

Depressive Symptoms Among Older Adults with Knee Osteoarthritis: A Cross-sectional Study of Depressive Symptom Prevalence, and Clinical interrelationships

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Background

- Osteoarthritis, a progressively destructive joint disease causing varying degrees of unrelenting pain and excess suffering continues to remain highly prevalent among all older populations.
- At the knee, the most commonly affected joint, pain of varying degrees, the major complaint, is often unrelieved by standard treatment, and found to exceed the extent of radiographic damage quite frequently.
- Recent research highlighting the contribution of central pain pathways suggests there may be central nervous system responses in some individuals that produces excessive pain refractory to analgesic intervention alone.

More specifically:

- The present study was implemented to:
 - Examine the magnitude and extent of depressive symptoms among a cohort of community dwelling older individuals with mild joint disease that has only been examined very superficially to date.
 - Examine the relationship of these symptoms to other common cognitive, functional, and health status variables.

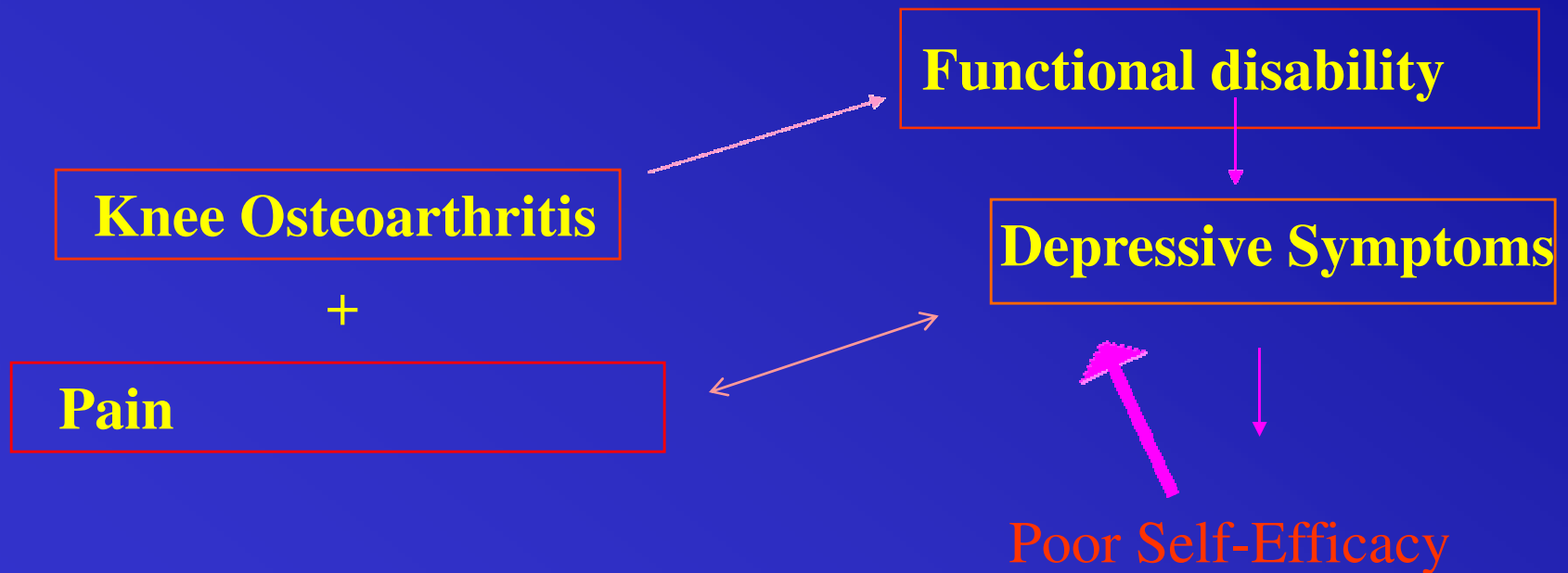
It was believed this: could hold promise for improving our ability to intervene more successfully in promoting the wellbeing of this large patient population.

Rationale

- It was hypothesized that although the underlying causes of knee **osteoarthritis** and the risk factors that foster its progression — are largely biological — a careful examination of psychological correlates, relatively unexplored potential determinants of the disease, might prove insightful in the design of interventions to reduce the magnitude of this disabling condition, and its deleterious effect on quality of life.

Overall Objective

- To ascertain the degree of support for the potential role of depressive symptoms in mediating or moderating:
 - Pain.
 - Mobility
 - Self-efficacy perceptions



Methodology

- Data previously collected on 71 women and 15 men mean age 72.47±7.15 years with either unilateral (N=48) or bilateral knee osteoarthritis (N=38) with 0.9±.9 numbers of comorbid health conditions using validated tools, were collected and analyzed:
- VAS pain scale
- AIMS-arthritis measurement impact scale
- CES-D-depression scale
- Self-paced walking velocity
- Fast-paced walking velocity
- Walking endurance
- Perceived exertion when walking-Borg scale
- Arthritis Self-efficacy scale for pain and symptom management

Results (i)

- Based on mean PAIN scores of 4.8 ± 2.8 on 0-10 point scale, most were only experiencing modest pain levels.
- Similarly, mean IMPACT scores of 4.9 ± 2.0 on 0-10 point scale suggested most were **moderately or mildly** impacted.
- A mean 6-minute walking distance of 362.4 ± 115.8 m was achieved without any assistive device.

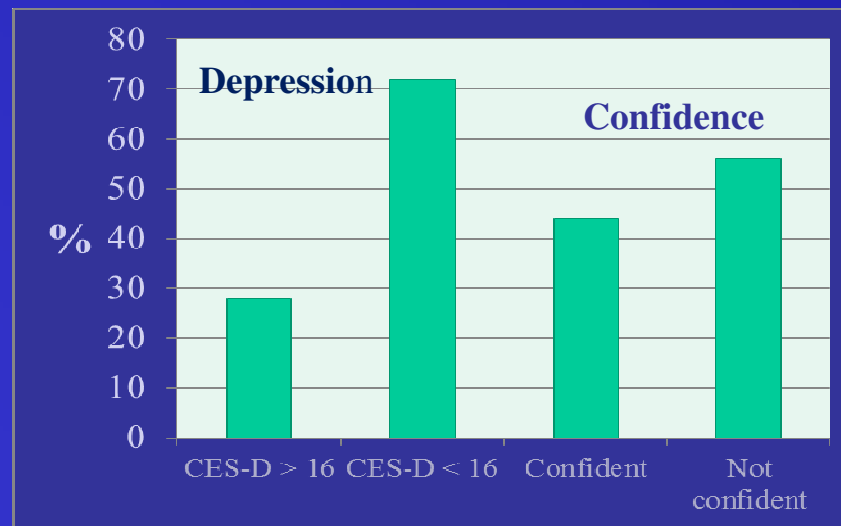
Table 1. Selected Subject characteristics (N=86)

Variables	Mean \pm SD	Min	Max
Age (years)	72.5 ± 7.2	60	89
No. Pre-existing conditions	$.9 \pm .9$	0	4
VAS scores (0-10)	4.8 ± 2.8	0	10
AIMS Impact (0-10)	4.9 ± 2.0	1	10
6-min Walk distance (m)	362.4 ± 115.8	53	607

Results (ii)

- Based on the **CES-D** scores, where scores of **16** or higher are generally used as a cut-off score denoting possible depression, 24 cases or **27.9%** of the cohort was categorized as having an elevated risk of depression.
- This cohort also reported only modest self-efficacy scores for managing pain and their other symptoms and most (56%) were NOT confident.

Table 2. Percent cohort showing depressive symptoms and low confidence (N=86)



Results (iii)

- Based on the observed correlations between the depressive symptom scores and key selected variables, there was a significant relationship between the pain, function, and self-efficacy scores and the depressive scores.
- The strongest associations were those between the self efficacy and the depression scores.
- Age, gender, and body mass were not related to the CES-D scores.

Table 3. Summary of Key Correlations for Selected Variables showing Depressive Symptoms correlate with Pain, Impact, Function, and Self-efficacy (N=86)

Variable	VAS	AIMS	Fvel	6 min	Pain SE	Other SE
CES-D	.280**	.249**	-.265*	-.261*	-.483**	.558**

Results (iv)

- Those **with no** depressive symptoms, were **more** confident in managing pain than those with mild-moderate depressive symptoms.
- Those with more **severe** symptoms, had lower pain self-efficacy score than those with milder symptoms.

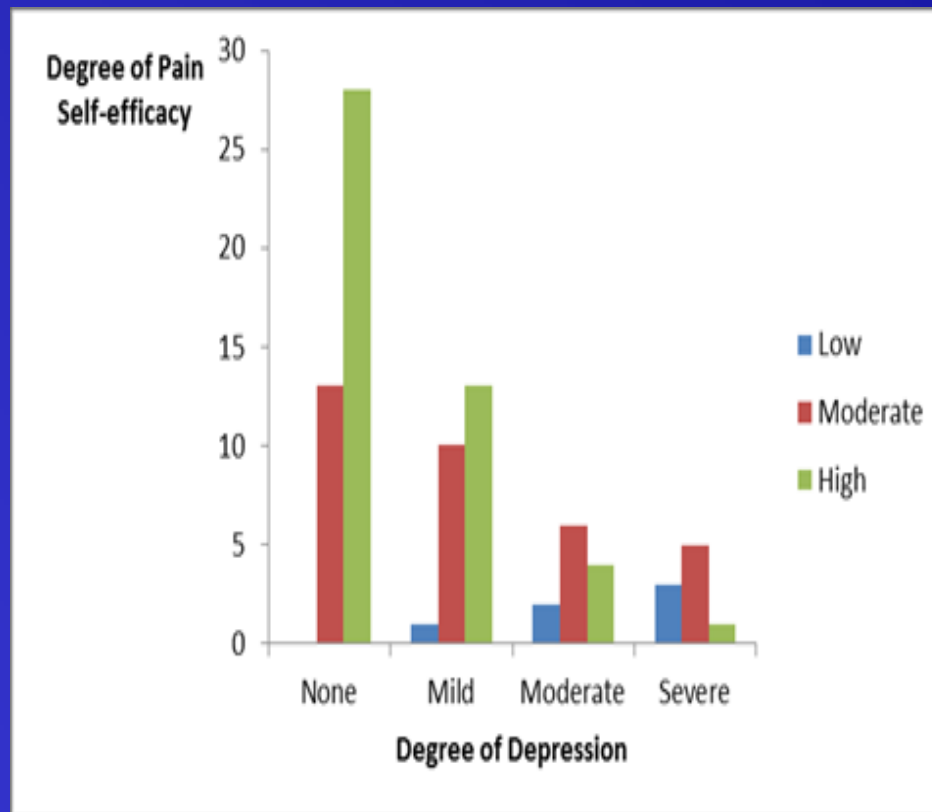


Figure 1. Relationships between depressive symptoms and pain self-efficacy

Results (v)

- Those **with no** depressive symptoms were more confident in managing symptoms than those with mild-moderate depressive symptoms.
- Those with more severe symptoms, had lower self-efficacy attributes than those with milder symptoms.

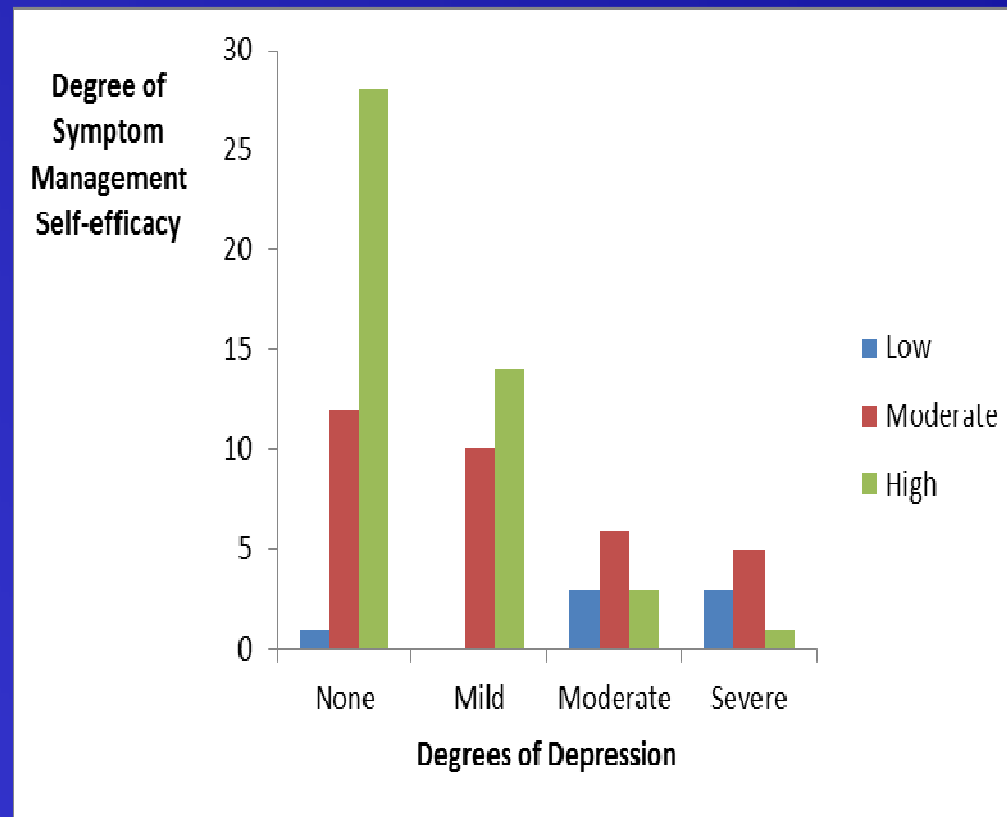


Figure 2. Relationships between depressive symptoms and other symptoms self-efficacy

Results (vi)

- The only significant predictor of depression was **self-efficacy for symptoms other than pain** accounting for **35%** of the variance in perceived distress.

Total R ²					
		Std Beta	t	p	95% C.I. B
1 (Constant)	0.35		5.610	0.001	20.006 - 42.018
Walking distance		-0.171	-1.196	0.27	-.011 -.003
AIMS		-0.037	-0.037	0.70	-1.298 -.950
VAS pain score		0.113	0.956	0.34	-.397 -1.129
Self-paced velocity		0.11	0.266	0.79	-.452 -.592
Fast velocity		-0.034	-0.080	0.94	-.521 -.481
Pain self-efficacy		-0.146	-1.112	0.27	-.191 -.054
<i>Other self-efficacy</i>		-0.42	-3.158	0.002	-.288 - -.065

Table 4. Summary of the Standardized Beta Coefficients for Regressing Predictors of Pain, Walking Distance, Walking Velocity, and Self-efficacy Predictor Variables and the Dependent Variable of Depression Severity (N=86)

Study Conclusions

- A high percentage of adults with mild to moderate knee **osteoarthritis** are likely to present with depressive symptoms even if undiagnosed.
- The magnitude of the depressive symptom scores are associated with pain, functional mobility, and self-efficacy for managing pain and other symptoms in a dose dependent manner.
- Those with low self efficacy exhibit higher depressive symptoms scores.
- The strongest predictor of depressive symptoms is the perceived confidence individuals have about their ability to manage their symptoms other than pain, such as fatigue.

Overall Conclusion

- Although depression is frequently neglected in the realm of clinical preventive strategies against the disease progression, since those with depressive symptoms had higher degrees of disability than those without depressive symptoms, more efforts to identify and treat depression are indicated.
- The present findings strongly support the view that building the persons confidence to manage their disease symptoms will help to minimize depressive feelings and may be highly important for optimally reducing disability in this group.

As such they tentatively support:

- The view held by several leading researchers that:

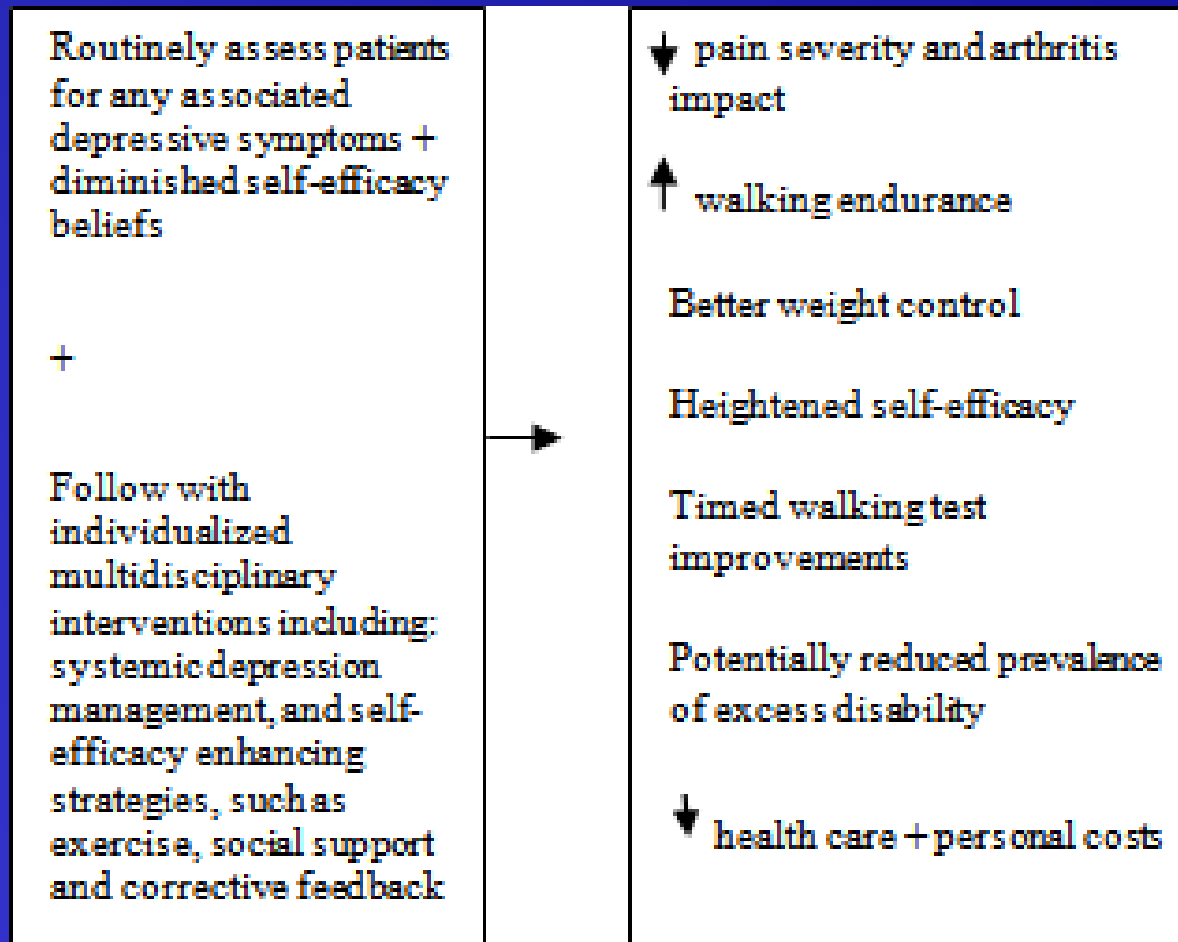


Figure 3. Theoretical framework depicting potential outcome of routine assessment and targeted rehabilitation.

THANK YOU.