months postinjury and returned in reply-paid envelopes.

Compensation stress. Seven questions were employed to garner information about the extent to which participants experienced specific aspects of the claiming process as stressful. Each of the 7 questions was scored on a 6-point Likert scale ranging from 0 (not stressful) to 5 (extremely stressful). For more information about the design and validity of these questions, see Grant et al.<sup>6</sup> Specifically, the questions assessed stress associated with perceptions of (1) understanding what was required of the claimant to lodge and manage the claim; (2) the amount of time the compensation organization took to deal with the claim; (3) the level of respect and dignity with which claimants were treated by the compensation organization; (4) the fairness of the claims process; (5) the opportunities to be heard by the compensation organization; (6) the number of medical assessments or examinations required; and (7) the amount of compensation received. These questions were administered over the telephone at 72 months.

### **Data Analysis**

We identified 7 key variables of interest: 3 observed variables and 4 latent variables (see supplementary material for more details). The observed variables were posttraumatic stress symptom severity (the total CAPS score), depression symptom severity (the total score of the depression subscale of the HADS), and anxiety symptom severity (the total score of the anxiety subscale of the HADS), measured at 3 months. Injury characteristics, compensation-related stress, premorbid disability, and disability at 72 months were constructed as latent variables. *Injury characteristics* was calculated using ISS, number of days of hospital admission, number of days in the ICU, and whether the participant was discharged to a rehabilitation facility (yes/ no). *Compensation-related stress* was defined as a latent variable to allow each of the 7 compensation-related stress questions to contribute to the overarching construct without a predetermined weighting.

*Premorbid disability* and *disability at 72 months* were defined using 3 parcels (of 4 items each) from the 12 questions that compose the WHODAS II. A *parcel* is a single indicator that is created by aggregating the sum of 2 or more items. Parcels better reflect the constructs being measured compared to individual items. Compared with item-level data, parcels have higher communality, lower likelihood of distributional violations, higher reliability, and a larger ratio of common-to-unique factor variance.<sup>15</sup> Three parcels with the same 4 items from the WHODAS II were created for each measure of premorbid disability at baseline and disability at 72 months. Parcel 1 comprised items 1, 4, 7,

and 10; parcel 2 comprised items 2, 5, 8, and 11; and parcel 3 comprised items 3, 6, 9, and 12.

We used structural equation modeling (see supplementary material) with Mplus version 6.1.2<sup>16</sup> to examine the strength of the relationships between the variables of interest. In the model tested (see Figure 1), a relationship between variables is represented by an arrow, with the head of the arrow representing the variable that is regressed on the tail of an arrow. When the path between 2 variables includes more than 1 arrow, that is, the 2 variables are mediated by 1 or more intervening variables, this is known as an indirect relationship. The strength of the relationship is represented by the standardized regression coefficient ( $\beta$ ), which ranges from 0 (no relationship) to 1 (strongest possible relationship). In Figure 1, the solid black lines represent significant direct effects, and the broken gray lines represent nonsignificant effects. Mplus uses the Delta method to estimate mediation effects, and we employed bootstrapping for the analyses.

As shown in Figure 1, direct relationships were estimated between 6 predictors (injury characteristics; premorbid disability; compensation-related stress; and posttraumatic, depression, and anxiety symptoms at 3 months) and the outcome variable "disability at 72 months," as were direct relationships between 3 predictors (posttraumatic stress symptoms, depression symptoms, and anxiety symptoms) and the outcome variable "compensation-related stress." Of particular interest was the direct relationship between compensation-related stress and disability at 72 months, controlling for the impact of premorbid disability and injury characteristics. Indirect relationships between posttraumatic stress symptoms, depression symptoms, and anxiety symptoms, respectively, and disability at 72 months via compensation stress were also measured. If such indirect relationships were significant, this would indicate that psychiatric symptoms at 3 months contribute to compensation stress, which in turn contributes to disability at 72 months.

## RESULTS

### Sample Characteristics

Table 1 describes the preinjury, injury, and claim characteristics of participants in the study. The mean age of participants was 39.0 years (SD = 13.0); they were predominantly male (n = 235, 71%), and nearly all were working prior to injury (94%). The mean ISS was 12.1 (SD = 8.2), indicating a moderate level of injury severity.<sup>17</sup> Eighty-four percent of participants were injured in motor vehicle accidents.

At 3 months, the majority of participants (76%) stated that they had not commenced the claim process. The sample was observed to have high numbers of participants diagnosed with a psychiatric disorder 3 months after injury. Specifically, the prevalence rate of psychiatric disorder using the MINI<sup>12</sup> was 12.6% for MDE, 6.9% for PTSD, 4.4% for panic disorder, 69% for social phobia, and 54% for GAD.

# Table 2. Perceived Level of Stress<sup>a</sup> Associated With the Compensation Claims Process (N = 332)

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Claim Experience Stressor	Mean (SD)
1. Understanding what you needed to do for your claim	1.5 (1.9)
<ol><li>The amount of time the compensation organization took to deal with your claim</li></ol>	1.4 (1.9)
3. The level of respect and dignity the compensation organization treated you with as a person	0.8 (1.5)
<ol> <li>The fairness with which the compensation organization dealt with your claim</li> </ol>	1.1 (1.8)
5. Getting the compensation organization to listen to what you had to say	1.0 (1.8)
<ol> <li>The number of medical assessments or examinations you went through for your claim</li> </ol>	1.2 (1.8)
7. The amount of compensation you received	1.2 (1.8)
<sup>a</sup> Measured on a 6–point Likert scale (0=no stress, 5=most stres Abbreviation: SD=standard deviation.	sed).

At 72 months, 87% of participants reported that their claim was complete (excluding any residual claims for health and medical costs, an ongoing benefit in some schemes). Table 2 lists the 7 questions used to measure compensation stress and the mean score for each question. Thirty-seven percent of participants reported no compensation-related stress (ie, they scored 0 on all 7 compensation-related stress items). At 72 months, participants reported a mean score of 8.1 (SD = 9.7) on the WHODAS II, reflecting very high levels of disability relative to the general population.<sup>18</sup>

### **Determinants of 72-Month Disability After Injury**

The fit indices for the model tested in Figure 1 indicated a well-fitting model (comparative fit index (CFI) = .95, Tucker-Lewis index (TLI) = .94, root mean square error of approximation (RMSEA) = .06, and standardized root mean square residual (SRMR) = .06). See supplementary material for discussion of model fit analyses.

The latent variable compensation stress contributed to the development of 72-month disability via a significant direct pathway ( $\beta = 0.347, P < .001$ ). Posttraumatic stress symptoms at 3 months contributed to 72-month disability via a significant direct pathway ( $\beta = 0.308$ , P < .001) and a significant indirect pathway through compensation stress ( $\beta = 0.099$ , P = .001). Posttraumatic stress symptoms at 3 months also had a significant relationship with compensation stress ( $\beta = 0.285$ , P<.001). Depression symptoms at 3 months contributed to 72-month disability via a significant indirect pathway through compensation stress ( $\beta = 0.136, P < .001$ ). Depression symptoms at 3 months also had a significant relationship with compensation stress ( $\beta = 0.391$ , P < .001). Anxiety symptoms at 3 months had no significant direct (P=.419) or indirect (P=.836) pathways with 72-month disability. Anxiety symptoms at 3 months also had a nonsignificant relationship with compensation stress (P = .835). The latent variable injury characteristics contributed to the development of 72-month disability via a significant direct pathway ( $\beta = 0.220, P = .001$ ).

## DISCUSSION

Despite the identified need, few studies have empirically examined the mechanisms underpinning the association between compensation status and poor health outcomes.<sup>3</sup> We found that the reported stress levels associated with claiming compensation had a direct and significant relationship with the level of functional disability reported by claimants 6 years after sustaining a serious injury. Early symptoms of posttraumatic stress and depression significantly contributed to stress associated with the claims process (for some people), which, in turn, contributed to later disability. These relationships held even after accounting for the influences of premorbid disability and injury characteristics on long-term disability.

This study sits within a larger body of research examining the impact of compensation on health. This literature has predominantly used qualitative methodologies and has been criticized for its poor quality.<sup>3</sup> In their meta-review of systematic reviews, Spearing and Connelly<sup>19</sup> stated that the majority of the reviews were based on studies that contained serious methodological limitations including using proxy measures of health status (eg, return to work), selection bias, and other confounders. Another criticism is that few studies have evaluated health outcomes beyond 2 years.<sup>20</sup> As compensation claims often take years to resolve, studies with short-term follow-up periods may be subject to bias.<sup>21</sup> Finally, few studies have utilized longitudinal rather than cross-sectional designs to examine the effects of compensation on health outcomes. Taken together, these issues emphasize a need for high-quality studies to examine the impact of compensation on health outcomes.<sup>20</sup> The current study addressed some of these criticisms by utilizing random selection of participants, a validated health outcome measure, and a long-term follow-up of participants.

In our study, a significant direct relationship was observed between both posttraumatic stress symptoms and depressive symptoms and compensation-related stress. A plausible explanation for this relationship is that these symptoms predisposed claimants to experiencing the claims process as stressful. For example, poor concentration may have contributed to difficulty in managing the claims process, intrusive memories may have increased the stressfulness associated with medical examinations, and high levels of irritability may have increased the perception of being treated unfairly by the compensation organization.

A significant indirect relationship was observed between both posttraumatic stress symptoms and depressive symptoms, with disability via compensation-related stress. These indirect relationships are important because they suggest that claimants with high levels of posttraumatic stress symptoms and/or depressive symptoms are at independent risk of finding the compensation process stressful, and the compensation process adds further risk for worse outcomes beyond the influence of psychopathology alone. If only the direct relationships between posttraumatic stress symptoms and/or depressive symptoms with disability were significant, and not the indirect relationships, then the compensation process would not be supported as an additional risk factor. However, the significant indirect relationships suggest that the compensation process contributes an additional and independent risk for increased disability in the aftermath of a serious injury. These findings are consistent with a diminished resources model of adjustment to stress, which posits that one's capacity to manage stress responses is dependent on the resources that one can bring to bear in managing ongoing stressors.<sup>22</sup> In this case, it may be that participants with high levels of posttraumatic stress symptoms and depression have fewer emotional resources available to deal with the ongoing stress of the claims process, which in turn drives higher levels of disability.

This finding builds on the vast literature that has demonstrated a relationship between stress and poor health, eg, Schnurr and Green,<sup>23</sup> and now extends this literature to show the link between self-reported stress arising from the compensation claims process and later disability. These findings suggest that claimants who have developed high levels of posttraumatic stress symptoms and/ or depression would benefit from additional support during the compensation claiming process. One option would be to target early interventions to those who are at risk of developing posttraumatic stress disorder and depression. A number of studies have developed and tested models of stepped care early intervention approaches with promising results.<sup>24,25</sup> Importantly, one of the central components of Zatzick and colleagues' stepped care model of early intervention<sup>26</sup> is to engage the client in empathic discussions regarding disability and financial compensation. Alternatively, the claims process could be redesigned to minimize stressful experiences. For example, an aspect strongly associated with claims-related stress in this study was a sense of not being heard. Simple strategies such as reflective listening<sup>27</sup> by compensation agency case managers may assist in this process. This is consistent with the stepped care approach of Zatzick and colleagues.<sup>26</sup>

Some limitations in the current study should be noted. The sample size is only moderate, and there may be a nonresponse bias from the proportion of the original sample that were claimants and attrited at 72 months. However, as those who attrited presented with characteristics that indicate a greater risk for psychological distress (eg, lower income, unemployment, more premorbid disability), if they were included in the compensation sample, it could be expected that our findings would be strengthened. The sample comprised only hospitalized injury claimants who, most likely, experienced more severe injuries than nonhospitalized claimants. Generalizability of the study findings may be compromised because a large proportion of the people accessing compensation schemes are not hospitalized. Finally, our measure of reported compensationrelated stress may be subject to a reporting bias-namely, those who endorse psychiatric symptoms are also those who report elevated stress resulting from compensation. Although our use of a longitudinal design and structured interviews goes some way to prevent this, replication of our findings with objective indices of compensation stress responses would significantly advance our understanding of the relationship.

In conclusion, this study found that the self-reported stressfulness associated with engaging in the compensation process was associated with worse health outcomes 6 years after severe injury, especially for people entering the claims process with poor mental health. These findings suggest that interventions designed to improve recovery outcomes after compensable injury that fail to recognize the interaction between mental health and the experience of the compensation process will miss the mark. This study sets a new direction for injury compensation schemes—proactive management of those who find the claims process stressful will help schemes achieve their ultimate goal of returning injured persons to health.

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#### Potential conflicts of interest: None reported.

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Supplementary material: See accompanying pages.

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Supplementary material follows this article.



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# Supplementary Material

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## Supplementary Information for Method Section

- 1. Technical Information and Validity Research for Measures Employed in Study
- 2. Data Analysis
- 3. References for Supplementary Material

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## **Supplementary Information – Method section**

Technical information and validity research for measures employed in study

Page 6 - *Disability*: The WHODAS II is a 12 item five point Likert scale measuring six domains of activity limitations: understanding and communication, getting around, self-care, getting along with others, household and work activities, and participation in society. The WHODAS II has been found to be a reliable and valid measure of disability across multiple patient groups.<sup>1</sup>

Page 7 - *Injury characteristics*: The Injury Severity Score (ISS) is scored by rating from 0 to 5 the severity of (survivable) injuries to each of six body regions. The scores for the three most severely injured regions are then squared and summed to produce an ISS ranging from 0 to 75.

Page 7 - *Prevalence of psychiatric disorders* The Mini International Neuropsychiatric Interview (MINI) has good reliability for all diagnoses used in this paper.<sup>2</sup>

Page 7 – *Posttraumatic stress symptoms*: The CAPS rates the frequency and intensity of each of the 17 DSM-IV PTSD symptoms on a Likert scale of 0 to 4, resulting in a summed total score ranging from 0 to 136. The CAPS has been found to have excellent reliability and validity.<sup>3</sup>

Page 7 – *Anxiety and depressive symptoms*: The HADS is 14-item self-report questionnaire, with each item rated on a Likert scale of 0 to 3 producing a score ranging from 0 to 21. Seven items relate to depression and seven items relate to anxiety. Previous research has found the HADS to have excellent discriminant validity and internal consistency, along with a sound factor structure.<sup>4</sup>

## Data Analysis

What is an observed versus a latent variable? (Page 8)

Observed variables are directly measured, while latent variables are calculated from multiple observed variables.

### Why to parcel? (Page 9)

"Premorbid Disability" and "Disability at 72 months" were defined using three parcels (of four items each) from the twelve questions that comprise the WHODAS II. A parcel is a single indicator which is created by aggregating the sum of two or more items. Parcels better reflect the constructs being measured compared to individual items. Compared with parcels, item level data has lower communality, greater likelihood of distributional violations, lower reliability and a smaller ratio of common-to-unique factor variance.<sup>5</sup> Three parcels with the same four items from the WHODAS II were created for each measure of premorbid disability at baseline and disability at 72 months.

What is Structural Equation Modeling? (Page 9)

Structural equation modeling is a multivariate technique employs a combination of factor analysis and multiple regression to concurrently estimate the strength of relationships between specified variables.<sup>6</sup>

Testing model fit (Page 11)

We tested the model fit using the Comparative Fit Index  $(CFI)^7$ ; the Tucker-Lewis Index  $(TLI)^8$ ; the Root-Mean-Square-Error-Approximation  $(RMSEA)^9$ ; and the Standardized Root Mean Square Residual  $(SRMR)^{10}$ . When TLI and CFI levels are close to or greater than .95 then this indicates acceptable model fit.<sup>11</sup> A RMSEA near .06 and a SRMR near .08 further supports the model as fitting the data well.<sup>12</sup>

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