

Musculoskeletal Disorders: A Neglected Group at Public Health and Epidemiology Meetings?

Musculoskeletal disorders (MSDs) encompass a group of disorders linked anatomically and by their association with pain and physical function limitations. They are common in people of all ages and across sociodemographic strata.^{1,2} Osteoarthritis (OA) is the most common MSD and the most prevalent form of arthritis. The recent *Global Burden of Diseases, Injuries, and Risk Factors* study report notes that MSDs together, including OA, ranked first among the top causes of global years lived with disability, with MSD-related years lived with disability increasing by 61% from 1990 to 2013.³ The burden of MSDs was much larger than previously appreciated, and the report concluded that MSDs were not only an important contributor to the burden of disease but also a crucial component of health expenditure in many high- and middle-income countries.³ In the United States, MSDs have been estimated to cost more than \$300 billion annually in direct health care expenditures and in lost earnings, particularly through loss of productivity.⁴

WHERE ARE THEY HIDING?

Because of the overwhelming health, health care, and cost burden to the population, OA and other MSDs appeared to be disproportionately represented at a recent epidemiological scientific conference in North

America attended by two of the authors (A. V. P. and J. D. P.).

To put numbers to these perceptions, we sought to describe how much MSDs generally, and OA specifically, have been mentioned in abstracts and articles presented at public health and epidemiology conferences from 2011 to 2016.

THE FIVE-YEAR SEARCH

We searched for abstracts, including those for poster and oral presentations, presented at North American public health and epidemiology conferences that occurred between 2011 and 2016 using Google and by direct request from organizers if abstracts were not available online. We excluded conferences specific to a city, province, or state, and those specific to a discipline within public health or epidemiology.

We initially screened abstract titles using keywords potentially related to MSDs. If there was uncertainty, we reviewed the full abstract. The exception to this was for the 2011 Canadian Society for Epidemiology and Biostatistics Biennial Conference, for which only titles, and not full abstracts, were available. The keywords we used were “arthritis,” “arthro*,” “back,” “knee,” “bone,” “chronic,” “density,” “fracture,” “hip,” “joint,” “muscle,” “musculoskeletal,” “osteo*,” “pain,” and “rheuma*.” We designated an

abstract as an MSD-related abstract if one of the following was either the focus of the study or was included as a variable of interest (e.g., predictor, outcome): musculoskeletal disorders (e.g., arthritis) or injuries; musculoskeletal symptoms (e.g., low back pain); or bone density, disorder, or injury (e.g., fracture).

We designated an abstract as OA related if it explicitly referenced OA when describing the study population or variable of interest. Two authors separately completed the screening and categorization of abstracts. If we disagreed on whether to include an abstract, we discussed it until we reached consensus.

WE HAVE MADE CONTACT, BUT JUST BARELY

The online search returned lists of abstracts from 12 public health conferences and nine epidemiology conferences held in North America between 2011 and 2016 (Table 1). Ten (48%) of the conferences took place in Canada, whereas the other 11 occurred in the United

States. There were 45 171 abstracts presented in total, including oral and poster presentations. The number of abstracts per conference ranged from 144 to just more than 6200.

The proportion of abstracts related to MSDs ranged from 0% to 2.80% across meetings, with an overall proportion of 0.43% over the five-year period. The proportion of abstracts related to OA specifically ranged from 0% to 0.50% across meetings, with an overall proportion of 0.08% over the five years of our study (Table 1). Two of the 21 conferences included no MSD-related abstracts, and 10 included no OA-related abstracts.

PUBLIC HEALTH COMMUNITY, WE HAVE A PROBLEM

We have reported the number of abstracts presented at recent epidemiology and public health conferences in North America related to MSDs generally and OA specifically. The findings show that less than 0.5% and 0.1% of abstracts were MSD or OA related, respectively, whereas estimates indicate that the MSD prevalence in US adults and that of self-reported doctor-diagnosed arthritis (predominantly OA) exceeds 50% and 22%, respectively.^{1,2} Furthermore, although the prevalence of MSDs has steadily increased and is projected to

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TABLE 1—Volume of Musculoskeletal Disorder– and Osteoarthritis-Related Abstracts From North American Epidemiology and Public Health Conferences: 2011–2016

Conference	Abstracts		
	Total	MSD Related, No. (%)	OA Related, No. (%)
2016			
APHA, Denver, CO	5 947	28 (0.47)	5 (0.08)
CPHA, Toronto, ON	266	0	0
ECA, Miami, FL	1 982	16 (0.81)	4 (0.20)
2015			
APHA, Chicago, IL	6 213	12 (0.19)	0
CPHA, Vancouver, BC	288	0	0
CSEB, Mississauga, ON	295	5 (1.69)	1 (0.34)
SER Denver, CO	1 207	3 (0.25)	0
2014			
APHA, New Orleans, LA	5 838	17 (0.29)	4 (0.07)
CPHA, Toronto, ON	344	1 (0.29)	1 (0.29)
SER, Seattle, WA	772	3 (0.39)	0
2013			
APHA, Boston, MA	5 998	25 (0.42)	8 (0.13)
CPHA, Ottawa, ON	305	1 (0.33)	1 (0.33)
CSEB, St. John's, NL	202	5 (2.47)	1 (0.50)
SER, Boston, MA	700	6 (0.86)	0
2012			
APHA, San Francisco, CA	6 243	22 (0.35)	2 (0.03)
CPHA, Edmonton, AB	250	1 (0.40)	0
SER, Minneapolis, MN	687	3 (0.44)	1 (0.15)
2011			
APHA, Washington, DC	5 880	28 (0.48)	7 (0.12)
CPHA, Montreal, QC	346	2 (0.58)	0
CSEB, Montreal, QC	144	4 (2.78)	0
NACE, Montreal, QC	1 264	13 (1.03)	0
Total	45 171	195 (0.43)	35 (0.08)

Note. APHA = American Public Health Association; CPHA = Canadian Public Health Association; CSEB = Canadian Society for Epidemiology and Biostatistics; ECA = Epidemiology Congress of the Americas; MSD = musculoskeletal disorder; NACE = North American Congress of Epidemiology; OA = osteoarthritis; SER = Society for Epidemiologic Research.

continue on an upward trend,¹ our findings indicate that MSD-related abstracts represented 0.54% of all abstracts in 2016 compared with 0.62% in 2011.

The underrepresentation of MSDs at these conferences, relative to their prevalence and societal and economic costs, appears consistent with similar underrepresentation in the published health literature and

health research funding.^{1,5,6} Why MSDs and OA appear to be neglected relative to their population impact is not clear, but a likely significant contributing factor is the perception that OA and other MSDs are inevitable byproducts of aging. However, three in five people in the United States with doctor-diagnosed arthritis are younger than 65 years, for example.²

PUBLIC HEALTH IMPLICATIONS

MSDs can lead to chronic pain and disability and, in turn, to a cycle of increasing physical and mental multimorbidity, largely owing to physical functional limitations. This ultimately results in poorer health-related quality of life, increased mortality, and high individual and societal costs overall.^{1–4} Furthermore, because of ongoing public health campaigns emphasizing the need to engage in physical activity and the importance of maintaining mobility to improve and maintain good health, it is surprising that the conditions arguably contributing the most to limiting physical function in the population have received so little attention, particularly because they may prevent the attainment of the physical activity level recommended in guidelines. Moreover, there is evidence suggesting high rates of comorbidity among individuals with OA, and MSDs generally, including an increased risk of developing chronic conditions such as heart disease among those with OA.⁷ This further raises concern for the impact of MSDs and OA on overall population health.

We conclude that MSDs and OA receive far less attention in epidemiological and public health meetings than is warranted by their significant disease burden. We hope these findings pique the interest of public health professionals, organizations, scientists, and members of the public to consider MSDs and OA in the general discourse of public health and public health initiatives. **AJPH**

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A. V. Perruccio and C. Yip acquired the data and drafted the editorial. A. V. Perruccio and J. D. Power conceptualized and designed the editorial. E. M. Badley and J. D. Power critically revised the editorial for important intellectual content. All authors analyzed and interpreted the data and approved the final version of the editorial.

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