

### A Systematic Review of Existing Core Outcome Sets to Identify Consistencies for Axial Musculoskeletal Pain

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### Background

Spinal pain is increasingly burdensome with several core outcome sets developed. However, no set of essential universal domains have been accepted.

### Objectives

To systematically review and synthesize the literature to identify consistent domains that are included in spinal pain core outcome sets (COSs) to inform an essential universal set that is relevant to researchers and rehabilitation providers.

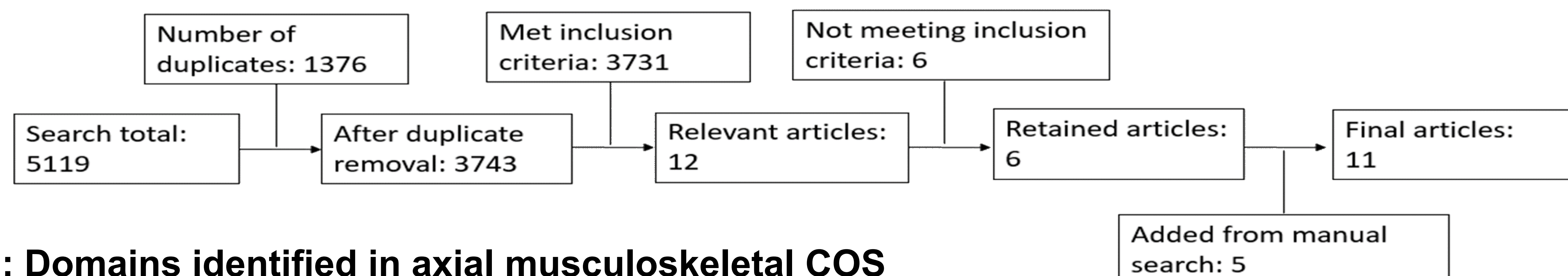
### Methods

- An electronic search was conducted for studies published in English or French from 2000-2020. Additional articles were identified through a manual search.
- The COS-STAR criteria were adapted into a scale and applied to each article. Those that rated 25 and above on the 50-point scale were considered to have high reporting quality.
- Consistency of outcome domains was defined as those appearing in greater than 50% of the COS's (≥5/9).
- COS domains were thematically grouped for ease of presentation.

### Results

11 COSs were identified (Graph 1) of which 2 were neck-specific adaptations of an original COS for LBP. Quality ranged from low (13/50) to high (50/50). From all COSs, 24 domains were identified with 7 being the most consistent (Table 1)

**Graphic 1: Flow of information through different phases of the systematic review**



**Table 1: Domains identified in axial musculoskeletal COS**

<sup>1</sup>: White et al. (2004) and Rebbeck et al. (2007) used a COS tool adapted from Deyo et al. (1998), so those were considered a single COS

LBP: low back pain; MSK: musculoskeletal; WAD: whiplash associated disorder

	DEYO 1998 LBP	WHITE 2004 Neck pain <sup>1</sup>	WAD <sup>1</sup> 2007 REBBECK	CIEZA 2004 LBP	PINCUS 2008 LBP	CLEMENT 2015 LBP	DEYO 2015 LBP	KLOKKERUD 2017 MSK diseases	CHAROTTO 2018 LBP	CHEN 2019 WAD	VERBURG 2019 LBP	TOTAL
<b>COS-STAR Score (/50)</b>	13	26	25	16	22	29	14	37	45	50	38	
<b>Domains</b>	Clinical Researchers	Routine clinical use										
Patient-rated physical function	X			X	X	X	X	X	X	X	X	9/9
Pain symptoms/Pain intensity	X				X	X	X	X	X	X	X	8/9
Participation (work or school)		X			X	X	X	X	X	X		7/9
Participation (activities of daily living)		X		X	X		X	X	X			6/9
Emotional functioning				X		X	X	X	X	X		5/9
Generic health status	X				X	X		X	X			5/9
Quality of life	X					X		X	X	X		5/9
Pain affect		X			X		X				X	4/9
Body structure or function/ Past medical history				X	X		X					3/9
Health resource utilisation (concomitant pain treatments)					X	X	X					3/9
Satisfaction with condition		X			X					X		3/9
Additional domains that appeared in 2/9	Fatigue, global perceived effects, no. of deaths, patient data, satisfaction with care, and sleep disturbance.											
Additional domains that appeared in 1/9	Adverse Outcome of Treatment, coping, environmental, nature of the condition, pain frequency, performance-based functional outcome, and satisfaction with social activities.											

### Discussion and Conclusion

- We identified several inconsistencies in the ways certain domains were defined and operationalized (e.g. quality of life) and clear theoretical frameworks were often absent.
- Some COSs have been refined or adapted since publication. We elected to consider all subsequent iterations as a single COS for this synthesis
- The results of our study may not be applicable to the entire axial pain population due to exclusion of rheumatological, visceral, neurological, and surgical conditions.
- Specific measurement tools have not been consistently identified for many domains. Further research is still needed on this topic.

These 7 domains may be useful as an essential COS for spinal pain: Patient-rated Physical Function, Pain Symptoms, Work/School Participation, ADL Participation, Emotional Function, Health Status, and Quality of Life