Tobacco production and insomnia: case report on socioeconomic determinants of the continuous use of benzodiazepines in a rural area in southern Brazil

Produção de fumo e insônia: relato de caso sobre os determinantes socioeconômicos para o uso contínuo de benzodiazepínicos em uma zona rural no Sul do Brasil

Producción de tabaco e insomnio: Reporte de caso sobre determinantes socioeconómicos del uso continuo de benzodiacepinas en una zona rural del sur de Brasil

Abstract

Introduction: Tobacco production is mainly concentrated in rural areas of the southern region of the country. Rural areas present socioeconomic disparities, inequalities in geographic access, and difficulties in retaining professionals in primary care. Mental health problems, such as insomnia, are common in clinical practice. Case presentation: This article describes the intersections of the social determinants of health when approaching a patient with chronic use of benzodiazepines for treatment of insomnia. By delving deep into anamnesis, the socioeconomic determinants that led to the development of insomnia were identified as: financial trouble with tobacco production, excessive concern about work and presence of depression as comorbidity. Conclusions: In this context, the turnover of health professionals and lack of doctor-patient relationship meant that the patient continued using benzodiazepines, which are not recommended for long-term treatment. Therefore, fragmented care and high professional turnover stand out as socioeconomic determinants of health.

Keywords: Social determinants of health; Rural health; Sleep initiation and maintenance disorders.

Resumo

Introdução: A fumicultura concentra-se sobretudo em áreas rurais do Sul do país. Reconhecidamente, as áreas rurais apresentam disparidades socioeconômicas, desigualdades no acesso geográfico, bem como dificuldade de retenção de profissionais na Atenção Primária à Saúde (APS). Apresentação do caso: Descrevem-se, neste artigo, as intersecções de determinantes socioeconômicos de saúde ao se abordar um paciente masculino, de 57 anos, em uso crônico de benzodiazepínicos para o tratamento de insônia. Ao se aprofundar a anamnese, os determinantes socioeconômicos que levaram ao desenvolvimento da insônia foram identificados como: dificuldades financeiras na produção de tabaco, preocupações excessivas com o trabalho e presença de depressão como comorbidade. Nesse sentido, ser produtor de tabaco e a relação com a empresa podem ser considerados determinantes socioeconômicos da saúde para o desenvolvimento de insônia. Conclusões: No contexto deste caso, a rotatividade de profissionais e a falta de criação de vínculo fez com que o paciente permanecesse cronicamente a tratar a insônia como benzodiazepínico, o que é proscrito. Assim, revelam-se a fragmentação do cuidado e a alta rotatividade de profissionais como determinantes socioeconômicos da saúde. Palavras-chave: Determinantes sociais da saúde; Saúde da população rural; Distúrbios do início e da manutenção do sono.

Resumen

Introducción: La producción de tabaco se concentra principalmente en las zonas rurales del sur del país. Se reconoce que las zonas rurales presentan desigualdades socioeconómicas, desigualdades en el acceso geográfico, así como dificultad para retener profesionales en Atención Primaria de Salud (APS). Los problemas de salud mental como el insomnio son comunes en la práctica clínica. Presentación de caso: Este artículo describe las intersecciones de los determinantes socioeconómicos de la salud al abordar a un paciente uso crónico de benzodiazepinas para el tratamiento del insomnio. Al profundizar la anamnesis, se identificaron los determinantes socioeconómicos que llevaron al desarrollo del insomnio como: dificultades económicas en la producción de tabaco, excesiva preocupación por el trabajo y la presencia de depresión como comorbilidad. En este sentido, ser productor de tabaco y la relación con la empresa pueden considerarse determinantes socioeconómicos de la salud para el desarrollo del insomnio. Conclusiones: En el contexto de este caso, la rotación de profesionales y la falta de vinculación hicieron que el paciente continuara crónicamente tratando el insomnio como una benzodiazepina, lo que no es recomendable. Así, la fragmentación de la atención y la alta rotación profesional se evidencia como un determinante socioeconómico de la salud. Palabras clave: Determinantes sociales de la salud; Salud rural; Trastornos del inicio y del mantenimiento del sueño.

INTRODUCTION

Tobacco farming in Brazil is concentrated on small rural properties, especially in the southern region of the country.1 There is a predominance of family labor on small properties and with an agro-industrialization system through multinational companies. However, one of the outstanding factors for the productivity and competitive advantage of these productions is the low price provided as payment to small producers.2 In addition to the situation of economic dependence on tobacco growing, the work in tobacco requires the effort and dedication of family members, with an exhausting routine.3 Added to the vulnerable working conditions, the rural population still faces challenges in accessing health services, considering lower health indicators when compared to urban areas.4

Thus, rural environments, especially in low- and middle-income countries, are associated with poverty, marginalization and isolation, as well as an increased risk of exposure to violence and abuse. All these factors can increase an individual’s risk of developing psychosomatic symptoms.5 In addition to these socioeconomic circumstances, there are inequalities in geographic access, as well as insufficient health professionals and health facilities, making it difficult to follow-up patients longitudinally through primary health care (PHC).6 Thus, life in a rural context requires health professionals to consider the socio-environmental health concerns and determinants of the population they work with to carry out care planning based on local needs.
The aim of this patient report was to describe and reflect on the socioeconomic determinants of health that led to the development of insomnia and chronic use of benzodiazepines, which places the case in the perspective of socioeconomic determinants in the context of the PHC approach.

CASE PRESENTATION

Male, 57 years old, married with two children. He comes from and lives in the rural area of the municipality of Cunha Porã, Santa Catarina, in the southern region of Brazil. He is a tobacco grower who worked with tobacco throughout his childhood, following his family’s work. He currently owns a farm on his small property. He has a personal history of systemic arterial hypertension controlled with the use of enalapril 20 mg once daily. On physical examination, he did not show any noteworthy changes. As for family background, he does not remember the health problems that led to the death of his parents, but he reports that he has five siblings diagnosed with depression. The patient in this case reports having been diagnosed with insomnia and depression in 2006, the year in which diazepam 10 mg and amitriptyline 25 mg at night were prescribed, with continuous use until 2017.

In January 2017, during a routine consultation at the PHC, accompanied by his wife, the patient complained of forgetting names and expressed the feeling that he was “getting lost” in daily activities, which was his initial complaint. The patient also reported that his depression symptoms were stable. When asked about the continuous use of diazepam 10–20 mg at night, the patient reported that he had been using the drug uninterruptedly since 2006. The prescription had been renewed by different medical professionals, without having been changed because of the persistent shortage of medical team and the change in professionals.

At the time of prescribing benzodiazepine, the patient was suffering from insomnia due to problems with tobacco production. When resuming what happened at the time, the patient and his wife recalled that he was a tobacco producer and worked for a company. Generally, the tobacco production company works by supplying seedlings, pesticides and all the material needed for production. In return, producers are expected to supply tobacco in a quantity and quality determined by the company. Procedures are stringent, and farmers need to do exactly what is determined to ensure good quality tobacco.

The patient believed he was responsible for this good quality, in addition to owning one of the best farms in the region, acting with caution in production. However, the tobacco company rated his crop as low quality and offered a lower-than-expected payment. As a result, the patient was unable to pay the production cost and went into debt. This insomnia complaint is probably secondary to the psychological stress situation due to acquired debts. In 2006, the patient went to the PHC doctor, who diagnosed him with insomnia and depression, prescribing diazepam 5 mg and amitriptyline 25 mg. The patient, realizing that the effect of tolerance to diazepam increased over the years, adjusted the dose to 10 mg and informed the doctor, who continued prescribing the medication and renewing, according to the patient, “the little blue papers”.

His wife also reported, in that first consultation, that in recent years, the patient had been expressing signs of confusion and forgetfulness, such as repeating questions too often — in a way that impacted her daily activities and her relationship with her children, as well as making her feel sick in the morning. The patient also perceived this difficulty in remembering small actions of the day and greater difficulty in performing morning activities. The doctor explained to him about the risk of diazepam dependence and the possible correlation with forgetfulness. The patient agreed with the doctor on a scheme to reduce the use
of the medication, in addition to being offered guidance on sleep hygiene, such as: maintaining a regular sleep schedule comfortable ambience, avoiding watching television before bed, and avoiding naps during the day. In addition, a sheet with information about insomnia was delivered.

Upon returning after two weeks, the patient was using diazepam 5 mg every other day. His family reported that he was no longer repeating the same questions and that his mood was improving in the morning. The scheme to reduce benzodiazepine use was continued and monitored by the PHC physician. After about six months of follow-up and guidance, the patient stopped taking the medication completely, improving his memory and performance of activities of daily living

DISCUSSION

**Tobacco farming as socioeconomic determinant of health**

Although the tobacco industry favors the generation of jobs and income in the country, tobacco growers — dependent on large companies — face harm in the employment relationship. The patient, whose family members have also worked in tobacco growing since childhood, complained of suffering because of working conditions. Faced with the promise of profitability, rural workers on small properties begin to see tobacco farming as a viable lucrative possibility. However, control over the price of tobacco is concentrated in a few companies, in an oligopoly system, in which small producers undergo a strenuous journey in the hope of receiving higher remuneration for each harvest — which does not happen as promised by the companies. Faced with the debts that increase with each new harvest, producers are forced to continue producing tobacco, falling back into a constant cycle to supply daily survival.

At the time of prescribing the benzodiazepine, the patient reported insomnia due to concerns related to tobacco production, as his crop had been negatively evaluated. Although the patient has intensified tobacco production in terms of quantity and quality, becoming the owner of a prominent farm in his region, the tobacco industry disqualified his production and made payments far below expectations - leaving the farmer and his family “at the mercy of their own luck”, in the patient’s own words. Thus, there is overproduction, with devaluation and consequent debt on the part of farmers — who were initially attracted by the illusory opportunity for income and protagonism in production. In this relationship of dominance, the tobacco grower is faced with a serious lack of social protection, since he does not find room to talk about his working conditions — since many of the multinational companies do not offer open options for agreement. It was in this context of economic dependence on the tobacco industry that the patient was in when he was prescribed a benzodiazepine to fight insomnia. In addition to precarious working conditions, rural populations are also exposed to poor social conditions, among them being the difficulty of access to health. The tobacco industry also uses pesticides, which may be related to mental health issues, such as suicide.

It is important to understand the predisposing factors that led to the development of insomnia: financial difficulties in tobacco production, excessive worries about work and the presence of depression as a comorbidity. In this case, being a tobacco grower and the relationship with the company can be considered socioeconomic determinants of health in the development of insomnia. Understanding this scenario is a key factor in patient therapy and insomnia management, seeking care that goes beyond the pure medicalization of the problem faced. Recognizing work, and in this case the tobacco industry, as
a health determinant is to consider and understand that, as Carvalho states, “health inequities cannot be fought without social inequities being also fought”.  

**Insomnia: benzodiazepines treat social problems?**

In Brazil, it is estimated that 4% of the adult population take benzodiazepines chronically for the treatment of several disorders, including insomnia. Most prescriptions for these drugs are issued at the PHC level. In a scenario of simultaneous physical and mental disorders, mental health measures have been included in PHC by the Ministry of Health, through matrix support. However, such a strategy needs a professional specialized in mental health for the service to be effective. In this way, the goal is to provide PHC health professionals with a deeper knowledge about mental health to enable the follow-up of patients who have mild mental disorders in basic health units.

This organization, which brings mental health closer to PHC, considers the proximity of the teams to users and the community. However, it is necessary to remember that mental health care involves multiple factors, from living and working conditions to access to health care services. In this scenario, it is possible to infer that health strategies in rural areas present a deficit with regard to integrality, due to the lack of a specialist to adequately carry out matrix support. Furthermore, work in the field represents an epidemiological situation with high prevalence of mental disorders.

Insomnia can be characterized as a disorder that impairs the onset, duration, consolidation or quality of sleep and results in some type of daytime impairment. It is one of the main complaints of care in PHC, being present in 10 to 50% of patients. It usually starts after a stressful event and is usually linked to other psychiatric comorbidities, such as mood and anxiety disorders.

As a first-line treatment, cognitive behavioral therapy (CBT) is indicated, which has been shown to be as effective as hypnotics in the short term and more effective in the long term. Usually, four to eight sessions are recommended, with the aim of identifying thoughts and beliefs that contribute to the development of insomnia and replacing them with more appropriate ones. According to the Brazilian Consensus on Insomnia, pharmacological treatment is reserved for patients who do not have access to CBT or who have not responded to it as first line. Along with CBT, sleep hygiene measures should be recommended, such as avoiding the use of electronic devices before going to sleep, as well as going to bed and waking up at the same time every day. One can also reflect on the possibilities of a rural worker being able to undergo CBT in its context, or even if this is a real possibility within the scope of rural PHC.

However, guidelines for non-pharmacological measures, such as “sleep hygiene”, should precede the prescription of medications for the treatment of insomnia. The choice of drug treatment should take into account the patient’s comorbidities and the type of complaint presented. Drugs with less daytime sedative effect, low dependence potential and fewer adverse effects should be chosen. Constant monitoring, every two to four weeks by a medical professional is recommended to assess the possibility of suspension or the need to change the medication.

Pharmacotherapy in insomnia should never be considered a treatment for insomnia alone. It is noteworthy that benzodiazepines, among insomnia medications, are no longer recommended because they are associated with adverse effects such as drowsiness, dizziness, fatigue, rebound insomnia, risk of falls, abuse and dependence, cognitive decline and rapid loss of hypnotic efficacy, and there are safer options. Its prolonged use, for more than six months of treatment, may lead patients to clinical conditions of chemical, physical or psychological dependence.
Among the drugs approved for insomnia are: benzodiazepine receptor agonists, which include zolpidem, a melatonin receptor agonist; histamine receptor antagonists such as low-dose doxepin; and dual orexin receptor antagonists. There are still a number of alternatives used as off-label prescriptions and herbal and over-the-counter medications, such as dietary supplements (melatonin). Considering the phytotherapeutic options commonly used in Brazil, the use passion fruit in infusion is recommended, but not allowing chronic use or combined with treatments with sedatives. Other recommended plants are melissa (with antispasmodic, anxiolytic and mild sedative effects), valerian (the use of which requires care because of its hepatotoxicity and additive effect if taken with benzodiazepines and barbiturates) and plants recommended as mild sedatives with no restrictions on use, such as basil, mint, chamomile and lavender. In the absence of depression, benzodiazepine receptor agonists can be used in initial or maintenance insomnia, with a lower risk of dependence, but without evidence of long-term use. When the patient is diagnosed with depression, it is necessary to consider the use of antidepressants, such as amitriptyline and fluoxetine, and drug interactions.

Health determinants and lack of care coordination

According to the Alma-Ata Declaration of 1978, PHC represents the first level of contact of individuals, families and communities with the national health system. Through it, health care is brought as close as possible to places of people’s lives. It is built based on the attributes of: first contact, longitudinality, integrality and coordination. The first contact refers to the accessibility of the health system user to each problem that leads him to seek medical attention. Longitudinality, on the other hand, requires the maintenance of care over time, with the guarantee of comprehensive care — based on the recognition that health involves biological, psychological and social aspects. To consolidate these attributes, there is a coordination of care to guarantee the continuity of care, providing constant follow-up of the problems that require it. However, when this continuous care is flawed and fragmented by the high turnover of health professionals, by the excessive demand of work, the treatments can become less effective for the patient.

In the case in question, when analyzing the factors that led to the prolonged use of benzodiazepines, low-cost psychotropic drugs and easy access to public health, commonly prescribed inappropriately, a lack of coordination of care, longitudinality and bonding is perceived.

In the context of the initial prescription of this drug and its continued use, it is possible to reflect on the practice of attributing to the drug the potential symbology of a health promoting agent so that any threat to health — reduced to an organicist view — needs to be fought with a drug. Thus, as in this case, insomnia is promptly counteracted with the use of a benzodiazepine. This practice ignores the existence of health determinants, such as social and behavioral causes at the origin of the disease, and makes it difficult to use a longitudinal and multidisciplinary therapeutic process that seeks to act at the origin of the disease, contributing to the medicalization of society.

Studies have already identified that the prescription of these drugs is frequently renewed for users who already use them, without evaluating the need for maintenance of the drug or its side effects. This fact acts as a naturalization of the use of benzodiazepines for prolonged periods, which also influences the attitude of the patient in relation to the use of the medication.

In PHC and, it can be inferred, especially in rural areas such as that of the patient in this report, the turnover of medical professionals and the failure to build a bond with the population lead to a lack of
longitudinality in patient care and follow-up, which increases the risks of inappropriately prescribing this type of medication. A weak bond between the health professional and patient acts as a determinant for the medicalization of care. This is associated with the fragmentation of care with the fragility in the matrix support and in the coordination of care together with the mental health team, or the limitations in the training of professionals in mental health work, both in the identification of the underlying condition and in the withdrawal or reduction of medication.32

CONCLUSIONS

This case study reflects on the tobacco industry and the lack of longitudinality and deficiency of care coordination as determinants of harmful prolonged use of drug prescription in a rural area. In this case, the working conditions and excessive worries due to the debt with the tobacco company, the personal and family history of depression, living in a rural area, isolation and frequent changes in the medical staff were determinants of the health condition and also resulted in the long-time use of diazepam.

As a lesson, we can learn that there is a need to: understand the reasons for a prescription, in this case mainly for insomnia; understand the tobacco industry as a socioeconomic determinant of health; retain health care professionals in rural areas, avoiding their turnover and the discontinuity of patient follow-up; provide non-prescriptive guidelines, such as those related to sleep hygiene; and know how to unprescribe a medication, such as those of the benzodiazepine class.

Thus, the importance of acting on health determinants with a broad therapy that considers the origin of the problem and not just the medicalization or renewal of prescriptions is perceived, understanding the importance of improving daily living conditions and working conditions.

CONFLICT OF INTERESTS

Nothing to declare.

AUTHORS’ CONTRIBUTIONS

MLKL: Conceptualization, Writing – original draft, Writing – review & editing. AC: Data curation, Investigation. AJAC: Data curation, Writing – original draft, investigation, Methodology. MF: Writing – original draft, Methodology, Supervision, Visualization. MAOS: Conceptualization, Writing – original draft, Visualization. GDL: Conceptualization, Writing – original draft, Visualization.

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