Sleep patterns in children and teenagers could indicate risk for depression

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Sleep patterns can help predict which adolescents might be at greatest risk for developing depression, a researcher at UT Southwestern Medical Center has found in a five-year study.

Sleep is a biological factor known to be associated with adult depression. Depressed adults experience rapid-eye-movement (REM) sleep earlier in the sleep cycle than people who are not depressed. Until this study, available online and in the July edition of *Neuropsychopharmacology,* it had been unclear whether this relationship held true in adolescents.

Dr. Uma Rao, professor of psychiatry at UT Southwestern and lead author of the study, found that adolescents with a familial risk for depression but without a depression diagnosis experienced shorter REM latency, meaning they reached the REM stage more quickly. Those adolescents were more likely to develop depression by the end of the five-year study period than those who reached REM sleep later in the cycle.

"Sleep is probably more helpful in determining who is at risk for developing depression than in being a diagnostic marker for depression since REM latency of those adolescents was shorter before they even developed the illness," Dr. Rao said.

Adolescent depression is complex to prevent and to treat in part because baseline levels of sleep and other factors used to diagnosis depression are not clearly defined. For example, in clinical studies, adolescents without

manifestation of mental illness can be labeled erroneously as control group members because they haven't yet reached the highest-risk period for developing depression - mid- to late-adolescence and early adulthood.

"Comparing these younger adolescents to those already showing depression obscures study results and can affect our understanding of the underlying mechanisms for depression as well as its treatment," Dr. Rao said. "Long-term studies may be helpful in determining which research participants should be considered as part of the control group. This study is an initial step in determining baseline measures that differentiate healthy adolescents from those who are likely to develop depression, bipolar disorder and other mental diseases as they get older."

Researchers also studied another biological factor known to be associated with adult depression - cortisol, a hormone that is increased when humans are under stress. Evidence in adults shows that increased cortisol levels are related to depression and that cortisol is reduced even before outward signs of depression, such as feelings of sadness, wane. High cortisol levels in remitted patients can help determine who is at risk for relapse of depression.

At the start of the study involving 96 adolescents with no evidence of depression or other psychiatric disorders, researchers monitored the sleep cycles of participants for three days and collected saliva and urine samples to record cortisol levels. The teens were then monitored for up to five years.

In addition to the sleep finding, researchers found that at the end of the five-year study period, adolescents with higher cortisol levels were more likely than others to develop depression.

"Depression is not mediated by sleep alone," Dr. Rao said. "If we can

identify factors such as sleep and cortisol and their role, we could start the prevention process before the disease leads children and teenagers down a path well behind their peers educationally and socially."

Currently, Dr. Rao is using magnetic resonance imaging techniques and neuropsychological factors to study their impact on the risk for depression and addictive disorders and to identify youngsters who are likely to respond better to antidepressant medications.

Source: UT Southwestern Medical Center (news : web)