

Letter to the editor: Effect of night shift on development of metabolic syndrome among health care workers

To the Editor,

We read with great interest the paper “Effect of the night shift on development of metabolic syndrome among health care workers” by Bahinipati *et al.*^[1] published in your prestigious journal. It highlights the development of certain markers and risk factors, which could lead to the development of metabolic syndrome (MS) in night shift workers. We concur with the finding that hypercortisolism and raised proinflammatory markers lead to the development of MS in night shift workers. We believe there are a few ideas worth mentioning that could boost the quality of the overall article.

This study firstly depicted the association of MS in night shift workers in a large cohort and gave novel insights into this field. Although several potential confounders were controlled for in this study, including high-sensitivity C-reactive protein (Hs-CRP) as a proinflammatory marker, fasting blood sugar (FBS), serum triglycerides (TG), and high-density lipoprotein (HDL), the findings hardly seem to support causal relationships.

Regarding the discussion of the article, the authors mentioned two proteins: circadian locomotor output cycles kaput (CLOCK) and nocturnin, which are crucial in controlling dietary lipid absorption and controlling circadian rhythms. We found that Bmal1 plays a significant role in the regulation of fat storage, metabolism, and adipocyte differentiation in addition to CLOCK and nocturnin. Its overexpression causes adipocytes to produce more lipids.^[2] Other genes and proteins that affect circadian rhythms include REV-ERB alpha, which controls circadian rhythms and is associated with liver lipid metabolism.^[2]

Additionally, because women made up the majority of the study participants, circadian dysregulation contributes to the development of PCOS. In women with PCOS, the prevalence of MS can reach 33%, and it is linked to long-term complications such as cardiovascular disease (CVD), type II diabetes, malignancies, sleep apnea, and psychiatric issues.^[3] HMWA/HOMA-IR ratio is also a sensitive test for the prediction of MS. The HMWA/HOMA-IR ratio is a biomarker for MS that circulates and requires little to no intrusive testing and may be clinically relevant in predicting patient outcomes.^[4]

Moreover, high night shift frequency workers are more susceptible to more severe circadian rhythm disruption because they maintain a desynchronized circadian rhythm even on their off days.

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Conflicts of interest

There are no conflicts of interest.

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References

1. Bahinipati J, Sarangi R, Pathak M, Mohapatra S. Effect of night shift on development of metabolic syndrome among health care workers. *J Family Med Prim Care* 2022;11:1710-5.
2. Shi D, Chen J, Wang J, Yao J, Huang Y, Zhang G, *et al.* Circadian clock genes in the metabolism of non-alcoholic fatty liver disease. *Front Physiol* 2019;10:423.
3. Chandrasekaran S, Sagili H. Metabolic syndrome in women with polycystic ovary syndrome. *Obstet Gynaecol* 2018;20:245-52.
4. de Abreu VG, Martins C, de Oliveira P, Francischetti EA.

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High-molecular weight adiponectin/HOMA-IR ratio as a biomarker of metabolic syndrome in urban multiethnic Brazilian subjects. *PLoSOne* 2017;12:e0180947.

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