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LETTER

A Response to "Prevalence and Associated Factors of Musculoskeletal Disorders Among Cleaners Working at Mekelle University, Ethiopia" [Letter]

Budi Susatia[1]
Wiwin Martiningsih[1]
Heru Santoso Wahito Nugroho [2]

[1]Nursing Department, Poltekkes Kemenkes Malang, Malang, Indonesia; [2]Midwifery Department, Poltekkes Kemenkes Surabaya, Surabaya, Indonesia

Correspondence: Budi Susatia
Nursing Department, Poltekkes Kemenkes Malang, Jl.ijen-77c, Malang, Jatim 60282, Indonesia
Tel +62 341-566075
Fax +62 341571388
Email budisusatiabudisusatia@gmail.com

Dear editor

We have looked closely at the article on factors associated with the prevalence of musculoskeletal disorders experienced by cleaners at Mekelle University. In this case, musculoskeletal disorders were significantly influenced by six variables (work experience, working hours per-day, working hours in sustaining position, time pressure, awkward posture, and feeling exhausted); meanwhile there was one variable that had no effect on musculoskeletal disorders, namely physical exercise.[1]

There are three questions related to the results, namely: 1) Is it true that physical exercise has no effect on musculoskeletal disorders? 2) Is it possible that physical exercise affects musculoskeletal disorders indirectly through intermediate variables? 3) What further statistical methods can be used to analyze this indirect effect?

To answer them, we need to review the data analysis methods used by researchers. They used multivariate logistic regression, a method to analyze the effect of several independent variables simultaneously on dependent variable. Thus, it had been assumed that independent variables had a direct effect on musculoskeletal disorders.

Referring to the relevant references, the seven variables should not all directly affect musculoskeletal disorders. There are several variables that affect musculoskeletal disorders through intermediate variables, for example physical exercise affects feeling exhausted, furthermore feeling exhausted affects musculoskeletal disorders. Referring to similar cases even with different topics,[2] we present an alternative framework for the relationship between variables involving intermediate variables (Figure 1). Note: This framework should have been further corrected and revised by the researchers.

By considering Figure 1, the use of multivariate logistic regression is not sufficient, so that further analysis is needed to explain the pathways of influence. In this case, the appropriate statistical analysis to prove the existence of indirect effects is path-analysis.[2,3] Since the researchers used nominal scale data, one of the statistical programs that can be used is Smart-PLS.[3]

Furthermore, we suggest that researchers perform further analysis using path-analysis, to obtain more complete information about the effect of these seven variables on musculoskeletal disorders.

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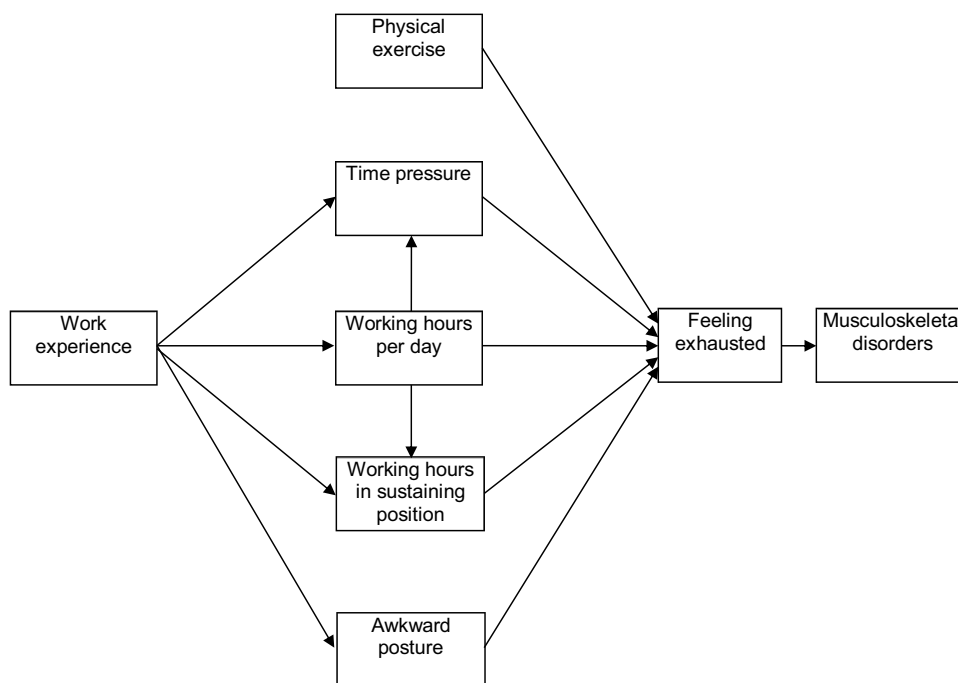
Figure 1 Pathways of influence of factors related to musculoskeletal disorders.
Notes: Adapted from Melese H, Gebreyesus T, Alamer A, Berhe A. Prevalence and associated factors of musculoskeletal disorders among cleaners working at Mekelle University, Ethiopia. *Journal of Pain Research*. 2020;13:2239–2246. © 2020 Melese et al Creative Commons Attribution – Non Commercial (unported, v3.0) License (http://creativecommons.org/licenses/by-nc/3.0/).[1]

Disclosure

The authors state that they have no conflicts of interest related to this communication.

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