

# Quality-of-life in population-based women with comorbid mood disorders and arthritis

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## INTRODUCTION

**Mental disorders and musculoskeletal disorders** are the leading contributors to disability worldwide—accounting for over one third (33.9%) of the global years lived with disability (YLDs) combined (1). However, their comorbidity is seldom studied in population-based settings, and little is known about associated patient-reported outcomes, including quality-of-life (QoL).

### Mood disorders and arthritis

- Mood disorders** are a group of diagnoses, characterized by disturbed/fluctuations in emotional states or mood, which interferes with functioning and/or causes significant psychological distress (2).
- The most common form of mood disorder is **major-depressive disorder** (MDD), with less common, but often more severe forms including bipolar disorder (I/II) (2).
- Separately, osteoarthritis is a common form of **arthritis**—affecting joints and surrounding tissue in the knees, hips, spine, and hands—causing marked swelling, pain, and stiffness, which lead to restrictions or difficulty participating in life's daily tasks and meaningful activities (3). Other types include psoriatic and rheumatoid arthritis.
- Both mood disorders and arthritis are more common in women. The life-time prevalence of mood disorders in Australian women is estimated to be 30.0% (3), with 17.7% of Australian women having arthritis in 2020-2021 (4).**
- Approximately 30% of Australians with arthritis, report a co-occurring mental health difficulty (4).

### Quality-of-life

- QoL refers to one's subjective evaluation of their life, influenced by cultural, social, and environmental contexts and personal factors.
- Quality-of-life is a continuum with a higher to lower range.
- QoL is defined by the World Health Organization (WHO) as:

*"Individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns"* (5).

**AIM:** We examined the QoL of women with mood disorders, arthritis, and the comorbidity of these in a population-based setting.

## METHOD

### The Geelong Osteoporosis Study (GOS)

- Established in the mid 1990's, the GOS now examines a multitude of musculoskeletal conditions as well as having a comprehensive mental health and subjective well-being arm.
- This cross-sectional study analyzed data collected from 840 women aged 28–95 years between 2011 and 2014.

**Table 1: Odds of low quality-of-life according to mood disorders, arthritis, and mood disorders + arthritis status**

	QUALITY-OF-LIFE DOMAINS			
	Physical	Psychological	Social	Environment
<b>Model I</b>				
<b>Without mood disorders or arthritis (reference)</b>	-	-	-	-
<b>Mood disorders</b>	<b>3.08 (2.12, 4.47)</b>	<b>3.10 (2.16, 4.44)</b>	<b>2.33 (1.64, 3.32)</b>	1.27 (0.90, 1.79)
<b>Arthritis</b>	<b>2.06 (1.34, 3.16)</b>	0.93 (0.61, 1.41)	1.14 (0.74, 1.74)	0.76 (0.50, 1.15)
<b>Mood disorders + arthritis</b>	<b>6.18 (3.58, 10.69)</b>	<b>2.91 (1.73, 4.88)</b>	<b>2.80 (1.71, 4.59)</b>	1.51 (0.94, 2.44)
<b>Age, y</b>	1.04 (1.03, 1.05)	1.02 (1.01, 1.03)	1.01 (1.00, 1.02)	1.01 (1.00, 1.02)
<b>Model II</b>				
<b>Without mood disorders or arthritis (reference)</b>	-	-	-	-
<b>Mood disorders</b>	<b>2.62 (1.74, 3.95)</b>	<b>2.52 (1.71, 3.72)</b>	<b>2.16 (1.47, 3.15)</b>	1.02 (0.70, 1.48)
<b>Arthritis</b>	<b>1.91 (1.17, 3.13)</b>	0.67 (0.42, 1.08)	0.97 (0.60, 1.56)	0.54 (0.34, 0.87)
<b>Mood disorders + arthritis</b>	<b>5.95 (3.26, 10.87)</b>	<b>2.40 (1.37, 4.20)</b>	<b>2.34 (1.38, 3.96)</b>	1.19 (0.71, 2.01)
<b>Age, y</b>	<b>1.02 (1.01, 1.03)</b>	<b>1.01 (1.00, 1.02)</b>	1.00 (0.99, 1.01)	1.00 (0.99, 1.01)
<b>BMI, kg/m<sup>2</sup></b>	<b>1.05 (1.02, 1.08)</b>	<b>1.04 (1.01, 1.07)</b>	1.01 (0.99, 1.04)	<b>1.05 (1.02, 1.08)</b>
<b>SES</b>				
<b>Low (reference)</b>	-	-	-	-
<b>Mid</b>	1.07 (0.711, 1.62)	0.92 (0.63, 1.35)	0.68 (0.47, 1.00)	<b>0.58 (0.40, 0.84)</b>
<b>High</b>	0.81 (0.52, 1.26)	0.98 (0.65, 1.48)	0.75 (0.50, 1.12)	<b>0.57 (0.38, 0.85)</b>
<b>Mobility</b>				
<b>Not active (reference)</b>	-	-	-	-
<b>Active</b>	<b>0.23 (0.15, 0.34)</b>	<b>0.39 (0.26, 0.57)</b>	<b>0.41 (0.29, 0.60)</b>	<b>0.44 (0.30, 0.63)</b>

### Assessment of mood disorders and arthritis

- Lifetime mood disorders was determined using the SCID-I/NP, a gold-standard validated, semi-structured clinical interview for the major mental disorders according to the DSM-IV-TR.
- Mood disorders included MDD, minor depression, dysthymia, mood disorder due to a general medical condition, substance induced mood disorder, and bipolar disorder (I, II and not otherwise specified).
- Arthritis was identified by self-reported osteoarthritis, ankylosing spondylitis, psoriatic arthritis, rheumatoid arthritis, or treated gout (medications used for gout or hyperuricaemia).

### Anthropometry and lifestyle

- Height and weight** was measured to the nearest 0.1 cm and 0.1 kg, respectively with body mass index (BMI [kg/m<sup>2</sup>]) derived from these measures.
- Mobility** status was obtained by self-report (active/inactive).
- Socioeconomic status (SES)** was determined using the IRSAD and calculated from SEIFA scores. A three-category SES variable was derived whereby 1=low SES, 2=mid SES, and 3=high SES.

### Quality-of-life

- QoL** was measured using the WHOQOL-BREF (26-items; 5-point Likert scale).
- We calculated **four domains**:
  - I) Physical
  - II) Psychological
  - III) Social
  - IV) Environment.
- QoL domains were dichotomized** (high/low) using normative mean scores previously published: physical domain 73.5, psychological 70.6, social 71.5, and 75.1 for the environment domain (6).

### Analyses

- Logistic regression models investigated associations between mood disorders, arthritis, and their comorbidity in relation to QoL after adjustment for age (Model I) and other covariates (Model II).

## RESULTS

- Of the sample, 26.3% (n=221) had **mood disorders**, 18.7% (n=157) had **arthritis**, and 11.1% (n=93) had **comorbid mood disorders and arthritis**. The sample was comprised of 43.9% (n=369) women **without a history of mood disorders or arthritis**.
- Women with **mood disorders** were more likely to be **younger**, women with **arthritis** had the highest proportion of being **inactive**, while women with **comorbid mood disorders and arthritis** had higher **BMI**. Otherwise, the groups were similar.
- Mood disorders** were associated with increased odds of **low physical, psychological, and social QoL** (Model I & II).
- Arthritis** was associated with increased odds of **low physical QoL** (Model I & II).
- Comorbid mood disorders and arthritis** had increased odds of **low physical, psychological, and social QoL** (Model I & II).

## DISCUSSION

- We report that women with **comorbid mood disorders and arthritis** had the highest odds of **low physical health QoL**.
- Mood disorders** may play a key role in influencing women's perception of the quality of their physical, psychological, and social health, especially if they have comorbidities involving arthritis.
- Comorbid mood disorders and arthritis** may be linked by cycles of depressed mood, physical symptoms involving pain, interference with social functioning and relationships. The relationship between these comorbidities and environmental health factors remains unclear.

### References

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