
THE MEANINGS OF SILICOSIS HELD BY ILL QUARRY WORKERS¹

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ABSTRACT: This study's objective was to identify the meanings of silicosis held by ill quarry workers. It was based on medical anthropology and focal life history. Data were collected through semi-structured interviews and by direct observation in the homes of eight patients with silicosis registered in the Epidemiologic Surveillance Service in Guapé - Minas Gerais, Brazil. The inductive thematic analysis technique was used to synthesize the thematic cores: explanations attributed to the disease, severity of the disease, and its consequences. According to the participants, the disease is permeated by suffering and changes in social identity, in the context of young men working with silica. These meanings allow occupational nurses to provide differentiated healthcare, to develop preventive actions and actions aimed to properly modify the workplace. Additionally, the results can help improve strategies for disease reporting and treatment adherence.

DESCRIPTORS: Silicosis. Culture. Medical anthropology. Occupational health nursing.

OS SENTIDOS DA SILICOSE ATRIBUÍDOS POR TRABALHADORES DE PEDREIRAS ADOECIDOS

RESUMO: Este estudo teve o objetivo de identificar os sentidos atribuídos à silicose entre trabalhadores de pedreiras adoecidos. Foi baseado na antropologia médica e na história de vida focal. Os dados foram coletados por entrevistas e observações diretas realizadas no domicílio de oito portadores de silicose, cadastrados no Serviço de Vigilância Epidemiológica de Guapé - Minas Gerais. A técnica de análise temática indutiva foi usada para sintetizar os núcleos temáticos: a explicação para a doença, a sua gravidade e conseqüências. Por eles, consideramos que a doença é permeada pelo sofrimento e alteração da identidade social, contextualizada no trabalho de homens jovens com manuseio da sílica. Esses sentidos fornecem uma base com a qual o enfermeiro do trabalho pode prestar um cuidado diferenciado, desenvolver ações de prevenção aos riscos à saúde, de adequação do ambiente de trabalho, além do aperfeiçoamento das estratégias de notificação dos agravos e de adesão ao tratamento.

DESCRIPTORIOS: Silicose. Cultura. Antropologia médica. Enfermagem do trabalho.

LOS SENTIDOS DE LA SILICOSE ATRIBUIDOS POR TRABAJADORES DE CANTERAS ADOLECIDOS

RESUMEN: Este estudio objetivó identificar la atribución de los sentidos de la silicosis por trabajadores de canteras, basándose en la antropología médica y en la historia de vida focal. Los datos fueron recolectados por medio de entrevistas semi-estructuradas y observaciones directas realizadas en el domicilio de ocho portadores de silicosis, registrados en el Servicio de Vigilancia Epidemiológica de Guapé - Minas Gerais, Brasil. El análisis inductivo temático fue usado para sintetizar los núcleos temáticos: explicación para la enfermedad, gravedad de la enfermedad y sus consecuencias. Según los trabajadores, la enfermedad es permeada por el sufrimiento y alteración de la identidad social, contextualizada en el trabajo de hombres jóvenes que manosean la sílice. Los sentidos presentados permiten al enfermero laboral prestar una atención diferenciada, desarrollar acciones de prevención a los riesgos a la salud y de adecuación del ambiente de trabajo. También permiten el perfeccionamiento de las estrategias de notificación de enfermedades y adhesión al tratamiento.

DESCRIPTORIOS: Silicosis. Cultura. Antropología médica. Enfermería del trabajo.

INTRODUCTION

Knowledge in the occupational health field enables us to identify areas where there is a potential risk of disease and to relate occupation to illness. This is the case of the Furnas Lake region in the state of Minas Gerais, Brazil, where there is intense exploration for quartzite in the various quarries existing in the area, which in addition to intoxication, causes dermatitis due to excessive exposure to silica and is related to cases of reported silicosis in the region.^{1,2}

Silicosis is a fibrosing lung disease caused by the inhalation and depositing of crystalline silica particles that leads to a reaction in the lung. It is considered an irreversible and chronic occupational disease, included in a larger set of diseases, pneumoconiosis, that are highly prevalent. Brazil has a prominent position in its incidence due to its epidemic growth.¹ Even though silicosis is an avoidable disease, it still draws the attention of the International Labour Organization (ILO) and the World Health Organization (WHO), which are attempting to eradicate it.³ Silicosis initially presents minimum radiological and functional respiratory impairment. As it progresses, other symptoms, such as difficult gas exchange and progressive dyspnea on exertion appear. Radiographic changes are observed in the upper lobes and bilaterally in posterior segments. Over time, the entire lung parenchyma may become compromised. Characteristic radiological images and the patient's occupational history are essential to diagnosing silicosis.¹

The treatment recommended for silicosis mainly consists of ceasing exposure to silica and alleviating the symptoms presented by patients. Corticosteroid therapy and inhalation of powdered aluminum are still experimental.^{1,3}

There are still 30,000 people with the disease in Brazil after almost 30 years of studies. Open quarries are responsible for about 3% of this prevalence, according to the Brazilian National Program for the Elimination of Silicosis.^{2,3}

We found many papers on silicosis when conducting the literature review but most authors either discuss the disease's incidence, clinics, pathology or highlight associated diseases, while none of the studies present the disease from the perspective of patients, which justifies this study.

This study was based on the assumption that every experience with a disease is constructed by

people based on their knowledge and cultural values. Hence, this study is grounded in medical anthropology and developed in light of life oral history.

Acknowledging the patients' view concerning the disease through meanings they construct based on their experiences, is one element on which nurses can ground prevention actions and support follow-up for patients.

OBJECTIVE

Based on the previous discussion, this study's objective is to identify the meanings of silicosis among sick quarry workers.

THEORETICAL METHODOLOGICAL FRAMEWORK

Even when health workers and patients have the same social and cultural origin, they see health problems from different perspectives. Based on this assumption, medical anthropology focuses on the ways different cultures and social groups explain the causes of their problems, types of treatments they trust in, biological, psychological and social changes occurring in human bodies, and the disease process through the construction of meanings.^{4,5}

Among the various assumptions of this theoretical framework, we base this study on the concept of an Explanatory Model (EM),⁶ which enables the description of the cognitive process that orders and signifies the disease experience and adds folk conceptions to the medical model. The author conceptualizes healthcare systems linking different elements related to health and disease. These systems comprise three social care sectors: a) professional - composed of scientific medicine or professionalized medical systems; b) folkloric - composed of experts such as healers, those who pray, and others; c) popular - composed of non-specialized lay people such as family, friends, neighbors, and others. Additionally, EM was developed as a theoretical instrument to explore issues related to symptoms, diseases, and the evaluation of therapies among patients, as well as to understand their needs in a care practice system⁷. It is, however, important to keep in mind that the interpretation of meanings people attribute to a disease experience is the result of the various means through which they acquire their medical knowledge and that this knowledge varies

from person to person because it originates from specific life situations.^{5,7}

The following elements are necessary to obtain an EM: when and how the symptoms appeared, the disease's etiology and its physiopathology, degree of severity, treatment provided and prognosis⁶ from the perspective of the patient obtained through a methodological approach that enables close contact with patients so they can uncover meanings attributed to the disease.

Therefore, this study was developed in the method of focal life history, which enables the researcher to discover, explore and evaluate how people understand their past history, link their experiences concerning their disease to their social and occupational contexts, how they interpret and give meaning to it,⁸ according to the assumptions of EM.

METHOD

Eight workers older than 18 years of age, diagnosed with silicosis, registered in the Epidemiological Surveillance Service in the city of Guapé, Minas Gerais, Brazil and living in the region, were invited to participate in the study. They received clarification about the study's objectives and consented to participate by signing free and informed consent forms.

Data collection was conducted through scheduled interviews recorded and held in the participants' homes and guided by the following questions: How did your disease start and what did you do? What do you think caused the problem? Do you think it is severe? How is the treatment? How is your life with the disease? In addition to these questions, we sought to characterize the participants in terms of education, income, religion, age, marital status, and duration of their disease.

An interview, which lasted one hour on average, was held with each patient. We directly observed the participants' behavior during the interviews in order to register their life context in a field notebook.

The interviews were transcribed verbatim together with the observation data. Afterward, the data were organized and submitted to inductive thematic analysis⁹ composed of the following procedures: 1) reading of the entire material; 2) detailed reading of each text to

identify similarities, differences, and details of narratives, classifying them into codes; 3) delimitating common and different meanings expressed by the participants following the interview's questions, which enabled the construction of analytical categories or thematic cores that integrate the EM; 4) a discussion of results based on the participants' contexts of life (socio-demographic characteristics).

We initially classified the data's content into the following: initial signs and symptoms, diagnostic process, explanations for the disease, explanations for the treatment, consequences of the disease and consequences of the treatment that impacted their lives. Afterward, we integrated these codes into the thematic cores: explanations attributed to the disease, severity of the disease, and its consequences. These thematic cores provide meanings attributed to the condition in which sick quarry workers live, as well as the constitutive elements of EM, interpreted according to the concepts of anthropology and compared with the medical literature.

The participants' narratives or excerpts that represent the meanings constructed by the researchers are presented and identified by fictitious names; their age will also be highlighted to show the phase of life they are experiencing.

The Project was approved by the Ethics Research Committee at the University of São Paulo at Ribeirão Preto, College of Nursing (Process no. 0882/2008)

RESULTS

The participants' characteristics are initially presented because the interpretation of results has to be considered in relation to the social context. This is an accuracy criterion in this type of study.

Participants' social characterization

Six of the participants are aged between 30 and 36 years old (75%), one (12.5%) is younger than 30 years old and another participant (12.5%) is older than 50 years old. Most (62.5%) are married, two (25%) are single and one (12.5%) is widowed. Six (75%) are Catholic, one (12.5%) reported no religion and one (12.5%) is evangelical Christian. In relation to education, seven (97.5%) have incomplete primary school and only one (12.5%), the youngest, completed high school. These social

characteristics are similar to those reported by other Brazilian studies addressing the incidence of the disease.^{2,10}

The social characteristics show that the participants are men coming from the low-income class composed of workers living in urban areas and in poor financial conditions that resulted from poor working skills and low education, and, consequently, limited access to public services such as education and health.¹¹ Given these characteristics, opportunities in the job market are limited and these individuals' only option seems to be working in the quarries in the region.

An aspect that draws attention is the length of time they worked in the quarries until the diagnosis was confirmed: five (62.5%) participants worked in the extraction or processing of quartzite for 10 to 15 years, two (25%) worked for seven years and one (12.5%) worked for 50 years. All the informants had a silicosis diagnosis confirmed between 2003 and 2008.

The meanings attributed by the participants to silicosis

An explanation for the disease

In relation to the beginning of the disease, some informants reported respiratory symptoms while others were asymptomatic. For the first group, the perception and importance attributed to the signs and symptoms that the body was not working appropriately was the starting point for seeking understanding of their condition, as one of the participants reported: [...] *I was 16 years old when I started working with stone; about five years ago, I started feeling a bit tired, mild cough, chest pain, which started getting worse. I went to the hospital many times and they'd say I had nothing. One day they asked for an X-ray and then they saw it got worse a lot! I thought that my chest pain was either because of my weight or because of the flu. I'd got home so tired at night that I couldn't even have dinner, and that went on... until they asked for an X-ray to uncover it out [...]* (Ernesto, 32 years old).

Ernesto reported his difficulty in convincing the physician to pay attention to his body's signs and symptoms and determine his health problem, which caused him to become outraged. [...] *they said I had infiltration in my lung and referred me to a pulmonologist in Passos [Minas Gerais]. He asked for an X-ray and a CAT scan. Then I went to*

Ribeirão Preto [Sao Paulo] and was diagnosed with silicosis... I was the first case here in Guapé. Nobody knew it existed; mine was the first case! It has taken five years for my problem to be discovered. They'd say I was faking...there were no cases; after me, they found out about Davi, who passed away, Amarai who is dying, and now there are many cases [...] (Ernesto, 32 years old).

Considering that Guapé is a small town, as silicosis cases and deaths due to the disease became known, asymptomatic workers became more aware and started to pay more attention to the issue. As a consequence, they initiated a movement to confront employers so that their health conditions would be regularly assessed, as one put it: [...] *I asked for an X-ray but no physician wanted to do it. I went four times to the hospital and every time they said I had nothing, I had to demand an X-ray. So, he said: "I'll ask for an X-ray so you'll be assured, but you don't have anything." When I finally had the X-ray, it was too late, I already had a spot [...]* (Ernesto, 32 years old).

The impact of the medical diagnosis of a little known disease may be grasped by expressions such as [...] *I went to the hospital and the doctor said: you have little time left to live, given what I see in your X-ray [...]* (Ernesto, 32 years old).

The report of one of the patients reveals, in addition to the impact of the diagnosis, his previous perception of invulnerability. [...] *I've heard about it [the disease] among the guys. I'd say: "ah, there's no risk, no! But only afterward is that you realize it is true! When the doctor said it, I nearly died of shock! [...]* (Dorival, 23 years old).

The next step included seeking treatment, which proved to be as stressful as getting a diagnosis: [...] *I found the silicosis when I went to Caxambu [Minas Gerais] in 2004. The doctor there found it was silicosis. Then I went to Passos and the doctor referred me to Belo Horizonte for treatment. I couldn't go there because I didn't have transportation. I scheduled an appointment for the 28th. I have to go there on the 28th. Now I'm undergoing treatment in Belo Horizonte; the doctors are monitoring it... Because it is too expensive... health services here in the city are not good, I had to go twice to Belo Horizonte. They do not arrange transportation for me and things become more complicated, we have to keep on fighting. I only use the inhaler to breath and a pill to put in the device and breath. I was using it every day, I was using 360 pills per year [...]* (José, 59 years old).

After the diagnosis is confirmed, the symptoms finally have a name – silicosis. Thereafter, each individual has an unexpected disease, which disrupts one's life projects and social identity; the individual becomes a patient. To give meaning to their experience, the participants seek an explanation for the disease based on their cultural (lay) knowledge and medical knowledge they acquire over their lives, as exemplified by this report: [...] *when I started using the equipment, it had already affected me... why it happened to me? I can't explain! Perhaps, it's because the place has no ventilation. The wind would strike the wall and come back. That dew, and you stay there in the midst of it. That's bad luck. I didn't know about it... the doctor said that silicosis is powdered stone. You saw it and that fine dust gets mixed with water, that moisture, you breathe all that and it goes to your lungs. The lung becomes stone and it won't open nor close [...]* (Antonio, 33 years old).

The severity of the disease and its consequences

The severity of the disease is acknowledged by the participants and the consequences permeate the dimensions of their lives: [...] *it's very severe! Now I can't even walk on the streets. I can't do anything nowadays. I start coughing if I start walking [...]* (Antonio, 33 years old); [...] *the disease is serious because it erodes the person bit by bit, it takes out oxygenation, you become weakened... the doctor said that the cure for silicosis... is either a miracle of God or lung transplantation [...]* (José, 59 years old).

Nonetheless, early detection of the disease enabled two patients each to maintain a non-impaired physical condition. How they minimize their current condition, seeking an unreal hope, draws our attention, maybe justified by the fact they are still young men [...] *I'm fine, I feel nothing! In my case, thank God, I guess the disease is not serious, because I found out before it did any harm. The doctor said that I won't have anything bad; if it was to cause any harm, it would have already; perhaps when I become old, and perhaps they find a treatment for this. I asked him if I would become disabled, otherwise I'd not even get married. But he told me to stay calm [...]* (Dorival, 23 years old); [...] *the doctor detected a problem but it is not very serious. I, thank God, am normal. Can you imagine walking around with an oxygen tank?... I guess it must be very sad. I guess God helped me a lot. I guess it depends on the person's body, I guess there are strong bodies and fragile ones. Me, thank God, I believe I have a strong body [...]* (Francisco, 32 years old).

Due to the physical conditions that result from the disease, the need to interrupt their work was reported by the participants: [...] *the doctor said that my problem was very severe, very advanced, both my lungs were swollen and I was in no conditions to keeping work with this activity. Any little effort and I get tired and my back starts aching [...]* (Raimundo, 30 years old); [...] *the doctor prescribed these medications and they help to control it a bit. The doctor said it is incurable, that it stays as it is, paralyzes... I can't work there any longer. I keep using this when I feel short of breath, have a headache, and I keep going... there are days I am able to work but other days I can't! The doctor said that it won't get better... I'm afraid, well, I'm already afraid because my life has certainly shortened, that's for sure [...]* (Manoel, 32 years old); [...] *the occupational doctor said it wasn't too severe, that I should stop and find another job not related to dust, otherwise it would get worse [...]* (Dorival, 23 years old).

The preceding discussion reveals that seven of the eight participants with silicosis are young adults with personal and social projects halted due to the disability caused by the disease and by secondary prevention. For a man under 40 years old, a highly productive age, working is one of his main social functions. The need to abandon work because of the disease leads to low self-esteem, dependency and a sense of being marginalized.

The prognosis shows the difficulties found in the social security system and in the production system itself in dealing with problems related to occupational diseases. We note that six of the participants did not have a formal job contract.

All the eight informants, as a way to remain active and feel they are exercising their citizenship, express the importance of prevention, of employers and official systems becoming more participative in controlling silicosis. They also note the importance of solidarity and sympathize with other workers still working with "stone dust": [...] *everybody should stop sawing stone, nobody should work with stone. So, then we'd prevent the disease. I think that otherwise nobody is able to prevent it, because there is no appropriate mask for that, any way you do it there's dust, dirt water and dirty byproducts. So, here's the deal: if you find the disease at the beginning, they won't fire you because they lose. You have to wait, become very sick to take government support sick leave. Some already left Guapé. More rigid surveillance is needed: there is no appropriate water to drink in these*

facilities; there is a lot of things wrong; things should be more fair [...] (Ernesto, 32 years old); I guess that the companies processing stones should take measures. Because we never imagined we would have this problem. I believe the tendency is it to get worse in our region. There are people from my time that are still working with it. If you're working they are good to you. If you have any problem then they throw you aside [...] (Raimundo, 30 years old).

DISCUSSION

Time of exposure to silica is determinant in the emergence of lung lesions. Hence, the longer the exposure, the more harmful it is. Silicosis progresses slowly and insidiously, over a period of ten to 18 years. If, however, exposure is intense, the disease may set in even in a period of less than five years. The disease is characterized by progressive fibrosis of lung parenchyma. Dyspnea on exertion and coughing are the main symptoms and, most of time, a physical assessment does not show significant changes in the respiratory system. It is observed via a chest x-ray through round opacities and nodules that first appear in the upper lung areas.^{2,10}

The biomedical model states that silicosis initially leads to mild respiratory symptoms, such as a mild cough. As it progresses, difficulties in gas exchange may appear with progressive dyspnea upon exertion, as reported by the six informants.¹

Culturally, the experience of *"tiredness, mild cough, and chest pain"* at first requires solutions obtained in the informal and family system with homemade remedies. As the signs and symptoms worsen, *"even talking, I don't know if you notice it, my voice is faulty; I get short of breath"*, the participants recognized their bodies were not normal, harming their work and their other social functions. In this situation, there is a guideline established in the social-cultural group that the situation requires intervention provided in the official health system, and the physician is the professional with the power to solve the problem.^{5-6,12}

The steps the participants had to take until a diagnosis was reached were characterized by *"a lot of exams"*, repetition of exams, referrals from one health unit to another, from one city to another, which were certainly permeated by uncertainty, anguish and suffering imposed on both the patients and their families.

We understand the medical diagnosis as a ritual process and being part of this ritual, when

in the case of a little known disease, is a challenge for the professionals who work in the primary health care system just as it is for patients. The physician employs a series of exams, which vary according to his/her professional beliefs and the available technological resources, such as an X-ray, CT scan, and others⁴. The repetition of exams postpones the definition of a diagnosis from the perspective of the informants. Additionally, it requires the patients to go to services with better diagnostic resources far away from their cities of origin without any logistic support or financial resources.

The informants' testimonies enable us to grasp that lack of knowledge concerning the occupational risk of cutting stones is a reality coherent with their social characteristics, showing that many minimize the relationship of the *"stone dust"* to their physical symptoms and conditions. A perception of being invulnerable to diseases is frequent among low-income classes.¹²⁻¹³

When authors discuss how such a risk is culturally and socially addressed, they clarify that humans perceive the world through a filter of values and seek in this filter meanings for such a risk. From this perspective, behaviors are associated with representations that are formed in the interactions among people, differing from a simple cognitive perspective. These representations are mediated by a cultural complex that influences the way individuals perceive a risk and that can lead to specific actions, such as ignoring the possibility of a disease actually occurring.¹³

It is acknowledged that there is a social construction among men of being indifferent to self-care because they find being in the position of a patient to be embarrassing. In a folkloric sense, men are strong and seeking for professional medical help may be an indication of weakness and dependence, which by itself causes some degree of suffering.^{12,14} It is also true that not being listened to certainly leads to a feeling of powerlessness.

With this mindset, individuals see themselves as being invulnerable; it is the same as closing their eyes, ignoring dangers and not allowing questioning, especially among males.¹⁴

Therefore, the etiology of the disease is related to the context of cutting silica, producing an excessive amount of *"stone dust"* associated with environmental and natural aspects *"closed areas, with no ventilation, exposure to wind and mois-*

ture", that is, external causes. Other informants add other causes, such as bodily frailty and fate. Even though they reported that protective equipment was not used, in particular, masks were not used, some report disbelief in disease prevention. Again, the possibility of risk is denied and the responsibility for the disease is projected onto others: the employers' neglect, lack of information and "bad luck". As previously explained, the causes are general and relational, that is, silicosis was caused by the relationship of the individuals with the "stone dust" and by the characteristics of their work.

As a consequence, the informants legitimize their ideas about the development of silicosis through medical discourse "the doctor said...". Hence, the starting point to understand the disease's physiopathology is based on the biological model, the activity's harmfulness, and workplace.¹⁵⁻¹⁶

Treating silicosis requires access to an expert – a pulmonologist – who is not a professional included in the medical staff of any primary health care unit. Thus, sometimes the patient is required to commute to other cities, often to distant cities, without adequate resources.

The informants also reported that medication is not always accessible and is frequently expensive, which has repercussions on their families' financial conditions since in this social class, men are the main source of the family's sustenance.^{12,14}

The medical literature on fibrogenic pneumoconiosis due to exposure to silica is clear in stating that silicosis is incurable and treatment is palliative, which mainly consists of immediately abandoning the occupation and using medication to manage respiratory symptoms.^{1,3}

All the informants acknowledge the severity of the disease. Worsening physiological and mental conditions have consequences, such as interrupted life projects, loss of independence, social isolation, job abandonment, and frequent hospitalizations, among others.

The prognosis, seen as the image of future, is gloomy because it reveals an irreversible and progressive worsening of physical condition. This is further supported by the standardized discourse of health professionals that strengthens the logic of inability and fatality.¹⁶

Individuals with silicosis perceive their finitude, the fatality of their condition. Death is announced but they do not externalize it; they

put it into suspension as a strategy of resignation, so they will not succumb mentally because life must go on.¹⁵⁻¹⁶ We should emphasize that two informants, one 36 and the other 33 years old, died some weeks after their interviews.

Even in the face of the adversities caused by the disease, hope is a valuable feeling that drives those with the disease toward life. In this sense, Latin culture is marked by resignation and hope in situations of severe disease. Acting with resignation is a way to cope with the consequences of silicosis.^{12,15} Solidarity added to resignation, and sympathy for colleagues who still work in "stone quarries" without adequate protection in an unhealthy environment that does not comply with occupational safety standards, enable them to restore their will to exist.

The National Program for the Elimination of Silicosis in Brazil proposes the goal to reduce the incidence of the disease by 2015 and eliminate it as a public health problem by 2030.^{3,10} Despite those actions that are already implemented, severe cases are still observed and are repeated in the same workplaces as observed in the reports of various informants. Sick individuals work in small companies, 50% of which are in the informal job market, which hinders the reporting of cases and controlling exposure, as is the case of quarries in Guapé-MG.

In this context, the development of technologies appropriate to primary prevention is one of the program's main principles, as well as the establishment of a policy concerning education and qualification in health management and guidance in health services directed to workers in order to develop health surveillance of workers exposed to silica.³

The epidemiology of silicosis in Brazil reveals risk exposure, especially in Minas Gerais.² We cannot lose sight of the fact that silicosis is a preventable occupational disease. In this sense, we stress the role of Occupational Health Nurses, directly involved in reducing the incidence of the disease and in eliminating it, as well as in providing differentiated healthcare access to patients undergoing treatment.¹⁷

FINAL CONSIDERATIONS

As we identified the meanings attributed by eight stone workers with silicosis, seven younger than 40 years old and one 59-year-old participant,

from the interior of Minas Gerais, Brazil, we interpreted their world as experienced with the disease, clarifying the process by which they constructed their conceptions and how these are incorporated into their language and actions.

Based on explanatory models, the analysis of meanings assigned to the experience enabled us to delimit a set of meanings that connect ideas concerning bodily manifestations to the work with silica dust, the repercussions on life due to the search for a diagnosis, treatment and expectations for the future, providing specific interpretations for the disease, contextualized in the work of low-income young men with silica.

We understand that the diagnosis, treatment and life with silicosis are permeated by suffering, by the rupture of projects of life, by the loss of social identity. The severity of the disease is acknowledged and death is a possibility, held in suspension as a coping strategy, in an attempt to recover human value. Even though not all the participants believed in the effectiveness of respiratory protective devices to prevent silicosis, the only possibility that remained for them to become active again was to question the responsibility of others and be sympathetic with colleagues who still work in quarries. For that, the informants guided themselves according to their own rationales integrating moral values, traditional knowledge and medical discourses.

Such conceptions, as well as contextual factors – financial resources, access to care services, the need to abandon the job – influence behaviors, and for this reason, should be considered in the planning of prevention campaigns and palliative care programs for those with silicosis, in which occupational health nurses may have a vital role in recognizing and dialoguing with and connecting other health workers involved in occupational health care.

This study's results motivate us to encourage nurses working in the Occupational Health field to investigate the experiences of other cultural groups such as tile workers and construction workers, who are also highly vulnerable to silicosis.

REFERENCES

1. Barboza CEG, Winter DH, Seiscento M, Santos UP, Terra Filho M. Artigo de revisão: tuberculose e silicose: epidemiologia, diagnóstico e quimioprofilaxia. *J Bras Pneumol*. 2008 Nov; 34(11):959-66.
2. Carneiro APS, Campos LO, Gomes MFCF, Assunção AA. Perfil de 300 trabalhadores expostos à sílica atendidos ambulatorialmente em Belo Horizonte. *J Pneumologia*. 2002 Nov-Dez; 28(6):329-34.
3. Ministério da Saúde (BR). Secretaria de Atenção à Saúde. Departamento de Ações Programáticas Estratégicas. *Pneumoconioses*. Brasília (DF): Editora do Ministério da Saúde; 2006.
4. Helman CG. *Cultura, saúde e doença*. 4ª ed. Porto Alegre (RS): Artmed; 2003.
5. Kreutz I, Gaiva MAM, Azevedo RCS. Determinantes sócio-culturais e históricos das práticas populares de prevenção e cura de doenças de um grupo cultural. *Texto Contexto Enferm*. 2006 Jan-Mar; 15(1):89-97.
6. Kleinman A. *Patients and healers in the context of culture: an exploration of the borderland between Anthropology, Medicine, and Psychiatry*. Berkeley (US): University of California Press; 1980.
7. Oliveira FA. Antropologia nos serviços de saúde: integralidade, cultura e comunicação. *Interface: Comunic Saúde Educ*. 2002 Fev; 6(10):63-74.
8. Bellato R, Araújo LFS, Faria APS, Santos EJJ, Castro P, Souza SPS et al. A história de vida focal e suas potencialidades na pesquisa em saúde e em enfermagem. *Rev Eletr Enf*. 2008 Jul-Set; 10(3):849-56.
9. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006; 3(2):77-101.
10. Algranti E, Handar Z, Ribeiro FSN, Bon AMT, Santos AM, Bedrikow B. Exposición a sílice y silicosis em el Programa Nacional de Eliminación de Silicosis em Brasil (PNES). *Ciênc Trabajo*. 2004 Jan-Mar; 9(11):1-12.
11. Romanelli G. Famílias de classes populares: socialização e identidade masculina. *Cad Pesq NEP*. 1997; 3(1-2): 25-34.
12. Dazio EMR, Sonobe HM, Zago MMF. Os sentidos de ser homem com estoma intestinal por câncer colorretal: uma abordagem na antropologia das masculinidades. *Rev Latino-am Enferm*. 2009 Set-Out; 17(5):664-9.
13. Fonseca MGU, Peres F, Firmo JOA, Uchoa E. Percepção de risco: maneiras de pensar e agir no manejo de agrotóxicos. *Ciênc Saúde Coletiva*. 2007 Jan-Mar; 12(1):39-50.
14. Gomes R. Sexualidade masculina e saúde do homem: proposta para uma discussão. *Ciênc Saúde Coletiva* 2003 Jul-Set; 8(3):825-9.
15. Muniz RM, Zago MMF, Schwartz E. As teias da sobrevivência oncológica: com a vida de novo. *Texto Contexto Enferm*. 2009 Jan-Mar; 18(1):25-32.
16. Caroso C, Rodrigues N, Almeida Filho N. "Nem tudo na vida tem explicação": exploração sobre causas de doenças e seus significados. In: Leibing A. *Tecnologias do corpo: uma antropologia das medicinas no Brasil*. Rio de Janeiro (RJ): NAU Editora; 2004. p.145-73.

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17. Azambuja EP, Kerber NPC, Kirchof AL. A saúde do trabalhador na concepção de acadêmicos de enfermagem. Rev Esc Enferm. USP 2007 Set; 41(3):355-62.

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