BJPsych Open S49

**Results.** The greatest decrease was seen for Bahrain which is (-5.2%) followed by Qatar (-3.2%) and United Arab Emirates (-3%). However, the largest increase was observed for Saudi Arabia (2.7%), followed by Kuwait (1.1%) and Oman (0.7%). The reduction in the prevalence of depression disorder seen in Bahrain, Qatar and United Arab Emirates shows a significant achievement in mental health diagnosis, prevention, and treatment. **Conclusion.** However, further studies are required to better understand the drifts in the GCC countries. Furthermore, governmental funding for academic and research mental health programs is highly recommended.

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## Association Between Females and Males in the Prevalence of Depression in the Gulf Cooperation Council (GCC) Countries

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**Aims.** In most populations, the prevalence of depression is more significant in women than in men. Nonetheless, the degree of gender disparity varies significantly across countries. The aim of this study is to consider the role of gender inequality in explaining these differences in the Gulf Cooperation Council (GCC) countries.

**Methods.** Data on the ecological prevalence of depression (males versus females) from 1990–2019 from the GCC countries were downloaded from Our World in Data and included in the statistical analysis. A mixed-effects linear model was used to examine the association between males and females, i.e. females regress on males. Year and country variables were used as random effect variables.

**Results.** The prevalence of depression in the GCC countries shows a gender-specific pattern with a higher prevalence in females than in males 1.218 (95% CI: 1.149–1.285), p-value < 0.001. Higher levels of depression between men and women were observed in Kuwait and Saudi Arabia compared with the other four countries. The lowest depression prevalence was observed in the United Arab Emirates.

**Conclusion.** The pattern of depression in the GCC countries is based on gender. However, the association between global measures of gender inequality and the gender gap in depression may depend on how the level of depression is measured. More research is needed to investigate the mechanisms that underlie the gendered nature of depression prevalence.

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## Vitamin-D Deficiency & Depression: Is There an Association? Average Data From Gulf Cooperation Council Countries

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Aims. The evidence for the association between vitamin-D deficiency and depression, although equivocal, has been established in several populations in different countries and supported by meta-analytical studies<sup>1</sup>. Much of the evidence for this comes from Western countries<sup>2</sup>. Similarly, the evidence for the benefits of supplementation, although shown, also comes from similar populations and is equivocal<sup>3</sup>. Need for data from different populations and for randomized controlled trials to establish causality is stressed by most researchers. This study aims for presentation reviews of the association between vitamin-D and depression in the GCC, using the publicly available data of Our World in Data. Methods. The statistical analysis used median prevalence depressive disorders data (from 1990-2019) in the GCC countries (both sex and age-standardized (%)), which was downloaded from Our World in Data and was last updated on August 28, 2022. Vitamin D deficiency data were collected through a literature review search using PubMed and Google Scholar. A linear regression model was performed with the median prevalence of depressive disorders data as an outcome. The prevalence of vitamin-D deficiency, population median age and the interaction term between prevalence of vitamin-D deficiency and population median age were used as predictors. The effects of prevalence of depressive disorders both sex age standardized (AS) percentage (%) were estimated with 95% confidence interval (95% CI) using bootstrap covariance matrix estimator. Fitted model's likelihood ratio chisquare (LR  $\chi^2$ ) test with corresponding p-value was computed and reported.

**Results.** A positive association was observed between the median prevalence of depressive disorders and the prevalence of vitamin-D deficiency, adjusted for population median age, were observed (LR  $\chi^2$  p-value = 0.005) and adjusted R<sup>2</sup> = 0.706.

**Conclusion.** Prevalence of depressive disorders was associated with prevalence of vitamin D deficiency among the population of GCC countries. Future randomized control trials on Vitamin D supplementation are needed to confirm these observations.

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## Familial Clustering of Adolescent Emotional Problems in a Nationally Representative Sample in Britain: A Multilevel Investigation

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