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LETTER

Regarding: "The Association Between Smartphone Use and Breast Cancer Risk Among Taiwanese Women: A Case-Control Study" [Letter]

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Dear editor

This letter is regarding our concerns regarding the paper entitled "The Association between Smartphone Use and Breast Cancer Risk among Taiwanese Women: A Case-Control Study" by Shih et al, published in Cancer Management and Research.[1] Although this paper addresses a very important topic, it has some shortcomings that at least to some extent, affect its conclusion. In their case-control study on 894 healthy controls and 211 patients with breast cancer, the authors had asked the participants to provide information on their sleep quality, smartphone addiction, and smartphone use. Shih et al. concluded that heavy smartphone use could be linked to increased breast cancer risk, particularly in phone-addicted individuals, and in cases who had placed their smartphones at a close distance with their breasts and those who used to use their smartphone before bedtime.

The 1st major shortcoming of this study comes from ignoring the protective role of smartphones' blue light filters (night mode or night shift). These applications which are available in almost all modern smartphones shift the color tone of the displays of smartphones. By using these applications, not only detrimental high-energy visible (HEV) light is converted to longer wavelengths (eg orange, red, or yellow), screen brightness is reduced to protect retina penetrating blue light.[2] Recent studies indicate that awareness about night mode can be associated with poor sleep quality.[3] Regarding night shift mode, new studies show that changing the spectral composition of digital displays without changing their brightness settings may be insufficient for preventing melatonin suppression.[2] Given this consideration, a lack of information about the pattern of "blue light filter" used by all study participants (patients and controls), has possibly affected the conclusions.

Another shortcoming is the lack of data about the intensity of light in the environment before bedtime. A report published as a Harvard Health Letter states "Even dim light can interfere with a person's circadian rhythm and melatonin secretion. A mere eight lux—a level of brightness exceeded by most table lamps and about twice that of a night light—has an effect".[4] Moreover, the authors have not paid enough attention to this key point that exposure to bright light during the day, improves one's ability to sleep at night. Altogether, we believe that these flaws have impacted the overall conclusions.

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Disclosure

The authors have no conflicts of interest.

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