

Nocturnal enuresis in an adolescent with anxiety disorder during the pandemic of the COVID-19, about a clinical case

Abstract

We present the case of an adolescent with nocturnal enuresis since childhood, and anxiety symptoms during adolescence associated with psychosocial factors and family dynamics. During the COVID-19 pandemic, he presented intense symptoms of anxiety in relation to the fear of having a serious illness and the fear of dying, which is why he was taken to the emergency room on several occasions. Exacerbating the symptoms of enuresis and presenting the anxiety disorder due to illness. Responding favorably to antidepressant drugs, individual and family psychotherapy. Being nocturnal enuresis a rare elimination disorder in adolescence, whose diagnosis and treatment are important due to the risk of affecting psychosocial functioning and greater probability of presenting comorbidity. Likewise, we mention the impact of the COVID-19 pandemic on adolescents, due to a higher risk of presenting anxiety, depression and stress associated with enuresis.

Keywords: nocturnal enuresis, anxiety disorder, COVID-19, adolescent

Volume 7 Issue 2 - 2022

Maria A Huete-Cordova,^{1,2} Ruby D del Pilar Sánchez-Alegría,³ Juan C Ocampo-Zegarra^{1,4}

¹Child and adolescent psychiatrist, Child and Adolescent Psychiatry Service, Guillermo Almenara Irigoyen National Hospital, Peru

²Teacher, Daniel Alcides Carrión National University, Peru

³Resident doctor of Psychiatry, Faculty of Medicine, National University of Trujillo, Peru

⁴Professor of Psychiatry and Medical Ethics, Faculty of Medicine, National University of San Marcos, Peru

Correspondence: María Antonieta Huete-Cordova, Guillermo Almenara Irigoyen National Hospital—Child and Adult Psychiatry Service, Adolescent av. Grau 800, Lima 1, Lima, Peru, Tel 324 2983/324 2980, Email mariamhuetecordova@gmail.com

Received: July 16, 2022 | **Published:** August 09, 2022

Abbreviation: GAD, diagnosis of illness anxiety disorder; OSAHS, obstructive sleep apnea-hypopnea syndrome; IQ, intelligence quotient; DSM, diagnostic and statistical manual of mental disorders

Introduction

Anxiety disorders affect 10-20% of the population of children and adolescents, and the most frequent in young people are separation anxiety disorder, generalized anxiety disorder, social anxiety and selective mutism, which may present as diagnoses comorbid.¹

Illness anxiety disorder, formerly considered hypochondriasis, is characterized by an incessant worry about acquiring a serious illness not yet diagnosed, with or without somatic symptoms, the individual's anguish stems from the meaning he gives to the physical ailment, who frequently consult several doctors, obtaining negative results in diagnostic tests.

The DSM-5 Classification and Statistics Manual reports that, in ambulatory medical populations, the 6-12 month prevalence rates of health anxiety and/or conviction of an illness are 3-8%. The prevalence is similar between men and women. In the differential diagnosis of generalized anxiety disorder (GAD), people worry about multiple events, only some of which could involve health, presenting as an acute and episodic condition. Unlike illness anxiety disorder, in which excessive worry and fear of developing a serious undiagnosed medical illness it occurs persistently and lastingly.²

Enuresis is the repeated voluntary emission Urin voluntary urination, during daytime hours, or at night, in an inappropriate place, with a minimum frequency of twice a week, for a minimum period of three consecutive months, associated with an alteration in social or academic functioning. The DSM-5 statistics and classification Manual states that the prevalence is 5-10% in 5-year-old children, 1.5-5% in 9-10-year-old children, and it is rare in adolescence that it reaches

1%. It is classified into primary and secondary enuresis, diurnal only, nocturnal only, or diurnal and nocturnal. The risk of nocturnal enuresis is higher in children of mothers diagnosed with enuresis and in children of fathers with urinary incontinence. They also have a higher risk of presenting other psychiatric disorders.^{1,2} Enuresis can be classified in Table 1, according to the different variables: conceptual, duration, stage of occurrence and frequency.

Table 1 Classification of Enuresis according to different variables

Conceptual	Functional	Functional involuntary urination
	Organic	Involuntary urination related to urological or neurological disorders.
Duration	Primary	Involuntary, continuous, persistent urination from birth.
	Secondary	Involuntary, continuous, persistent urination after a control period of 6-12 months.
Occurrence stage	Daytime	Involuntary urination during the waking period.
	Nocturnal	Involuntary urination during the sleep phase.
	Mixed	Involuntary urination during the day and night
Frequency	Regular	Involuntary urination in habitual episodes.
	Sporadic	Involuntary urination in sporadic episodes (for example, once or twice a month).

Adapted from Méndez Francisco. Psychological therapy with children and adolescents. 2014. Madrid: Pyramid

Enuresis has a great impact on the social life of children, adolescents and their families, being the emotional and behavioral

disorders the most frequent among children with enuresis, encopresis and urinary incontinence.³ Events in a child's life can trigger these elimination disorders.⁴ Children with developmental delay and difficult temperament traits are more likely to have daytime enuresis in school age.⁵ It also increases the risk of developing bedwetting, trait anxiety in early childhood, and having an anxious parent.⁶

Conducted a case-control study in 180 children between 7 and 17 years old with primary nocturnal enuresis and 180 healthy children, with the results that the history of anxiety in the mothers of the group of patients was significantly greater than the of the control group and also in terms of the scores obtained in generalized anxiety disorder (GAD), a relationship with primary nocturnal enuresis was obtained as results.⁷

Described the results of a retrospective study in 196 children aged 5 years and over, who presented snoring, evaluated in the otolaryngology outpatient clinic, whose results revealed the close relationship between enuresis and obstructive apnea-hypopnea syndrome of the dream. The patients were divided into a group with enuresis ($n = 45$) and a group without enuresis ($n = 151$). Of which, 28.9% of children with enuresis had obstructive sleep apnea-hypopnea syndrome (OSAHS) ($P < 0.05$). Tonsil size and sleep apnea were risk factors for enuresis in children ($P < 0.05$). The chi-square test showed that adenotonsillectomy could significantly improve the symptoms of enuresis in the children studied.⁸

Carry out a systematic review on the impact of the COVID-19 pandemic on the mental health of adolescents. Obtaining results of negative impact on mental health. Of the 16 studies reviewed, 7 were conducted in China, 2 in the United States, 2 in Canada, and 1 each in Denmark, Germany, Japan, the Philippines, and the United Kingdom. The factors that could influence the mental health of this population group are: stressful life events, prolonged confinement at home, worry, excessive use of the Internet and social networks.⁹

The early diagnosis of enuresis and anxiety disorder due to illness is important for a multidisciplinary approach, both pharmacological and psychotherapeutic, as well as the importance of determining the psychosocial factors associated with the exacerbation of symptoms of these diagnoses due to compromise in psychosocial functioning and greater probability of presenting comorbidity.

Case description

17-year-old male patient, natural and from Comas, Lima. He is in the first cycle of the Nursing university career, he lives with his 43-year-old mother and 21-year-old sister. Separated parents. He comes to the outpatient clinic, referred by Cardiology for palpitations and chest pain, with symptoms of anxiety with an evolution of two years, initially with excessive concern associated with the separation of parents, fear of being alone, concern for the mother, due to a complaint from the father, the presence of physical symptoms and concern about having a serious illness which makes him go to the emergency room on several occasions, affecting his social environment, preferring to sleep with his mother at night, becoming insecure. At the onset of symptoms, he had a headache, chest pain, palpitations, sweaty hands, paleness, he does not want to be alone, he is afraid, because he thinks he may die, his chest hardly hurt, he called his mother and wanted him to be with her. On the other hand, he thought he had a tumor when he presented headache, he often thought he could die, liquid stools, hyporexia alternated with periods of normal eating, irritability and conciliation insomnia. Attending the emergency room approximately once a month due to chest pain, tachycardia, associated with respiratory distress, not finding anything pathological, so he is

referred to an outpatient cardiology clinic. In addition, the frequency of urination in bed increases, not being able to control sphincters at night, so he wears a diaper.

During the pandemic, anxious symptoms about his health are exacerbated, easily alarmed by any presence of physical discomfort and concern, patient reports: "Since the pandemic began I was very afraid of getting infected, I was afraid for my mother because she worked in the hospital, my mom did not want us to go out on the street at all, only to shop once a month, we took great care of ourselves, in March of this year, my mom was hospitalized for covid-19, I thought my mom was going to need an ICU bed, that you could die, I began to feel short of breath and my heart was beating very fast, then the following month I was infected with COVID-19 and had a fever. General malaise, I thought that it could complicate me and I could drown and that I would need an ICU bed like my uncle who died of COVID, at night I thought I would die".

Back ground

Product of unplanned pregnancy, with threatened abortion at 8 weeks, mother during pregnancy with depressive symptoms, institutionalized eutocic delivery, at term, without complications, joint discharge. Mixed lactation, constipation, cyanotic sobbing spasms on four occasions, evaluated by pediatric emergency, without subsequent controls. Rotacism up to 9 years old, daytime bladder sphincter control at 3 years old, primary nocturnal enuresis, uses diapers until now, with variable evolution during this time, sometimes decreasing in the frequency of diaper use at night. During sleep, he breathes with his mouth open. Dryness of the oral mucosa, intense snoring, sleep talk. Harmful Habits: Denies consumption of THC, cocaine, LSD, benzodiazepines. Sporadic alcohol and tobacco use. Psychosocial stressors: Physical and verbal child abuse by both parents. At age 6, the separation of his parents; At the age of 11; bullying at school "they called me black queer for playing volleyball and being with friends" and fear of speaking in public; At age 15, trial for family violence; At age 17, death of uncle from Covid-19, Covid-19 infection of the patient and mother. Fears in childhood: Fear of the dark, of heights, of aggression from large dogs. At age 17, death of uncle from Covid-19, Covid-19 infection of the patient and mother. Fears in childhood: Fear of the dark, of heights, of aggression from large dogs. At age 17, death of uncle from Covid-19, Covid-19 infection of the patient and mother. Fears in childhood: Fear of the dark, of heights, of aggression from large dogs.

15 years old: concern for mother, fear that mother could go to jail for arguments with father and trial. At 17 years old: fear of being infected again by covid-19, being clinically serious and needing an ICU bed. Family history: Mother with arterial hypertension, bronchial asthma, nocturnal enuresis up to 15 years of age, in psychological treatment for anxious symptoms related to covid-19 infection. Father with alcohol dependence without treatment.

Physical exam

Skin and appendages: dark, elastic, moist complexion, atrophic scars in the bilateral temporal region, multiple closed comedowns in the nose, papules, pustule in the intercalary region, rest of the examination not significant.

Mind exam

Adolescent male patient, mestizo race, dark complexion, short black hair, appears chronological age, fixed gaze, in a regular state of personal hygiene, dressed according to the season, eye contact, collaborates with the interview. Awareness: awake, alert, and vigilant; oriented in the three spheres.

Attention

Normoprosexia, partial tolerance to the time of interviews on some topics that are not to your liking (enuresis), Perception: denies pseudo-perceptions, not hallucinatory behavior. Preserved course thinking, focused on the future, catastrophic thinking, excessive concern of contracting a serious illness related to COVID-19 and having to need an ICU bed “” I am very afraid that something could happen to me, I do not want to dying, I think about death. At night I think that maybe I will die and I won't be able to wake up anymore, my mother would be very bad if something happens to me”, no delusions, denies thematic ideation. Low-tone and fluent language. Intelligence: capacity for abstraction preserved, establishes differences and similarities Preserved calculation Memory of fixation and evocation preserved Affect: anxious mood, irritable at times, feeling of sadness reactive to memories of uncle's death, mI fear the death of themselves and their loved ones, fear of being alone, fear of becoming infected with COVID-19. Instinct: decreased vital energy, conciliation and maintenance insomnia, parasomnias, increased appetite, preserved thirst, decreased libido. Conation: hypobulia, poor impulse control.

Hamilton Scale for Anxiety with a score of 31 points indicating moderate/severe anxiety, and Rosenberg Self-Esteem Scale with 29 points, which is interpreted as average self-esteem, which is consistent with clinical and psychological evaluation.

Diagnosis

AXIS I. Anxiety disorder due to illness. Panic disorder Generalized anxiety disorder. Primary nocturnal enuresis. AXIS II. Rotacism. AXIS III. Apparently normal intelligence quotient (IQ). AXIS IV. Vulgar Acne. Xerophthalmia, myopia, D/C Obstructive sleep apnea. AXIS V. Problems related to family breakdown due to separation or divorce, domestic abuse, problems related to stressful events that affect the family and home, problems related to the social environment, family history of alcohol abuse. AXIS VI. Global activity assessment scale 60/100.

Patient diagnosed with primary nocturnal enuresis, not controlling urinary continence from the age of five, using diapers until adolescence. Meeting DSM-5 criteria with a frequency of at least 2 times per week, repeated urination since age five not associated with a medical condition or drug administration. The consequences of nocturnal enuresis are in the social aspect, and especially in the case of an adolescent, self-esteem is affected, which could determine a worse prognosis by not being detected and receiving treatment.²

During the evolution of the disease, the patient shows a partial compromise in his interpersonal relationships such as family, social, affecting his normal execution of these roles, presenting absences in his virtual classes, poor performance in studies, social isolation and shame at work having to wear a diaper, which avoids talking about it.

Over time, the patient presented anxious symptomatology with multiple concerns and somatic symptoms, corresponding to the criteria of a generalized anxiety disorder, with partial improvement with psychotherapy, and began university studies.

Within the clinical picture, episodes of sudden intense fear are associated, characterized by palpitations, sweating, fear of dying, chest pain, which brought him to the emergency room on several occasions, contributing to the diagnosis of panic disorder.

During the COVID-19 pandemic, anxiety about health and concern were added to suffering from a serious illness, which began with the previous illnesses of uncle and mother, excessive concern about their

health, affecting their daily activities such as going to their virtual classes at university and in socialization, with fear of sleeping alone, corresponding to the diagnosis of Illness Anxiety Disorder (GAD). As a differential diagnosis in an anxiety disorder, non-psychiatric causes such as neurological and endocrine causes are ruled out. An adjustment disorder is ruled out when symptoms persist exacerbated by the thought of having a serious illness, characterized by extreme concern for his health and despite the fact that the psycho-stress factor of the covid-19 disease and the death of his uncle has ended. During the pandemic, somatic symptoms are present in relation to the thought and future fear of contracting a serious illness, failing to mention the other concerns in relation to parental separation, bullying at school that presented at the onset of symptoms, adding to the diagnosis of GAD illness anxiety disorder. The patient is in mourning, which he has mentioned during therapy, but his greatest concern is contracting something serious that affects his health and that of his mother. The diagnosis of anxiety disorder due to illness has an important commitment in the quality of life of the patient, treatment was started from the first day of consulting a psychiatrist, with Sertraline 50mg po/day for one week, then increased to 100mg po/day and Clonazepam 0.5mg: 1mg/day for two weeks, reducing the dose and then only conditional; individual and family psychotherapy, one session per week, interventions in which the patient expresses emotions of fear and sadness for the loss of their family member and fear of having a serious illness; In family therapy, family dynamics are addressed, the mother-child symbiosis, the increase in overprotection on the part of the mother with her child, which is observed with some behaviors on the part of the mother, such as starting university studies with her son, in the same career.

Nursing, by minimizing the importance of enuresis from childhood, promoting the use of diapers until adolescence and delay in seeking psychiatric care. After a month of treatment, there is evidence of partial clinical improvement, less intensity and frequency of anxious symptoms associated with intense fear of dying, improved sleep, good therapeutic adherence, regarding bedwetting in this year, a family member identified a decrease in frequency, only appearing once a month, which temporarily increased when he and family members became infected with COVID-19. In the following appointments, the patient reports that he no longer uses a diaper at night. Laboratory tests were performed, including glucose, urinalysis, urea, creatinine, thyroid profile and others, obtaining results in normal ranges. Electrocardiogram: RS/85 x min/+45°/TRP/rest within normal. Pediatric evaluation ruling out organicity due to the diagnosis of nocturnal, primary, monosymptomatic enuresis. Rule out neurogenic bladder, urinary tract infection, or other medical condition. The specialty of dermatology gives indications for acne vulgaris. The specialty of ophthalmology indicates the use of lubricants and corrective lenses for xerophthalmia and myopia.

Discussion

Nocturnal enuresis is very common in childhood, being diagnosed with a higher prevalence in boys than in girls, from 6 to 13 years old, rare in adolescents, affecting the development, self-esteem and performance of the individual. Rangel et al.¹⁰ describes a case-control study of 88 children, 39 children with primary mono symptomatic enuresis and 49 healthy children, obtaining as results that 35.9% of the children with enuresis showed a significant loss in quality of life. Having 2.87 times more chances of having loss of quality of life compared to non-enuretic children.¹⁰ Nocturnal enuresis is frequently observed in children with ADHD.¹¹ Obtained as results of their study that el 13.72% of children with ADHD had associated enuresis.¹²

Enuresis is a worrying problem for children due to the risk of lower quality of life and low self-esteem, and because of the low tolerance of their relatives. The incidence of behavioral disorders is between 10-15% of children and adolescents. 20-30% of children with nocturnal enuresis present behavior problems.¹³ Describe in their study that 68.5% of children with primary enuresis had obstructive sleep apnea, associated with obesity, nasal obstruction, abnormal facial phenotypes (adenoids and obesity), arched palate, dental malocclusion, finding adenotonsillar hypertrophy in lower prevalence.¹⁴

The patient we present has primary nocturnal enuresis that is exacerbated at the age of 11, associated with several psycho-stressors in the family dynamics in relation to family violence by both parents and disqualification by the father towards him, separation of parents in the adolescence, affecting him emotionally with the presence of intense symptoms of anxiety, low self-esteem and behavioral changes, presenting frequent conflicts with his mother on a temporary basis due to arguments with his father. Based on the history of hyperactivity that he mentions in the interview is ruled out, not meeting DSM-5 criteria, he currently does not have a diagnosis of attention deficit hyperactivity disorder.

A psychological evaluation is performed presenting indicators of insecurity, shyness and childishness, likewise it shows dependency, need for support and show the expression of power.

Describe in their study that the rate of those whose parents had a history of enuresis was 52.17% and siblings 43.47% of children who also had enuresis. An increase in the level of anxiety can lead to erroneous attitudes such as humiliation or punishment of the child, which can negatively affect the relationship of the child with her parents. Children with enuresis perceive their mothers' behavior as more hostile.¹⁵ The patient's mother has a history of enuresis and is currently diagnosed with depression, under treatment by psychiatry and psychology. She denies disapproval or physical and/or verbal violence with her son in relation to enuresis, even more so if she recognizes family violence to date from both parents.

Carried out a systematic review on the impact of school closures, social distancing during the covid-19 pandemic on the physical health and psychological well-being of young people, whose prevalence of anxiety among adolescents ranged between 19-64%. And in children between 5-12 years old it ranges between 19-78%.¹⁶

In the patient, the COVID-19 infection, both for himself and his relatives, had a great impact on his mental health, exacerbating the symptoms with two years of evolution, currently fulfilling the DSM 5 diagnostic criteria as a concern extreme of having a serious illness associated with covid-19, with the need for a bed in the intensive care unit, fear of dying and somatic symptoms. Blood pressure is checked every day by keeping a daily record, with a high level of health anxiety. Gasteiger et al.,¹⁷ described a cross-sectional study in New Zealand, with the participation of 681 participants, aged between 18-87 years who completed the surveys, using the PHQ-9, PSS-4 and GAD-7 scales, of which 64% of the participants reported symptoms of depression and 53% symptoms of anxiety. Being younger and having a higher risk of contracting COVID-19 were associated with higher levels of anxiety, depression and stress. Higher levels of loneliness, lower positive mood, and higher perceived risk of COVID-19 were associated with higher levels of stress.¹⁷

The limitations that we found in the clinical case report, given the pandemic situation, family psychotherapeutic interventions are only virtual, which can facilitate the frequency of sessions, plus the lack of an institutional platform makes it difficult for members of

the community to have better access. Family, as well as the delay in appointments for other specialties such as otorhinolaryngology, which has not been carried out to date, and it is still pending to determine the relationship between enuresis and obstructive sleep apnea-hypopnea syndrome in the patient, which would be a pending diagnosis for a future study. During the COVID-19 pandemic, multiple studies have been carried out due to the negative impact on children and adolescents, it is recommended to take into account the diagnosis of nocturnal enuresis as part of the comprehensive evaluation, either as a history or exacerbation of symptoms, many times. This information is difficult to access, so it is a topic that generates a lot of discomfort, especially in an adolescent.

Conclusion

Nocturnal enuresis, a very common pathology in the child population and rare in adolescents, is extremely important to consider as part of the psychiatric and non-psychiatric evaluation, due to its greater probability of presenting another psychopathology such as anxiety disorders due to illness, the great emotional, behavioral and social impact that nocturnal enuresis entails in children and adolescents. Psychosocial factors are usually triggers of elimination disorders and exacerbation of symptoms of anxiety disorders, with comorbidity in individuals with illness anxiety disorder being frequent with other mental disorders such as panic disorder and GAD. The COVID-19 pandemic is a stressor for some adolescents.

Acknowledgments

None.

Ethical aspects

The patient described in the case report gave his consent for the publication of his clinical history, we also have the informed consent of the patient's guardian.

Funding

None.

Conflicts of interest

Author declares that there is no conflict of interest.

References

1. Sadock B, Sadock V, Ruiz P. *Kaplan & sadock synopsis of psychiatry*. 11th edn. Pennsylvania: Lippincott Williams & Wilkins; 2015.
2. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 5th edn. DSM-5. Madrid: Pan American Medical Editorial; 2014:1-970.
3. Mota DM, Matijasevich A, Santos IS, et al. Psychiatric disorders in children with enuresis at 6 and 11 years old in a birth cohort. *J Pediatr (Rio J)*. 2020;96(3):318-326.
4. Nelson T, Chae H, Anbar RD, et al. Persistent encopresis, enuresis, and anxiety in a 7-year-old girl. *J Dev Behav Pediatr*. 2017;38(8):680-682.
5. Joinson C, Heron J, von Gontard A, et al. Early childhood risk factors associated with daytime wetting and soiling in school-age children. *J Pediatr Psychol*. 2008;33(7):739-750.
6. Eray Ş, Tekcan D, Baran Y. More anxious or more shy? Examining the social anxiety levels of adolescents with primary nocturnal enuresis: a controlled study. *J Pediatr Urol*. 2019;15(4):343.e1-343.e5.
7. Salehi B, Yousefichaijan P, Rafeei M, et al. The relationship between child anxiety related disorders and primary nocturnal enuresis. *Iran J Psychiatry Behav Sci*. 2016;10(2):e4462.

8. Sun C, Xu Y, Luo C, et al. Relationship between enuresis and obstructive sleep apnea-hypopnea syndrome in children. *J Int Med Res.* 2020;48(12):300060520977407.
9. Jones E, Mitra AK, Bhuiyan AR. Impact of COVID-19 on mental health in adolescents: a systematic review. *Int J Environ Res Public Health.* 2021;18(5):2470.
10. Rangel RA, Seabra CR, Ferrarez C, et al. Quality of life in enuretic children. *Int Braz J Urol.* 2021;47(3):535–541.
11. de Sena Oliveira AC, Athanasio B, Mrad F, et al. Attention deficit and hyperactivity disorder and nocturnal enuresis co-occurrence in the pediatric population: a systematic review and meta-analysis. *Pediatr Nephrol.* 2021;36(11):3547–3559.
12. Khemakhem K, Ayedi H, Moalla Y, et al. Psychiatric comorbidity with attention deficit/hyperactivity problem in school population in the Sfax region. Tunisia: transversal study. *Encephale.* 2015;41(1):56–61.
13. Akan S, Ürkmez A, Yildirim C, et al. Late-onset secondary nocturnal enuresis in adolescents associated with post-traumatic stress disorder developed after a traffic accident. *Arch Ital Urol Androl.* 2015;87(3):250–251.
14. Shafiek H, Evangelisti M, Abd-Elwahab NH, et al. Obstructive sleep apnea in school-aged children presented with nocturnal enuresis. *Lung.* 2020; 198(1):187–194.
15. Yılmaz S, Erat-Nergiz M, Özlü SG. Effect of enuresis on perceived parental acceptance-rejection in children. *Turk Arch Pediatr.* 2021;56(1):62–67.
16. Minozzi S, Saulle R, Amato L, et al. Impact of social distancing per covid-19 on the psychological well-being of Giovanni: a systematic review of the letterature. *Recenti Prog Med.* 2021;112(5):360–370.
17. Gasteiger N, Vedhara K, Massey A, et al. Depression, anxiety and stress during the COVID-19 pandemic: results from a New Zealand cohort study on mental well-being. *BMJOpen.* 2021;11(5):e045325.