Treating sleep problems may be important in schizophrenia

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A study of schizophrenia patients has found profound disruptions in their sleep patterns, with half also having irregular body clocks that are out of synch with the pattern of night and day.

The Oxford researchers argue that the extent and severe nature of these long-term sleep problems should be considered for treatment along with the other symptoms of schizophrenia, as they have such a strong impact on mood, social function, mental abilities and quality of life.

‘The people in our study were stable in mood, taking medication and yet they still experienced enormous sleep problems,’ says first author Dr Katharina Wulff of the Nuffield Department of Clinical Neurosciences at the University of Oxford.

‘Clinicians may need to start thinking about treating their patients’ sleep problems as well, or refer them to sleep specialists,’ she suggests.

The Oxford University-led study, with colleagues from UCL and the University of Surrey, is published online by the British Journal of Psychiatry.

It was funded by European Commission, the Wellcome Trust, Oxford Biomedical Research Centre, and the UCLH/UCL Biomedical Research Centre.

The researchers found severe disruption in the sleep patterns of all 20 patients with schizophrenia in the study, despite their mood being stable and each being on a regular drug regime.

All those with schizophrenia took longer to fall asleep, spent longer in bed, slept longer and had much more variable sleep patterns, compared with a control group of 21 healthy unemployed people.

The variable sleep patterns are unlikely to be simply due to those with schizophrenia having unstructured days without any routine, since those in the control group may also not have a pattern to their daily lives.

The sleep problems also appear to be unrelated to the different drugs those with schizophrenia are taking.

Ten of the patients also had disrupted body clocks.

Their internal 24 hour rhythm was delayed compared with all the others, or longer than 24 hours.

They often ended up sleeping at times other than night time, either only getting to sleep after 4am and getting up in the afternoon or having ‘free-running’ sleep patterns unrelated to the 24 hour day.

Although the researchers have provided strong evidence of a correlation between schizophrenia and severely disrupted sleep patterns in these patients, they have not demonstrated a causal link between the two.

They are using animal models of schizophrenia to examine if there are alterations in biological pathways known to be involved with regulating the body clock.

And it may be possible for future studies to follow people at risk of schizophrenia with sleep problems to see if this can be a factor in developing the condition.

Schizophrenia can cause a range of different symptoms including hallucinations, delusions, muddled thoughts, and changes in behaviour.

The cause of schizophrenia is unknown, but may be down to a combination of genetic and environmental factors.

Up to around 1 in 100 people are estimated to experience schizophrenia in their lives.

Sleep disturbances are thought to be common in many mental health conditions, including schizophrenia.

But this is one of the first studies to provide hard evidence as well as look for body clock abnormalities.

Professor Russell Foster of Oxford University, who headed the research group, says: ‘Patients often complain of being so tired they can’t concentrate, can’t work, that dealing with their sleep problems would make life so much better.

There are also lots of anecdotal stories from psychiatrists of patients being unable to settle to sleep and running around all night, or not turning up to consultations organised for mornings.

‘We now know many of the patients are also essentially suffering persistent jetlag with their body clocks out of synch with day and night.

This immediately opens up a lot of new avenues for research in understanding the links between sleep problems and mental illhealth.

But regardless of whether or not there is a mechanistic link between the body clock and psychiatric conditions, it is clear that treating sleep problems could improve the lives of many patients.

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**Notes for editors**

* Twenty schizophrenia patients from West London participated in the study. They were clinically stable and their medication had been unchanged for three months. They all thought they had some level of problems with sleep. The control group was 21 healthy, unemployed people from the same area of London.
* The participants wore special wrist watches for six weeks that recorded when they were asleep and when they were awake. The rise and fall of the participants’ body clocks were monitored by measuring levels of melatonin byproducts in urine samples each week.
* The paper ‘Sleep and circadian rhythm disruption in schizophrenia patients’ by Katharina Wulff and colleagues is to be published in the British Journal of Psychiatry.
* The study was funded by the European Commission, the Wellcome Trust, Oxford Biomedical Research Centre, and the UCL/UCLH Comprehensive Biomedical Research Centre.
* **The Wellcome Trust** is a global charitable foundation dedicated to achieving extraordinary improvements in human and animal health. It supports the brightest minds in biomedical research and the medical humanities. The Trust’s breadth of support includes public engagement, education and the application of research to improve health. It is independent of both political and commercial interests. [www.wellcome.ac.uk](http://www.wellcome.ac.uk)
* The **NIHR Biomedical Research Centre**, Oxford is a partnership between the research expertise of the Oxford Radcliffe Hospitals NHS Trust and the University of Oxford. Its main aim is to enable clinical research for patient benefit and foster innovation to improve healthcare. It is funded by the National Institute for Health Research (NIHR). The NIHR provides the NHS with the support and infrastructure it needs to conduct first-class research funded by the Government and its partners alongside high-quality patient care, education and training. Its aim is to support outstanding individuals (both leaders and collaborators), working in world class facilities (both NHS and university), and conducting leading edge research focused on the needs of patients.
* **UCLH/UCL National Institute for Health Research Biomedical Research Centre (BRC)** was established in 2007 and is at the forefront of research into some of the major causes of illness and disease-related death. The BRC, which has invested over £100m in new experimental medicine research projects, staff, equipment and facilities, was recently awarded a further £98million in government funding from the National Institute for Health Research. The BRC focuses on a range of advances in medical research that will have a direct impact on patients' care and quality of life, and will also save many lives. These include cancer, cardiovascular disease, infectious disease, women's health, oral health and neurological diseases such as epilepsy, stroke and multiple sclerosis.
* **Oxford University’s Medical Sciences Division** is recognized internationally for its outstanding research and teaching, attracting the brightest minds from all over the world.  
    
  It is one of the largest biomedical research centres in Europe, with over 2,500 people involved in research and more than 2,800 students, and brings in around two-thirds of Oxford University’s external research income. Listed by itself, that would make it the fifth largest university in the UK in terms of research grants and contracts.  
    
  Oxford is home to the UK’s top-ranked medical school, and partnerships with the local NHS Trusts enable patients to benefit from the close links between medical research and healthcare delivery.  
    
  14 winners of the Nobel Prize for Physiology or Medicine worked or were educated at Oxford, and the division is home to 29 Fellows of the Royal Society and 68 Fellows of the Academy of Medical Sciences.  
    
  The development of penicillin at Oxford ushered in the modern age of antibiotics, and the confirmation of the link between smoking and cancer has prevented many millions of deaths. Oxford continues to be at the forefront of medical research, whether it’s the genetic and molecular basis of disease, the latest advances in neuroscience, or clinical studies in cancer, diabetes, heart disease and stroke. Oxford has one of the largest clinical trial portfolios in the UK and great expertise in taking discoveries from the lab into the clinic.  
    
  A great strength of Oxford medicine is its long-standing network of clinical research units in Asia and Africa, enabling world-leading research on the most pressing global health challenges such as malaria, TB, HIV/AIDS and flu. Oxford is also renowned for its large-scale studies which examine the role of factors such as smoking, alcohol and diet on cancer, heart disease and other conditions.