



Disability & Quality of Life In Patients With Chronic Musculoskeletal Pain



Changi
General Hospital
SingHealth

Eng, K. W., Yu, X. J., Tam, W. S. W., Singh, P. A., Yoong, C. S., Hassan, N.

Introduction

The disability experienced by patients with chronic musculoskeletal pain (CMP) and its impact on quality of life (QoL) remains poorly understood due to a lack of literature (Mohamed & Hairi, 2015). Thus, this study aimed to:

- 1) Explore the influence of sociodemographic and medical factors on disability and QoL;
- 2) Establish the correlation between disability and QoL; and
- 3) Determine the predictors for disability and QoL in such patients.

Methods

This descriptive correlational cross-sectional study was conducted in an outpatient pain clinic in a tertiary hospital with the approval from SingHealth Centralized Institutional Review Board. Only 112 out of 150 patients (74.7%) provided informed written consent and were consecutively enrolled in the study. Disability was measured using the Pain Disability Questionnaire (PDQ) while QoL was measured with the EQ-5D-5L. Independent-Samples T-test and Pearson Correlation Coefficient tests were run to determine significantly associated factors. Regression analysis was fitted via general linear model to determine the predictors. Variables found to have $p < .100$ level were included in regression analysis for the study outcomes. Statistical significance was set at $p < .05$.

Results

Table 1: Significant T-test for Outcomes across Categorical Variables

Variable	PDQ Score		EQ-5D Health Index	
	T-value	P-value	T-value	P-value
Education Level	ns	ns	4.01	.021
Employment Status	-2.24	.027	3.03	.003
Staying with Family	-3.71	< .001	2.62	.015
Smoker	2.12	0.37	ns	ns
Pain subsides in an hour	-2.37	.020	2.19	.031
Psychiatric History	3.71	.001	ns	ns

Table 2: Significant PCC Tests for Outcomes across Continuous Variables

Variable	PDQ Score		EQ-5D Health Index	
	PCC	P-value	PCC	P-value
Usual Pain Score	.36	< .001	-.50	< .001
PDQ Score	-	-	-.72	< .001
EQ-5D Health Index	-.72	< .001	-	-

PCC - Pearson Correlation Coefficient

Table 3: Significant Predictors for PDQ Score and EQ-5D Health Index

Outcome	Predictors	β Coefficient	95% CI	P-value
PDQ Score	Psychiatric History	-0.149	(-25.16, -2.50)	.017
	Age	-0.291	(-0.913, -0.277)	< .001
Health Index	Health Index	-0.575	(-132.29, -70.52)	< .001
	No/Low Education	0.204	(0.016, 0.073)	.003
Health Index	Usual Pain Score	-0.256	(-0.033, -0.008)	.001
	PDQ Score	-0.474	(-0.004, -0.002)	< .001

CI - Confidence Interval

Discussion

Employment was shown to be associated with better QoL and lower disability. However, there might be an over-representation of the unemployed for this study as 42.9% of the participants were above the national retirement age. Hence, this finding should be interpreted with caution.

PDQ Score and EQ-5D Health Index were found to be strongly and negatively correlated. This was also shown by Ketiš (2011).

Usual pain score was reported to be a significant predictor for Health Index in this study. This was contradicted by existing studies. Ketiš (2011) reported higher pain scores to be predictive of both higher disability scores and lower EQ-5D scores while Børsbo et al. (2009) reported greater pain intensity to be predictive of only greater disability. Therefore, the predictive ability of pain intensity for disability and QoL should be explored further.

Positive psychiatric history was shown to be a statistically significant predictor for higher PDQ Score. Existing studies (Børsbo et al., 2009; Ketiš, 2011) have shown that psychosocial factors play a significant role in determining health outcomes of CMP patients. Lintonl et al. (2011) also highlighted psychosocial factors having greater predictive ability than pain-related factors such as pain site or duration. Likewise, pain-related fear was shown to predict disability patients with chronic low back pain (Gheldof et al., 2010). However, only 11.6% of the participants reported being co-diagnosed with depression and/or anxiety which may result in insufficient representation. Moreover, depressive and anxiety-related symptoms may be present in patients who were not formally diagnosed with a psychiatric disorder, suggesting an underestimation of the psychological impairment the participants experienced. This highlights the need for pain studies to look further into the psychological aspects of chronic pain patients.

Conclusion

These study findings have enlightened healthcare professionals about the factors that can contribute to the impact of CMP on the patients they provide care for, allowing the possible implementation of multidisciplinary strategies to minimize the impacts these factors have on patients. If successful, these strategies might be adopted at an institutional or even national level, benefiting a larger group of patients, effectively reducing the burden of CMP on the society.

References

- Børsbo, B., Peolsson, M., & Gerdle, B. (2009). The complex interplay between pain intensity, depression, anxiety and catastrophising with respect to quality of life and disability. *Disability and Rehabilitation*, 31(19), 1605-1613.
- Gheldof, E. L., Crombez, G., Van den Bussche, E., Vinck, J., Van Nieuwenhuysse, A., Moens, G., . . . Vlaeyen, J. W. (2010). Pain-related fear predicts disability, but not pain severity: A path analytic approach of the fear-avoidance model. *European Journal of Pain*, 14(8), 870. e871-870. e879.
- Ketiš, Z. K. (2011). Predictors of health-related quality of life and disability in patients with chronic nonspecific low back pain. *Slovenian Medical Journal*, 80(5).
- Lintonl, S. J., Nicholasl, M. K., MacDonaldl, S., Boersmal, K., Bergboml, S., Maherl, C., & Refshaugel, K. (2011). The role of depression and catastrophizing in musculoskeletal pain. *European Journal of Pain*, 15(4), 416-422.
- Mohamed, Z. L. R., & Hairi, N. N. (2015). A Systematic Review of the Prevalence and Measurement of Chronic Pain in Asian Adults. *Pain Management Nursing*, 16(3), 440-452. doi:10.1016/j.pmn.2014.08.012