

Clinicians' Commentary

In this article, Stratford et al. have shown clinicians that using both the P4 pain questionnaire and the WOMAC physical function domain to measure patient-reported pain and function is better than using the WOMAC pain and physical function domains alone, because the former provides a more distinct measurement of pain and function than the latter.¹ In addition, other important messages can be gleaned from this study that may not be immediately apparent to the reader.

First, there is a good example of how “many hands make light work,” which reminds all physical therapists about the scientific yield that is possible from strong working relationships between clinicians and their research colleagues. This study is the result of tremendous and invaluable cooperation at a large arthroplasty site. However, the contributions of physical therapists involved in the earlier work that led to the current investigation may be less visible. For example, the initial development of the P4 involved the contributions of 62 physiotherapists and 5 physiotherapy clinics in Ontario.² Subsequent psychometric evaluation involved 20 different outpatient physical therapy clinics across 3 Canadian provinces and an additional clinical facility in the United States.³ Without a doubt, we would not be reading this article and its practical take-home messages without the combined efforts of many physical therapists who contributed to the initial development of the P4 by conducting research in their busy clinical practices.

Second, there is one small finding from the P4 and WOMAC physical function domain factor analysis (Table 2 in Stratford et al.¹) that adds to the validity of the findings. Three of the P4 items address diurnal variation in pain. This is clearly a clinically relevant pain construct for people with osteoarthritis (OA). Consistent with this construct, the factor loadings for these three items were all very high (0.84, 0.96, and 0.96). Additional evidence of the validity of this factor analysis is that the only activity-related P4 item had the lowest loading (0.78) across the P4 items. This finding would be expected if this item does not measure the same pain construct as diurnal variation in pain intensity.

Third, the correlation findings reveal the challenge of measuring pain. The Pearson coefficient (r) for the correlation between the P4 and the WOMAC pain domain was 0.67. Ignoring the single activity-related P4 item for now, the corresponding coefficient of determination (r^2) would indicate that 45% of the fluctuation in activity-related pain was explained by knowing the intensity of pain throughout the day. This statement could be reworded in the opposite direction; however, it is the

magnitude of the unexplained variation (55%) that highlights the challenge to clinicians and researchers. Apart from measurement issues, what else could account for this unexplained variance?

Recent work may shed additional light on this question. In 2008, a working group of the Osteoarthritis Research Society International and Outcome Measures in Rheumatoid Arthritis Clinical Trials (OARSI/OMERACT) published an 11-item pain measure for persons with OA: the measure of Intermittent and Constant Osteoarthritis Pain (ICOAP).⁴ In the OARSI/OMERACT focus groups, two additional dimensions of pain were identified by people with symptomatic hip or knee OA: a constant, less severe background ache that is interrupted by a second, more intense, intermittent pain. Once again, these are clinically relevant complaints of pain that clinicians hear regularly from their patients with OA. Note that there is no item in the ICOAP that specifically addresses activity; instead, the intensity and frequency of these other pain dimensions and their impact on quality of life, frustration, worry, and sleep are quantified. Neither of these pain dimensions is captured by the WOMAC pain domain or by the P4. Like Stratford et al.,¹ the OARSI/OMERACT group found a moderate correlation between their pain measure and the WOMAC pain domain, and they also attributed this to the fact that the tools measure different constructs.

All of these findings speak to the multiple aspects of pain experienced by people with OA; but, more importantly, they highlight the challenges of measuring the total pain experience in this patient group. In this respect, Stratford et al.¹ are correct to suggest that future pain research should embrace measurement beyond patient-reported outcomes. It is timely that the Canadian Physiotherapy Association (CPA) Pain Science Division was officially founded in the summer of 2008, and welcomed its first members with the CPA membership registration period beginning in September 2008.

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