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Feeling Refreshed? Psychological Flexibility and Perceptions of Sleep Quality in a Chronic Illness Sample

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INTRODUCTION

Poor sleep quality is reported by 38% of adults (Kang, Lee, Jang, Kim, & Sunwoo, 2013). Despite recommendations that adults need 7-8 hours of sleep per day, almost 30% report sleeping ≤ 6 per day (Schoenborn & Adams, 2010). Depending on the diagnostic criteria applied, the prevalence of insomnia is estimated between 6 and 37% (Hayward, Jordan, & Croft, 2012). Poor sleep in adults is related to decreased quality of life, work productivity and physical activity, as well as increased risk of accidents, health care utilization and costs, physical distress, mental distress, number of days spent in bed, and restricted activity (Daley et al., 2009; Roth, 2007; Strine & Chapman, 2005).

Adults with chronic illness (CI) experience insomnia at an even higher rate than the general population (Taylor et al., 2007). Moreover, within this population sleep problems tend to be more severe and persistent (Ancoli-Israel, 2006). Poor sleep among patients with CIs is often associated with decreases in daytime functionality and adverse medical and psychological outcomes including depression, fatigue, and lower overall and health-related quality of life (White & White, 2011; Katz & McHorney, 2002). Patients who receive interventions specifically targeting sleep show improved symptoms, less healthcare utilization, and reduced healthcare spending (McCrae, Bramoweth, Williams, Roth, & Mosti, 2014).

The purpose of this study was to examine factors related to psychological flexibility, functional outcomes and self-reported sleep patterns and subjective ratings of sleep quality in an online CI support group sample. More specifically, subjective ratings of sleep quality (i.e., sleep interpretation) were examined relative to measures of mindfulness, acceptance and perceived disability.

METHOD

Participants and Procedure:

Participants were recruited via online chronic illness support groups. The sample ($N=380$; mean age=52.8, $SD=12.5$) was primarily Caucasian (91.5%), female (81%), married (59%), and well educated (mean years=15.4, $SD=2.7$), with a median household income between US \$40K and US \$50K. Mean number of chronic illnesses was 2.6 ($SD=1.5$).

Measures:

Perceived Illness Disability Inventory (PIDI): The PIDI was adapted from the Pain Disability Index to make it inclusive of all chronic conditions, not just pain. Self-reported illness interference is assessed in the following life domains: family/home responsibilities, recreation, social activities, occupation, sexual behavior, self-care, and life-support activity. Items are rated on a 0 ("no disability") to 10 ("total disability") scale (Pollard, 1984). The seven items are summed to create a single total disability score.

Mindful Attention Awareness Scale (MAAS): The MAAS consists of 15 items designed to measure of a single-factor construct of mindfulness (Brown & Ryan, 2003). Each of the items is rated on a 6-point scale from 1 ("almost always") to 6 ("almost never").

Chronic Illness Acceptance Questionnaire (CIAQ): The CIAQ (Beacham, Linfield, Kinman, & Payne-Murphy, Revision under review) was adapted from the Chronic Pain Acceptance Questionnaire (CPAQ; McCracken et al., 2004). Twenty items are rated on a 0 ("Never true") to 6 ("Always true") scale to produce a two-factor structure: Activity Engagement and Pain Willingness. All CPAQ items were retained in the development of the CIAQ, and analyses revealed item loadings on the same two-factor structure as the CPAQ.

Valued Directions Questionnaire (VDQ): The VDQ is a self-report questionnaire that asks participants to rate their perceived importance and satisfaction across several domains related to quality of life (Hayes, Strosahl, & Wilson, 1999). Domains include family, intimate relationships, parenting, work/career, education/training, recreation/fun, spirituality, citizenship/community life, and health/physical self-care. Participants rank the items on a 10-point scale from 1 ("Not important/satisfied") to 10 ("Very important/satisfied") or "N/A" if an item does not apply.

The Pittsburgh Sleep Quality Index (PSQI): The PSQI is an 18-item self-report measure used to assess quality of sleep (Buysse, Reynolds, Monk, Berman, & Kupfer, 1989). Items relate to sleep efficiency, sleep latency, hours spent in bed and asleep, use of sleep aides (e.g., medications) as well as other sleep quality-related questions.

Acceptance and Action Questionnaire- II (AAQ-II): The AAQ-II (Bond et al., 2011) is a shortened, seven-item measure of psychological inflexibility and experiential avoidance designed to measure the same constructs as the Acceptance and Action Questionnaire (AAQ; Hayes et al., 2004). Items are rated from 1 ("never true") to 7 ("always true") scale for statements like "Emotions cause problems in my life."

Figure 1. Sample sleep descriptives.

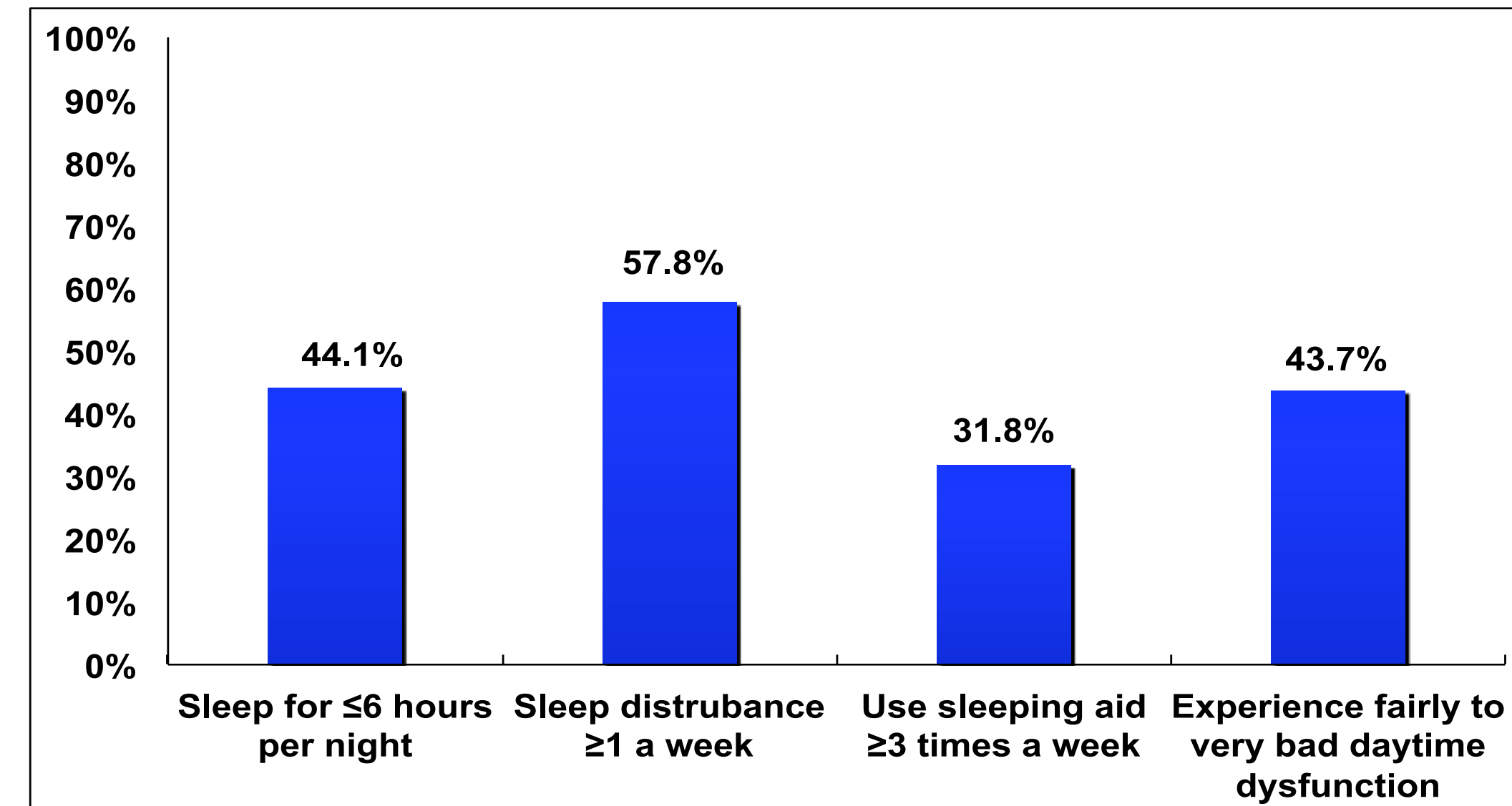
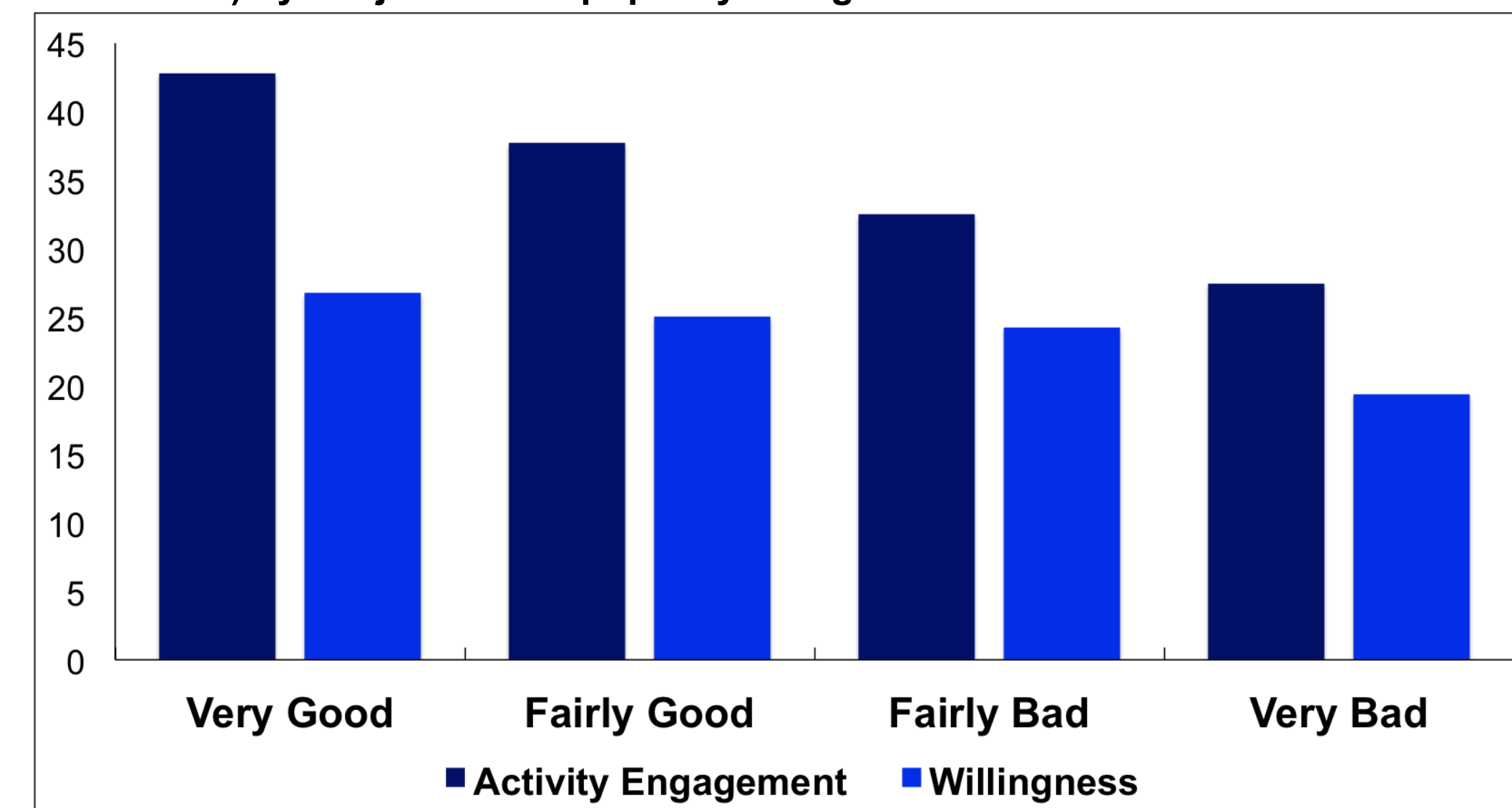
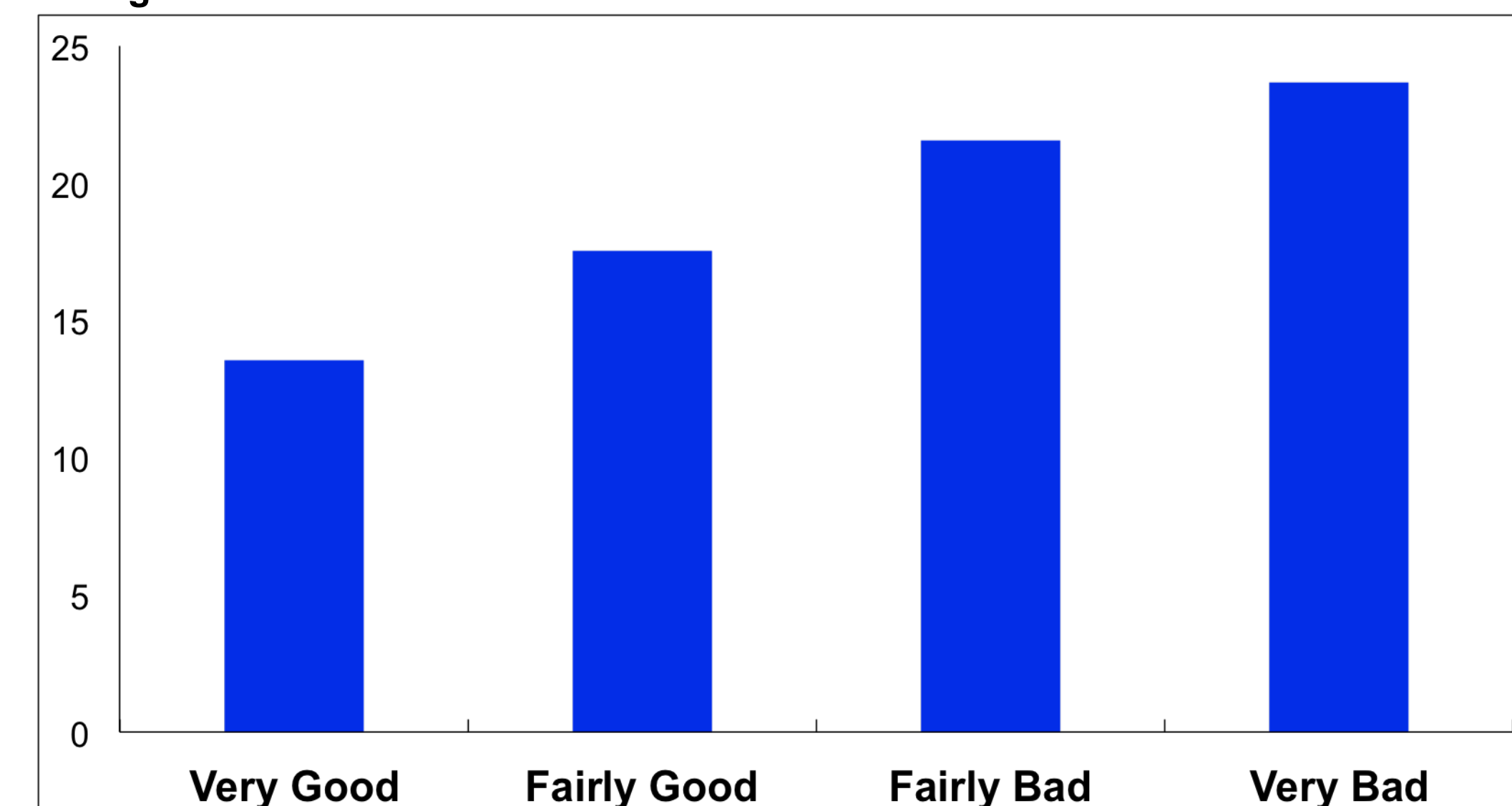


Figure 2. Acceptance scores (CIAQ: Activity Engagement and Willingness subscales) by subjective sleep quality ratings



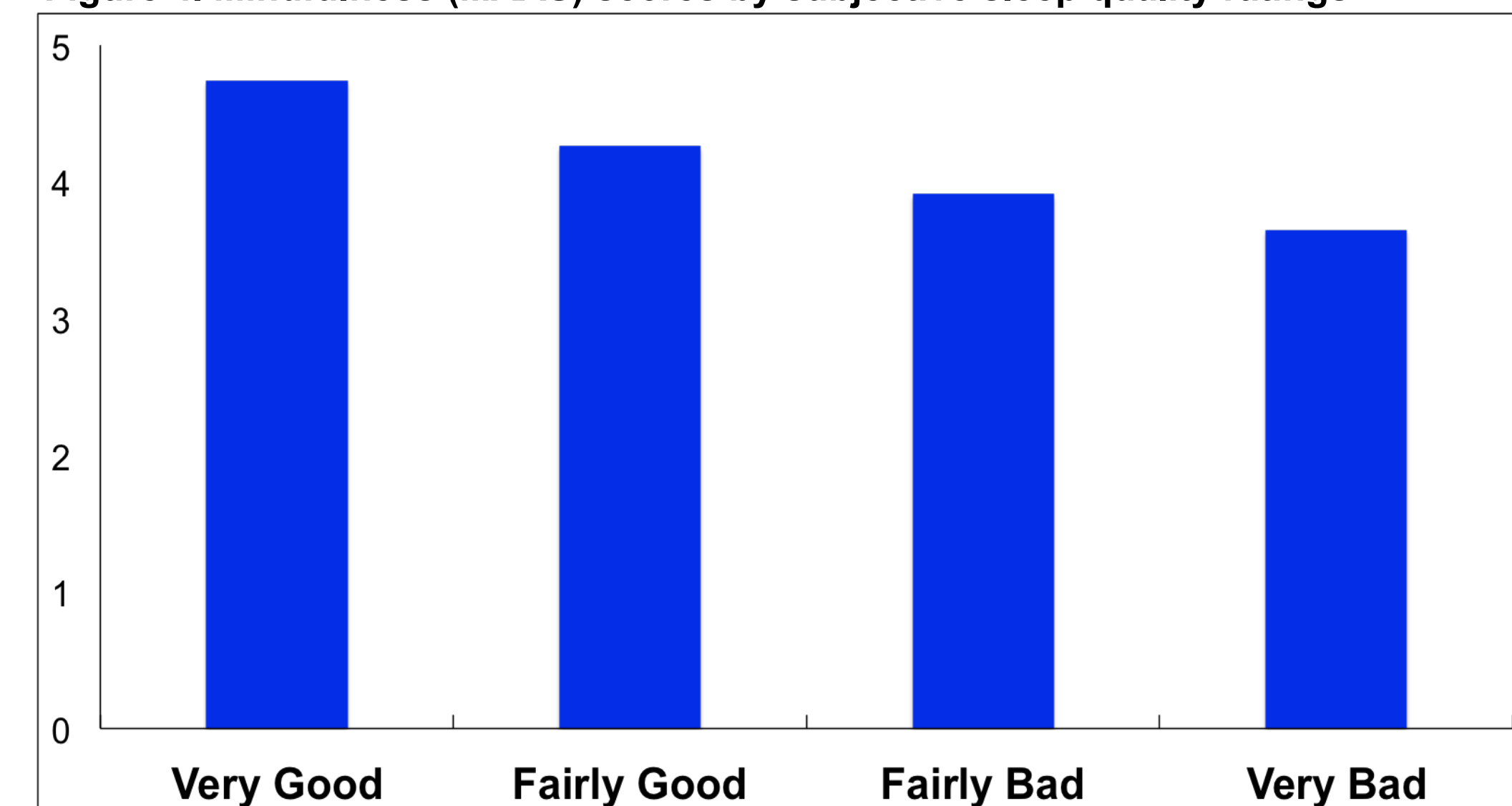
NOTE: CI Acceptance – Activity engagement $F(3,362) = 16.12, p < .01$;
CI Acceptance – Willingness $F(3, 367) = 5.93, p < .01$

Figure 3. Experiential Avoidance (AAQ-II) scores by subjective sleep quality ratings



NOTE: $F(3, 381) = 13.65, p < .01$

Figure 4. Mindfulness (MAAS) scores by subjective sleep quality ratings



NOTE: $F(3, 382) = 12.59, p < .01$

RESULTS & DISCUSSION

There were significant overall differences by group. In general, those with higher SSQ ratings endorsed higher levels of CI Acceptance (both Activity Engagement and Willingness subscales) and Mindfulness. Conversely, those with higher levels of SSQ endorsed lower levels of Experiential Avoidance. See Figures 2-4. Additionally, those with higher SSQ ratings had higher ratings of satisfaction in valued areas of living [$F(3, 364) = 6.19, p < .01$] and lower levels of illness-related perceived disability [$F(3,377)=15.96, p < .01$].

Interestingly, 61% of participants in the study sample rated their SSQ as "fairly good" or "very good". However, nearly 80% actually had total objective PSQI scores indicating "poor" sleep with many reporting reduced levels of daytime function.

Results highlight how aspects of psychological flexibility may be associated with perceptions of sleep quality and hence, vitality.

- Cognitive behavioral methods have been helpful, but the effects are not optimal (Harvey & Tang, 2003). Recent research findings illustrate that mindfulness approaches are often associated with less pre-sleep arousal, sleep effort, and daytime sleepiness and with better sleep hygiene and sleep quality (Howell, Digdon, & Buro, 2010). ACT-based treatments focused on acceptance, mindfulness, and values may enhance the process of patients' acceptance of beliefs and interpretations about sleep and sleeplessness. ACT-based treatments, therefore, may help to alter sleep quality perceptions, increase functionality, and improve medical outcomes (Dalrymple, Fiorentino, Politi, & Posner, 2010; Lundh, 2005).

- Future research should consider both subjective and objective aspects of sleep quality in individuals with myriad and co-morbid chronic illnesses.

- Future directions might also include comparisons of ACT-based insomnia treatment and CBTi in addition to examining the role of psychological flexibility.

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