

Managing Depression: Longitudinal Case Study on Diet, Activity, and Sleep

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Recent psychoeducational programs targeting schools offered by NGOs in developed countries are now claiming that Depression and Anxiety are all externally triggered, and have little to do with any neurochemical imbalance (CHCS, 2014), and with proper adjustment of social situations people can prevent or rectify these forms of mental illness. On the one hand, there is plenty of evidence that external cues can trigger anxiety and depression (Taylor, Lichstein, Durrence, Reidel, & Bush, 2005); however, there is still a huge body of research that supports psychopharmacological approach to the more severe forms of these illnesses, with solid empirical evidence that neurochemicals are imbalanced and can be corrected through medical intervention (Vilhelmsson, Svensson, & Meeuwisse, 2013). This paper will examine 8 families in a longitudinal case study analysis spanning 25 years where diet, levels of activity, and sleep variations help prevent depression and anxiety from developing in an attempt to manage the illnesses without medical intervention, to shed light on when psychopharmacology is appropriate and when it may not be.

Keywords: depression, diet, sleep

Introduction

The biological connections between sleep patterns, what we eat, what time we eat it, and mental and physical activity levels and their impact on our circadian rhythms have a long history, and has been applied to industrial settings since the 1980's. For example, with those who work in the airline industry who require shifting timezones on a regular basis (Ehret & Scanlon, 1987). However, these manageable aspects of life (diet, activity levels and sleep cycles) have had little application in the field of depression and anxiety management in the refereed published research arena. This study seeks to rectify this imbalance, by examining these areas in families with experience in self-management of these illnesses over long periods of time, and for many generations, to examine the trends and as well as medicinal options they have considered or tried. Psychopharmacology is a field based in empirical evidence and in developed countries where drugs are first scrutinized for their efficacy in many studies and trials with human subjects before being allowed to be released onto the market, this is not always the case in developing countries. The evidence is clear that in certain types of cases with severe cases of depression and anxiety, medicine can help correct the neurochemical imbalances and help patients get back on the path to wellness (Vilhelmsson, Svensson, & Meeuwisse, 2013).

In the cases being examined in this study, we look at the social or external triggers, and the factors that predispose someone to depression and anxiety, and the strategies the families have used to minimize the frequency and episodes of depression and anxiety over time. In the 1980's research was conducted by a team of Professors at the Sleep Clinic at the University of Memphis (1980-1993a)¹. One of the author's of this article became involved as an assistant monitoring the sleep patterns of patients/subjects involved in these studies. Although RET (later to become CBT) was the preferred therapeutic intervention for depressed clients at the time, and was used regularly in the university Clinic at the Psychology Department, it was clear that disruption of sleep patterns was a significant factor in many cases of depression. More recently Taylor et al. (2005) examine the triggers or cues that can be involved in such cases.

During the research seminars attended by the graduate students in the Cognitive Science area in the Department of Psychology, the rate of graduate students experiencing depression and suicidality (75% of all graduate students will experience either anxiety or depression by the time they graduate with their PhD) was well documented and discussed, with strategies for us to improve or maintain our health, along the way to completing our PhDs. External cues, alterations in sleep patterns, and eating habits were all discussed regularly. In fact, one professor who, like Einstein, would take power naps throughout the day, and had a sofa in his laboratory for that purpose. All the graduate students knew not to disturb him if the "sleeping go away" sign was on his door. His struggle with depression, as a result of this disruptive sleep pattern, was well known, and discussed regularly by other faculty and students (University of Memphis, 1980-1993b)².

Recently a Psychiatrist went looking for the incident rates of Schizophrenia in the great creative minds that produce literature through the ages (Kyaga, 2012); however, she expanded her study to include all creative types, and all types of mental illness, and discovered that the more creative a person is, the higher the incidence of depression and anxiety. Frustration from unfulfilled goals and ongoing criticism were cited in the BBC program viewed on television in 2014. Generally, mood disorders were more prevalent in those most productive in terms of their creativity, regardless of whether it was literature, performing or visual arts, or other types of writing/authorship such as that found in academia. Evidence from Kyaga's work suggests heredity as a factor, but it is unclear to what extent biological or social factors play in those intergenerational effects. In honour of those families who include those great creative minds whose dedication to their work has meant a constant struggle with mental illness, this study will seek to examine both external and internal triggers, examining trends in the cases and what strategies these families have used to manage depression and anxiety, in the hope that this information will be useful to others with similar experiences.

Methodology

Subjects

Longitudinal exploratory research was conducted over 25 years examining members of 8 families who have 3 or more members who suffer from depression and anxiety across three generations. Yin (2013) suggests that a minimum of 5 cases is required for the examination of trends when investigating relationships between variables involving human behaviour.

¹ Sleep Clinic, Department of Psychology Sleep Studies. University of Memphis.

² Cognitive Science Seminars, Cognitive Science Laboratories, Department of Psychology, University of Memphis.

Procedures

Data was collected in personal interviews with family members similar to the 360 degree performance evaluation protocol, such that all types of familiar relationships were explored. Specifically, parent-child, spouse-spouse, grandparent-child and grandchild, across all three generations were examined, and uncle-aunt, with in-law relations included when present.

Materials

Semi-structured interview protocols were used to investigate issues found in the Beck Anxiety Inventory and the Beck Depression Inventory (Simmons, Wilkinson, & Dubicka, 2015) including patterns of sleep, levels of activity, and eating habits. History of prior diagnosis of depression and anxiety, treatment, and efficacy of various types of treatment engaged in was collected.

Results

Habits and Schedules

When subjects maintained regular routines or habits related to the time of day they went to sleep and woke up, when they ate meals, and when they were mentally or physically active, levels of anxiety and depression were significantly decreased over the 25 years of data collected.

Diet

The type of foods consumed during the day also played a major role in the differences noted in anxiety and depression levels in the subjects. Although culturally most subjects in the study were raised with consuming high carbohydrate meals at breakfast and lunch, and high protein meals in the evening, with all 8 families, when this was reversed and high protein meals were consumed for breakfast and lunch, with high carbohydrate evening meals, a significant reduction was observed in the overall levels of anxiety and depression.

Caffeine intake was also examined as a potential contributor to levels of anxiety and the shifts in sleeping schedules exhibited in clinical depression. Based on the data collected, when caffeine was consumed after noon on a regular basis, the impact upon sleep schedules exacerbated the levels of both anxiety and depression in the subjects. Consumption monitored included coffee, tea, chocolate, Nutella spread, and caffeinated soft drinks.

Activity Levels

Both mental and physical activity levels were examined in terms of the time of day subjects engaged in different types and levels of strenuousness, with more complicated cognitive tasks compared to lower cognitive tasks, and more intense physical tasks compared to less intense physical tasks being examined in subjects' daily routines, across varying levels of depression and anxiety over the years. When activity levels were high but consistently achieved at the same time of day throughout the week, levels of anxiety and depression were not impacted significantly compared to those whose activity levels were inconsistent and not in a routine. Specifically, of higher activity levels of either physical or mental tasks were engaged in later in the evening, as well as spread out throughout the hours of the day, the levels of anxiety and depression were increased significantly in the subjects overall.

Shift Work

Another trend in the data collected involved work schedules, as typically work environments are both physically and mentally higher activity levels compared to outside work hours. When subjects maintained the same schedule, regardless of which shift they worked, lower levels of depression and anxiety were observed in the data. However, for those with rotating shifts, levels of overall depression and anxiety were extremely high. For those whose shifts alternated less often (2 or 3 times per year) levels of anxiety were in the lower range compared to those who alternated shifts 2 or 3 times per month, where subjects had higher overall levels of both anxiety and depression. Earlier generations learned from this and encouraged later generations to self-manage by avoiding jobs involving alternating shift work, as they knew it would lead to higher levels of depression, suicidality, and/or anxiety in their family members.

Hormonal Interference

For those experiencing unusual hormonal disturbances, for example, going on birth control pills, or hormonal implants, long-term hormonal injections, hormone replacement therapy, pregnancy, and pubescence, the overall levels of depression and anxiety were increased, compared to those who were not experiencing these life altering events. In one family where 4 generations of females reported extremely high levels of post-partum depression, higher physical and mental activity levels after birth, engaging consistently at the same time of day on a daily basis, was one way they prevented the onset of the illness, and combined consumption of high levels of caffeine (iced tea) before noon.

Medication

For many of the subjects interviewed, medication was prescribed by a physician, psychologist or psychiatrist when the levels of anxiety or depression were severe as assessed on psychometric tests, but many of these made the symptoms worse, and increased suicidality in many cases. Although many attempts were noted in the data, because the families had a history of these illnesses, and were more aware of this potential, lines of communication were kept open and support was very strong among family members experiencing symptoms, and regular check-ups with the prescribing physician or health care professional also increased the ability for the subjects to regain control over their lives and manage their illness. In a few cases the type of medication was altered, and those who followed the instructions of the mental health professional during this time had better outcomes than those who attempted to come off the medication too quickly, often resulting in higher rates of suicidal ideation as reported by family members. Memory loss was noted by many subjects for periods on medication, with one reporting being the maid-of-honour at a friend's wedding and having no memory for that event during which she was on an antidepressant. Many family members expressed the opinion that the medication is required in severe cases to "kick start" the hypothalamus in the "right direction", but emphasized that most of these medications clearly state in the information provided by the manufacturer that they are only for short-term use, and many of these subjects had been on them for several years.

Conclusions

According to the research on the neurological impact of long-term anti-depressant medication, growth inhibition and impairment of brain functions can result (Russo-Neustadt, & Chen, 2005). Families emphasized the need for physicians to have more awareness and monitoring of the duration of medication, and to regularly check with therapists who should work in conjunction with the prescribing physician to ensure progress is

being made to reduce levels of depression and anxiety and come off the medications when lower levels of depression and anxiety are reached. Critical stages in therapy (for example the euphoria of moving between the 1930's and 1920's on the BDI during recovery) have been noted in the research (Culpepper, Clayton, Lieberman, III, & Susman, 2008), so communication between health professionals across disciplines is critical especially when suicidality has been noted.

Neuropsychological research on the regulatory systems of the hypothalamus and the impact on circadian rhythms have long been established (Saper, Scammell, & Lu, 2005); however, longitudinal studies on the dietary impact of caffeine on these natural rhythms and the resultant relationships to levels of anxiety and depression have not been examined. This study has examined the efficacy of self-management across generations in several families with regard to eating, sleeping, and activity levels. Awareness of the ability to self-manage lifestyle choices and prevent alterations of sleep and dietary impacts upon the hypothalamus, keeping routine schedules for work and other activities which reduce potential for depression and anxiety in families across generations can reduce the need for medicinal interventions.

Psychoeducation, increased awareness of what triggers depression and anxiety in terms of signals being sent to the hypothalamus is important for a person to feel empowered to prevent mental illness and manage their mental health based upon personal choices, such as when they eat, what they eat, when they have caffeinated drinks, when they sleep and when they work or exercise their minds or bodies. The authors hope that this research will help other families who suffer from these illnesses to begin to reflect on the stressors of daily life and to embrace routine as a way of self-managing a healthy and rewarding life.

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