

A10 Darkness and screen light exposure: Its role in psychosocial factors among pregnant women in Kuala Lumpur

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Light exposure at abnormal timings has been associated with the disruption of circadian rhythm which causes the elevation of depression, anxiety, and stress (DAS) among pregnant women. This study is part of a prospective observational study among the MY-CARE cohort to determine the association of light exposure with psychosocial factors among pregnant women. A total of 117 pregnant women in their second trimester were recruited from government clinics and answered self-administered questionnaires for light and psychosocial factors assessment. The average duration in hours for sunlight exposure was 3.45 ± 1.75 , low intensity artificial light was 0.90 ± 1.80 , high intensity artificial light was 4.91 ± 1.80 , darkness was 7.51 ± 1.81 , while screentime was 6.75 ± 4.68 . Results showed that longer hours in darkness were associated with lower anxiety scores ($r = -0.341$, $p < 0.001$) while longer hours in indoor natural light was linked with higher anxiety scores ($r = 0.236$, $p = 0.014$). Median DAS scores (6.00, 6) were lower in total darkness as compared to exposure to screen light in darkness (10.00, 10) from 12 a.m. to 3 a.m. ($p = 0.034$). Stress scores were significantly different at 3 a.m. to 6 a.m. ($p = 0.046$) between darkness (median score 6.00, IQR=8) and screen light in darkness (median score 10.00, IQR=11). Similarly, significant difference was observed in anxiety scores at 3 a.m. to 6 a.m. ($p = 0.024$) between darkness (median score 6.00, IQR=6) and screen light in darkness (median score 11.00, IQR=13). Multiple linear regression showed that longer hours in darkness resulted in lower total DAS scores ($\beta = -1.498$, $p = 0.039$). In conclusion, longer period in darkness had positive effect in psychosocial factors while screen light in darkness causes elevated DAS levels. Future studies can be conducted to explore the role of environmental light with hormonal levels among pregnant women and its implication to fetal programming.