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Best Regards,

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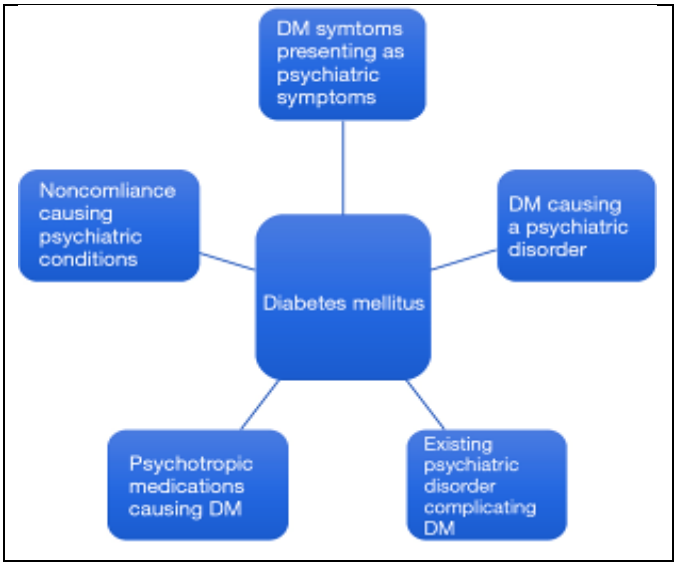
1. Investigation of the prevalence of anxiety and depression and their predictors in gestational diabetes

Introduction

Diabetes is one of the most frequent metabolic illnesses during pregnancy, with three types (type 1 diabetes, type 2 diabetes, and gestational diabetes). Although type 1 and type 2 diabetes are widely recognized, gestational diabetes mellitus (GDM) is a type of carbohydrate intolerance that is initially identified during pregnancy and can result in hyperglycemia.[1] In several studies, it was shown that women with GDM had a higher prevalence of depression than pregnant women in good health; in other research, however, no discernible differences were detected. Further, anxiety disorders are also common in diabetic pregnant women due to first pregnancy, history of caesarean section, low education, and low income. However, the symptoms of anxiety in women with GDM have not been extensively studied.[2] It is significant to manage the mental health of diabetic pregnant women as it can lead to obstetric, preterm birth, and neonatal complications. Moreover, the majority of earlier research has focused on either GDM or pre-existing diabetes in pregnancy independently, without comparing the mental health of those who have both illnesses, which was another important factor to take into consideration. Additionally, there has been significantly less research done on the prevalence of these mental health conditions in terms of their nature and predicting factors.[1] So, this study examined the prevalence of anxiety and depression in pregnant diabetic women as well as the factors that predict these conditions.



Methods

In this cross-sectional study, 350 pregnant women with gestational or pre-pregnancy diabetes are included. Self-efficacy, medication adherence, partner social support, anxiety, sadness, fertility and demographic traits, and hypoglycemia phobia were evaluated. Using the 14-item Hospital Anxiety

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and Depression Scale (HADS), anxiety and depression were evaluated. The 10-item General Self-Efficacy Questionnaire (GSEQ) was used to measure self-efficacy. Also, the 10-item Medication Adherence Rating Scale (MARS) was used to measure medication adherence. The Hypoglycemia Fear Survey-II Scale (HFSS-II) was used to measure the fear of hypoglycemia (FoH). A self-created, single-item question with a 10-point rating system was used to assess partner social support throughout pregnancy.

Results

Among the participants, 71.1% had gestational diabetes and 28.9% had pre-pregnancy diabetes. The prevalence of anxiety and depression was 74.9% and 79.4%, respectively, across all individuals; the prevalence was substantially higher among those with pre-existing diabetes than among those with gestational diabetes. The significant predictors of abnormal anxiety included spouse social support (OR: 0.68 [95 % CI: 0.56; 0.82])) and self-efficacy (OR: 0.91 [95 % CI: 0.86; 0.96]). The following factors were significant predictors of abnormal depression: diabetes type (OR: 0.26 [95 % CI: 0.09; 0.77]), perceived family economic position (OR: 3.08 [95 % CI: 1.12; 8.49]), self-efficacy (OR: 0.86 [95 % CI: 0.82; 0.91]), spouse social support (OR: 0.62 [95 % CI: 0.49; 0.78]), medication adherence (OR: 1.05 [95 % CI: 1.01; 1.09]), fear of hypoglycemia (OR: 1.06 [95 % CI: 1.02; 1.09]), and diabetes treatment (OR: 0.21 [95 % CI: 0.08; 0.55]) (Figure 1).

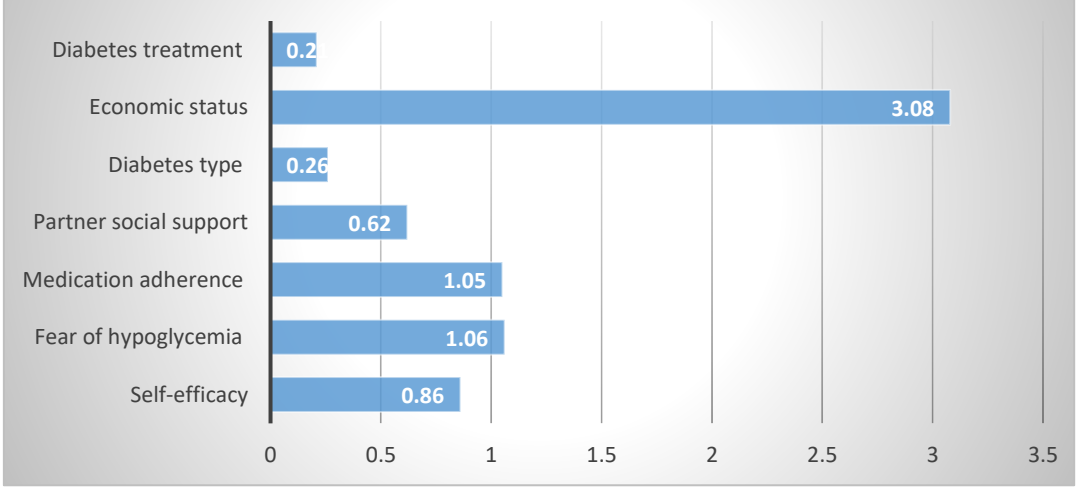

Figure 1. Predictors of abnormal depression (based on odds ratio)

Discussion

This study used the HADS which found 22.3% of all subjects indicated borderline depression and 57.1% had abnormal depression. In addition, compared to people with GDM (73.5%), those with pre-existing diabetes had considerably higher (combined) borderline and abnormal depression rates (79.4%). Several studies have found varying rates of depression prevalence among pregnant women with pre-existing diabetes, or GDM.[1] A recent meta-analysis of ten studies found that pregnant women with gestational diabetes were 43% more likely to experience antepartum depression than pregnant women without the condition.[3] A study done by Lee et al. found that 12.5% of pregnant women with diabetes experienced depressive symptoms.[4]

Conclusion

During a prenatal appointment, diabetic pregnant women should be assessed for anxiety and sadness. Among women with pre-existing diabetes, lowering anxiety and depression may be achieved through enhancing self-efficacy, improving medication adherence, lowering hypoglycemia anxiety, and enhancing the social support of the spouse.

Women with pre-existing diabetes were more likely to experience abnormal and borderline anxiety and depression than those with gestational diabetes.

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2. Demonstration of Digital examination of nonverbal actions in predicting the earliest development of depression

Introduction

Depressive disorders (DD) are a devastating public health issue and one of the primary causes of disability worldwide. In adolescence, the prevalence of DD increases significantly, with a particularly noticeable rise in females, who were twice as likely as boys to experience depression. As a result, adolescence, particularly for females, is a critical developmental stage for identifying objective, cost-effective, and non-invasive risk and resilience markers, enabling improved DD prevention and treatment.[1] The use of digital measurements related to underlying biological phenotypes, known as digital phenotyping, has been proposed as an approach for improving the measurement of underlying sickness by capturing digital proxy measures of clinical functioning. Digital phenotyping includes the use of geolocation or actigraphy from a person's smartphone to quantify activity as a stand-in for mood or anxiety states.[2] Digital phenotyping, a comprehensive behavior evaluation method using digital technology, has demonstrated its ability to measure nonverbal indicators of DD and is believed to tap into the biological phenotypes that underlie the clinical dysfunction. Nonverbal behaviors, such as head movements and facial expressions, can distinguish clinically depressed individuals from control participants. However, the effectiveness of digital measures in predicting depression in adolescence is unknown. However, there are benefits to using digital technologies for analyzing nonverbal behavior in naturalistic environments. According to recent studies that used digital techniques for automatic facial movement recognition, people who are more depressed show clear variations in their facial expressions. There is currently insufficient information to determine if these behavioral anomalies are specific to depression or whether risk flags can be identified using digital techniques before depression manifests.[1] So, the purpose of this study was to determine whether digitally measured nonverbal behaviors have incremental validity in addition to being more reliable indicators of depression that will manifest later in life.

Methods

Using commercially available facial emotion recognition software, this longitudinal study examined clinical interviews that were videotaped with 359 female adolescents who had never had depression.

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Diagnostic and Statistical Manual (DSM-IV) disorders were evaluated at baseline and three years later using the semi-structured diagnostic interview Kiddie Schedule for Affective Disorders and Schizophrenia for School-Aged Children, Present and Lifetime Version (KSADS-PL). Mean head movement values were computed for each participant using frame-by-frame Euclidean distance. Other baseline predictors of DD were also analyzed in order to ascertain the added utility of non-verbal indicators in uniquely forecasting DD. Interviews with participating parents regarding their own and non-participating parents were used to determine the parental lifetime history of DSM-IV mood disorder. Parents who participated in the five-minute speech sample were asked to rate their criticism of their adolescent.

Results

First-onset DD occurred in 70 (19.5%) of the patients over a period of 3 years, with an average onset period of 14.67 (SD = 14.26) months following baseline evaluation. Nonverbal measures were investigated as potential predictors of DD at a 3-year follow-up using logistic regression analysis. Area under the curve (AUC), sensitivity, specificity, and positive and negative predictive values for the model-estimated likelihood of DD initiation (i.e., a weighted composite of the four behavioral predictors) were calculated using receiver operating characteristic (ROC) curve analysis (Figure 1). The AUC was 0.70, indicating that facial AUs and nonverbal head movements have moderate to low accuracy in differentiating between people who will and won't experience the first commencement of a DD. The ROC analysis's AUC value of 0.78 indicated a moderate level of accuracy. The risk composite demonstrated high sensitivity (0.90) with a lower cutoff, but at the expense of choosing 65% of the sample; hence, it can be used to screen out adolescents with very little risk of developing DD.

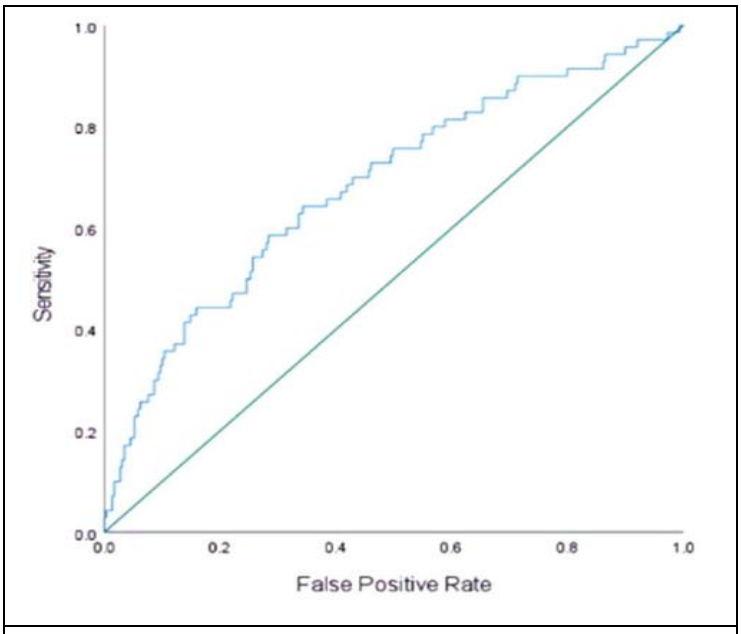

Figure 1. ROC curve for the logistic regression that used nonverbal behaviors to predict DD at a 3-year follow-up.

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Discussion

The ROC analysis's AUC value of 0.78 indicated a moderate level of accuracy. The risk composite's high sensitivity (0.90) with a lower cutoff came at the expense of choosing 65% of the sample; hence, it can be used to screen out teenagers with very little chance of developing DD.[1] Prospective prediction utilizing a model trained on session 1 data to predict session 2 depression state yielded a 10-fold CV AUC of 0.77 and a balanced accuracy of 0.66. Additionally, using the best model, interpretable behavioral signals for depressed patients were found. With a potential for a wide range of therapeutic applications, the study demonstrated the value of employing behavioral data as a practical and affordable method for depression screening.[3]

Conclusion

This study concluded that digital assessment of nonverbal behaviors can provide a viable risk marker for DD, which could aid in early detection and intervention efforts.

Digital evaluation of nonverbal behaviors may offer a viable risk factor for depressive disorders (DD).

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3. Associations between anxiety and the various demographic and clinical variables of the patients undergoing magnetic resonance imaging

Introduction

Magnetic resonance imaging (MRI) is a non-invasive diagnostic technology that is frequently used to visualize soft tissues and anatomic structures. MRI has become one of the most popular methods in clinical practice for diagnosing conditions involving the neurological, musculoskeletal, and cardiovascular systems over time.[1] However, some patients may experience anxiety when undergoing a procedure like the MRI scan. Loss of control may result from elements like being close to the machine during screening and being in a small area. Additionally, they may cause claustrophobia and a fear of pain, harm, and the unknown. Finally, worrying about the outcome can exacerbate anxiety. During MRI scanning, extremely anxious patients may move, which lowers the quality of the imaging and diagnostic tests.[2] The incidence of anxiety among patients having MRI in resource-limited settings has not been thoroughly examined. Furthermore, a few studies were undertaken to examine the relationship between anxiety and various demographic and clinical factors of individuals having MRI.[1] Therefore, the purpose of this study was to determine how common anxiousness is among MRI patients. The study additionally examined the relationships that existed between anxiety and the different clinical and demographic characteristics of the MRI patients.

Methods

In this multicenter cross-sectional study, a total of 383 patients are involved. The patients were given the questionnaires as soon as the scan was finished. Patients' sociodemographic information was collected, including their age, gender, marital status, job, height, weight, and presence of comorbidities. Patients undergoing MRI scans were asked to rate their level of anxiety using a 100-mm visual analog scale (VAS) where 0 indicated “no anxiety” and 100 represented “highest level of anxiety”. Other ratings were reported on a 4-point Likert scale. where 1 was the lowest rating, meaning “Not at all”, 2 meant “Barely”, 3 meant “Somewhat”, and 4 was the highest rating, meaning “Very much so.

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Results

In this study, 255 (66.6%) of the patients said that they were anxious during the MRI scan. Of the patients, 65 (17.0%) reported having severe anxiety, 94 (24.5%) reported having moderate anxiety, and 96 (25.1%) reported having low anxiety (Figure 1). Using the 100-mm VAS, the median anxiety was 20.0, with an interquartile range (IQR) of 0.0–50.0. Patients who were unemployed, female, and had never had an MRI scan reported higher levels of anxiety. Additionally, compared to individuals who had scans of their upper extremities, belly, pelvis, and lower extremities, those who had pelvic scans expressed higher levels of anxiousness. Furthermore, it was found that individuals who underwent head/neck scans experienced higher levels of anxiety than those who underwent lower extremity scans.

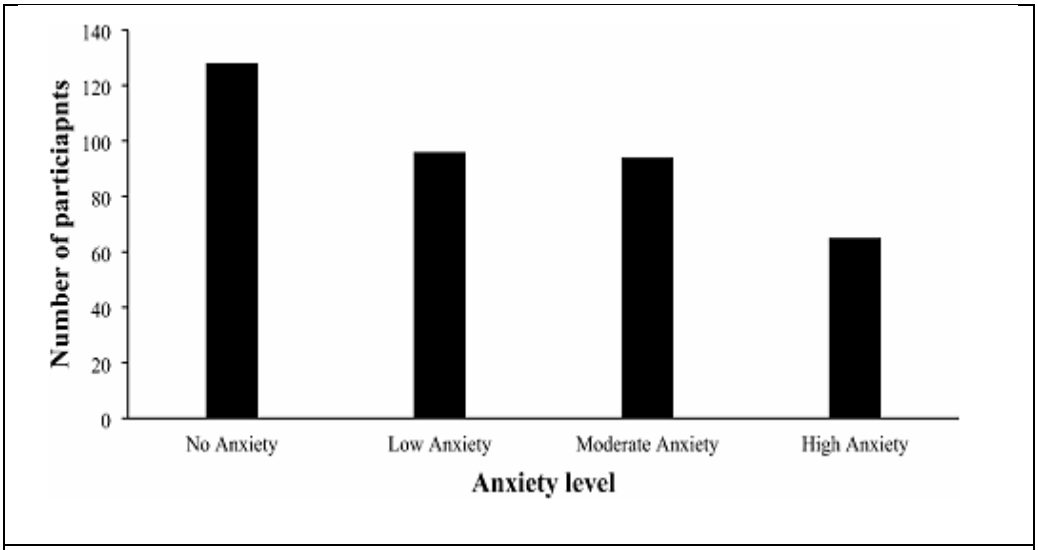

Figure 1: Anxiety levels reported during the scans

Discussion

In this study, female patients' anxiety levels were significantly higher than those of their male counterparts. The anxiety levels of the unemployed patients were significantly greater than those of the employed individuals. Patients who underwent pelvic scans reported higher levels of anxiety than those who underwent scans for the upper extremities, belly, pelvis, and lower extremities, according to multiple comparison post hoc tests.[1] According to Zhou SP et al., the most important factors influencing the MRI examination experience and psychological state of patients were environmental logistics factors, poor service attitude, examination site, and income. These factors can be improved

by providing patients with information, improving the waiting environment, providing targeted patient education, and promptly assessing the experience.[3]

Conclusion

This study demonstrated a significant percentage of MRI scan patients suffer from anxiety. Effective strategies to lessen anxiety and enhance the experiences of female patients, those without jobs, and those undergoing MRI scans for the first time should be developed by radiologists and other healthcare system decision-makers. These measures should also pay special attention to individuals who are scheduled to undergo head/neck and pelvic scans.

Radiologists and other healthcare decision-makers should develop effective methods to lessen anxiety and improve the experiences of female, unemployed, and first-time MRI scan recipients.

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4. Case Report on a Manic Episode After Dengue Fever

Introduction

Dengue fever (DF) affects around 50 million people each year, placing an estimated 2.5 billion at risk, particularly children. Flu-like symptoms include high-grade fever with headache, myalgia and arthralgia, nausea and vomiting, severe abdominal pain, rash, retro-/peri-orbital pain, bleeding, and low platelet count (thrombocytopenia). These symptoms can result in severe shock, encephalitis, acute organ failure, cardiomyopathy, and death. Several studies have recently linked this virus to neurological problems in DF patients, indicating that it was neurovirulent.[1] Although rare, psychiatric symptoms related to dengue fever may include excessive talkativeness, euphoria, increased activity, grandiosity, decreased need for sleep and food, impatience, restlessness, and aggressive outbursts. Additionally documented are post-infectious sequelae such as dementia, amnesia, delusions, and hallucinations. It is imperative that medical professionals take dengue into account when making a differential diagnosis for patients who have recently traveled to endemic regions and have acute mental symptoms.[2] The purpose of this case report is to generate attention to the possibility of serious mental health problems following dengue fever, promote more clinical awareness and research to look into any possible link between dengue fever and mental health issues and enhance patient outcomes.

Case presentation

A 22-year-old male patient arrived at the emergency room with a five-day history of fever, nausea, non-bilious vomiting, widespread abdominal discomfort, headache, body pains, and hemoptysis in the previous four days. The patient and his family agreed that there was no family history of mental illnesses and that he has no prior psychiatric history. The patient's Glasgow Coma Scale score upon physical examination was 15/15. He showed minor symptoms of dehydration but no pallor, jaundice, or lymphadenopathy. There were no localized neurological abnormalities found during the neurological evaluation. Hematological investigations revealed a positive dengue virus IgM result. His platelet count was 40 x 10^3 /mcL, indicating thrombocytopenia and his white blood count was 4.99 x 10^3 /mcL. The patient was treated for symptoms with intravenous (IV) fluids, acetaminophen 1 gram once daily, pantoprazole 40 mg once daily, and ondansetron 4 mg (Table 1). Six days later, he was discharged afebrile, with a platelet count of 104 x 10^3 /mcL. After being discharged from the emergency room for dengue fever, the patient returned within a week, but this time, his main

complaint was that his conduct had changed dramatically from how he usually behaved. According to his escorts, the patient started experiencing verbal aggressiveness against his family and roommates, as well as acute insomnia and an irritated attitude, one day after being discharged. Significant social disinhibition, decreased hunger, talkativeness, a heightened and compelled speaking rate, elevated self-esteem, and increased cigarette smoking were some of the symptoms that rapidly worsened.

Medication	Drug Class	Route	Dosage	Frequency	Duration	Notes
Ondansetron	5-HT3 antagonist (for nausea and vomiting)	Intravenous	4 mg	OD	6 days	Administered during hospitalization at the field hospital.
Pantoprazole	Proton-pump inhibitor	Intravenous	40 mg	OD		
Acetaminophen	Analgesic and antipyretic	Intravenous	1,000 mg	OD		
Olanzapine	Second-generation antipsychotic	Oral	Initially 5 mg daily at bedtime, then titrated to 10 mg daily at bedtime	HS	10 days	Administered during hospitalization at the tertiary psychiatric facility.
Bromazepam	Benzodiazepine	Oral	1.5 mg	BID		

TABLE 1: Chronological list of medications administered to the patient during his hospitalization at both the dengue field hospital and the tertiary psychiatric facility.

OD, once daily; HS, at bedtime; BID, twice daily

Additionally, the patient exhibited impulsive conduct, going above his typical spending habits. His presentation-related Mental Status Examination (MSE) revealed grandiose ideas and attitudes, as well as an extremely intense euphoric effect that was inconsistent with his stated bad mood. He expressed homicidal thoughts, especially stating the intention to use a knife against an unidentified person, demonstrating poor judgment and insight. These symptoms, which appeared quickly after the patient recovered from dengue fever, were especially concerning because the patient had no previous psychiatric history. Due to his uncontrolled symptoms and severe risk to himself and others, he was subsequently moved to a tertiary psychiatric facility and admitted to an acute general psychiatry inpatient ward. Before transfer, he needed to be quickly sedated with intramuscular (IM) haloperidol (5 mg) and intravenous (IV) diazepam (10 mg). To demonstrate suitability for his manic symptoms, he was prescribed olanzapine, a second-generation antipsychotic, at a dose of 5 mg once daily at bedtime (Table 1). At admission, his Young Mania Rating Scale (YMRS) score was 54. The patient received a score of 95 overall on the Positive and Negative Syndrome Scale (PANSS). According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision (DSM-5-

TR), he was diagnosed with bipolar disorder and related disorders as a result of another medical illness. As a result, olanzapine was increased to 10 mg at bedtime and bromazepam to 1.5 mg twice per day (Table 1). His symptoms went away after ten days of the inpatient stay. His hunger recovered, his manic and psychotic symptoms subsided, and his sleep pattern stabilized. After that, he was discharged with 10 mg of olanzapine once a day at bedtime. At discharge, he scored a 2 on the Young Mania Rating Scale (YMRS). A follow-up visit within a week after his release revealed that he was doing well and showed no signs of psychotic or manic symptoms. He was eating and sleeping normally, and there were no signs of any unusual behavior.

Discussion

Patients with dengue showed markedly increased short- and long-term risks of depressive disorders.[3] According to the Centre for Epidemiological Studies Depression Scale (CESD-20) and the Self-administered Depression, Anxiety, and Stress Scale (DASS-21), patients with a history of dengue had considerably greater levels of stress, anxiety, and depression symptoms than the control group.[4]

Conclusion

This case study described an unusual occurrence of psychiatric symptoms, specifically a manic episode, in a previously healthy young boy following dengue illness. Shortly after recovering from dengue, the patient experienced a quick onset of symptoms, including hallucinations, irritability, sleeplessness, paranoia, and grandiosity. These symptoms required early psychiatric intervention with an antipsychotic medicine, which was helpful in resolving symptoms.

Integrating psychiatric evaluations into post-dengue care should help with early detection and treatment of neuropsychiatric consequences, especially in light of the increasing frequency of dengue worldwide.

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