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Abstract:

Covering letter

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Letter to the Editor of Public Health in response to ‘Religiousness and depressive symptoms in Europeans: findings from the Survey of Health, Ageing, and Retirement in Europe’

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With great interest, we read the article by Opsahl et al. (2019) in which they evaluate the longitudinal association between religiousness and depressive symptoms in Europeans aged 50 years and older. By means of multivariable logistic regressions, they looked at three measures of religiousness and tested whether they were associated with higher or lower odds of experiencing a specific symptom of depression (i.e. six out of 12 symptoms from the EURO-D scale). *Higher frequency of praying* was associated with lower odds of having no hopes for the future (odds ratio [OR] = 0.89, 95% confidence interval [CI]: 0.81 – 0.99) and of suicidal thoughts (OR = 0.84, 95% CI: 0.72-0.97). *Attending religious service* was associated with lower odds of having no hopes for the future (OR = 0.74, 95% CI: 0.67-0.83), suicidal thoughts (OR = 0.69, 95% CI: 0.59-0.81), difficulty in concentration (OR = 0.80, 95% CI: 0.72-0.88), irritability (OR = 0.77, 95% CI: 0.71-0.85), fatigue (OR = 0.84, 95% CI: 0.78-0.91) and having no enjoyable activity (OR = 0.84; 95% CI: 0.76-0.94). *Religious education* was associated with lower odds of not having engaged in any enjoyable activities lately (OR = 0.86, 95% CI: 0.78-0.95). Furthermore, they make the distinction between restful religiousness and crisis religiousness. The former was associated with lower odds of experiencing suicidal thoughts, of having been irritable recently and of having experienced fatigue in the last month, compared to the latter. Crisis religiousness was associated with higher odds of having been irritable recently and of having experienced fatigue in the last month, compared with non-religious individuals. The authors conclude that religiousness is associated with lower odds of depressive symptoms, in particular for those who attend religious service.

The article of Opsahl et al. (2019) addresses an important topic in the contemporary context of population ageing and increasing rates of depression, and we particularly applaud longitudinal studies trying to expand our knowledge on the social origins of depressive symptoms. However, we do have a few concerns on the methodology used in this study and the subsequent conclusions drawn.

The authors hypothesize that religiousness is positively associated with fewer depressive symptoms, particularly for those who attend religious service (Opsahl et al. 2019, p 112). They base their hypothesis on previous literature in which – according to the authors – religious service attendance is inversely associated with depression in both cross-sectional and longitudinal studies. A recent longitudinal study of Van Herreweghe and Van Lancker (2019), however, shows that the positive association between religious service attendance and mental health is the result of a spurious relationship, and when looking at within-individual changes over time, religious service attendance is even found to be associated with higher levels of depressive symptoms in Europeans aged 65 years and older.

Our main concern in the current study of Opsahl et al. (2019) is that they do not control for baseline or previous depressive symptoms, which is indispensable in the context of mental health (and possible with the data at hand). An inverse relationship between religiousness and depressive symptoms could

1 be the result of depressed individuals being more likely to stop attending religious services, and not
2 merely because of a protective effect of religious service attendance as such. Several studies have
3 highlighted this issue of reverse causality in the association between religiousness and mental health
4 (e.g. Li et al. 2016; Maselko et al. 2012, Vanderweele et al. 2016). While Opsahl et al. (2019) do use
5 longitudinal data, the lack of controlling for prior depressive symptoms or depression makes that no
6 suggestions can be made concerning the direction of causality between religiousness and mental
7 health (Vanderweele et al. 2016), which contradicts with the statements of the authors (Opsahl et al.
8 2019, p 117). Based on the analysis of Opsahl et al. (2019), we can solely conclude that there is a
9 longitudinal association between religiousness and mental health, which could be the result of true
10 causality (i.e. attending religious services leads to better mental health), reverse causality (i.e.
11 depressed individuals are less likely to attend religious services), a spurious relationship (i.e.
12 individuals who less frequently attend a religious service report higher levels of depressive symptoms,
13 for example, due to health problems) or selection effects (i.e. less depressed individuals are more
14 likely to attend religious services, and to continue to do so). Claiming that attending religious service
15 can be considered protective against depressive symptomatology (Opsahl et al. 2019, p 117) based on
16 their analysis, is therefore – in our opinion – problematic.

17
18 Second, we wonder why the authors choose to compare the restful religious versus all other
19 participants, the restful religious versus the crisis religious, and the crisis religious versus the non-
20 religious, but did not compare the restful religious versus the non-religious. This comparison would
21 have truly reflected the effect of religious service attendance on depressive symptomatology and
22 strengthened the evidence for an inverse association between religious service attendance and
23 depressive symptoms.

24
25 Our last concern relates to the outcome variables. Six symptoms out of 12 from the EURO-D scale
26 were selected to test their association with the three measures of religiousness. These include hopes
27 for the future, suicidal thoughts, irritability, fatigue, concentration and enjoyment. Items of the
28 EURO-D that are chosen to be excluded in this study are depression, pessimism, guilt, sleep, interest,
29 appetite and tearfulness. The authors selected the symptoms “because of their tendency to cluster
30 around the ‘depressed affect’ factor in the original development and validation study by Prince et al.
31 (1999)” (Opsahl et al. 2019, p 113). Looking at the original study of Prince et al. (1999), we see that
32 pessimism and suicidal thoughts were found to load on depressed affect but far less consistent
33 compared to depression and tearfulness, which are both not included in the study of Opsahl et al.
34 (2019). Interest, concentration and enjoyment items, on the other hand, are included in the study of
35 Opsahl et al. (2019) but were actually found by Prince et al. (1999, p 333) to load on a second factor,
36 i.e. motivation. A more clear and reasoned explanation for the choice of outcome variables is needed.
37 While it’s clear that the purpose of the study was by no means identifying or diagnosing a clinical
38 depression, we regret that the authors did not attempt to clarify why different depressive symptoms

are related to religiousness and why others are not, or perhaps in a different way and through different mechanisms.

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