

Consequences of severe covid-19 on the occurrence of dreams

Consequências do acometimento grave por covid-19 para a ocorrência dos sonhos

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Guedes IHL, Figueiredo KS, Holanda ALS, Gaudêncio EO. Consequences of severe covid-19 on the occurrence of dreams / *Consequências do acometimento grave por covid-19 para a ocorrência dos sonhos*. Rev Med (São Paulo). 2025 Sept-Oct;104(5):e-228043.

ABSTRACT: Introduction: Although the origin of dreams remains uncertain, their relationship with lived experiences appears consistent. In this context, the pandemic period, related to Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), produced abrupt and intense disruptions in daily life, which may have impacted the dreaming experience—a phenomenon supported by previous psychoanalytically oriented studies. **Objective:** To evaluate the impact of severe COVID-19 on patients' dream experiences by collecting data on dream episodes reported before, during, and after hospitalization. **Methods:** This predominantly qualitative, cross-sectional study was conducted through interviews using a structured questionnaire. The study population included individuals aged 18 years or older who were hospitalized with severe or critical SARS-CoV-2 infection. Descriptive statistical analyses were performed to summarize the objective responses. **Results:** A total of six interviews were completed. Among respondents, 66.6% reported persistence in dream frequency after hospital discharge, and 50% described an increase in positive dream content during hospitalization. All participants reported post-infection physical and psychological symptoms, including alopecia, anxiety, memory impairment, and depressive features. Half of the participants reported dream content with religious or spiritual elements, and 83.3% sought support from relatives or friends to interpret the meaning of these dreams. Narratives revealed recurrent emotions such as fear and loneliness during the acute phase. **Discussion:** The data suggest that dreams seem to express symbolic representations of the emotional trauma associated with severe COVID-19. The absence of negative

dream content post-discharge may reflect psychological adjustment or relief following recovery. Although limited by a small sample size, the study provides preliminary insights into the neuropsychological and emotional repercussions of critical illness. **Conclusion:** The findings indicate that severe COVID-19 may influence the content and perception of dreams, particularly during the acute phase of illness. Further studies with larger cohorts are warranted to clarify these associations and to guide post-hospitalization mental health support strategies.

KEY WORDS: Severe Acute Respiratory Syndrome Coronavirus 2; COVID-19; Severe acute respiratory syndrome; Dreams.

RESUMO: Introdução: Embora a origem dos sonhos ainda permaneça uma incógnita, a relação destes com a experiência vivenciada parece ser uma constante. Desta forma, durante o período pandêmico relacionado ao Coronavírus 2 da Síndrome Respiratória Aguda Grave (SRAG-CoV-2) que modificou o cotidiano da população de forma súbita e intensa, seria esperado que houvesse repercussão imediata sobre os sonhos, fato este constatado em estudos, sobretudo de base psicanalítica. **Objetivos:** Analisar as consequências em pacientes portadores da forma grave de COVID-19 sobre os sonhos, por meio da coleta de informações acerca de episódios oníricos relatados, durante, antes e após o acometimento pela doença. **Metodologia:** O estudo: O estudo predominantemente qualitativo foi realizado mediante o preenchimento de questionários a partir de entrevistas realizadas com os participantes. O grupo de estudo incluiu indivíduos maiores de 18

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anos que desenvolveram forma grave ou crítica de acometimento pela SRAG-CoV-2. Os dados coletados foram analisados através de software estatístico e calculadas medidas de frequência para as diferentes respostas objetivas. **Resultados:** Foram realizadas seis entrevistas com pacientes recuperados. Desses, 66,6% relataram a permanência da frequência dos sonhos após a alta, e 50% observaram maior presença de conteúdos positivos durante a internação. Todos relataram impactos físicos e emocionais, como alopecia, ansiedade, déficit de memória e sintomas depressivos. Metade dos participantes mencionou experiências oníricas com conotações espirituais, e 83,3% buscaram apoio familiar ou social para compreender os conteúdos vivenciados. Emoções como medo e solidão foram comuns em todos os relatos. **Discussão:**

INTRODUCTION

Dreams are phenomena deeply connected to everyday human experience, occurring regularly throughout life, just like other essential biological functions, such as sleep and eating. Due to their relevance to understanding how the mind works, they have been the subject of studies in both neurological and psychological approaches. Thus, neuroscience and psychoanalysis are at the forefront of studies to elucidate these processes¹.

The publication of the book “The Interpretation of Dreams” by Sigmund Freud in 1900, through psychoanalysis, interpreted dreams as symbolic realizations of repressed desires, representative of a form of access to the unconscious. According to Freud, such dreams would encompass conscious and unconscious content which, due to the lesser influence of the id and the ego, repressors of instinctive manifestations, would find freedom to express psychic energy. Thus, the distortions characteristic of dreams would result from greater freedom for such instinctive manifestations, as well as factors such as condensation and substitution of representations.

Based on significant advances in the fields of psychology and neuroscience, other concepts about dream processes have been proposed. For other researchers, the problems described in dreams were actually associated with difficulties faced by the subject in everyday life, as demonstrated by the fact that hospitalized cardiovascular patients reported death as the main theme in their dreams⁴. Therefore, such dreams came to be seen by some scholars as an integral product of mental activity, such as the need to neutralize stress, resolve emotional and intellectual problems, and give vent to creativity, and not just express repressed feelings^{5,6}.

As for neuroscience, it was found that the neurophysiology of sleep and dreams received a significant contribution from 1950 onwards with the description of REM (Rapid Eye Movement) sleep, characterized by rapid eye movement, loss of muscle tone, and irregular breathing and heart rates⁷. Although the relationship between this stage of sleep and vivid dreams had already been established at that time, subsequent studies deepened this knowledge and provided even more details about the relationship between dreams and sleep. In 1962, encephalographs demonstrated the occurrence of different wave characteristics during the REM and non-REM phases of sleep, describing β , δ , and τ rhythms, the first being identified by faster

Os resultados deste estudo sugerem que os sonhos parecem expressar representações simbólicas do trauma emocional associado à COVID-19 grave. A ausência de conteúdos negativos após a recuperação pode indicar adaptação emocional. **Conclusão:** Apesar do número reduzido de participantes, o estudo sugere que a COVID-19 grave influenciou significativamente os sonhos dos pacientes hospitalizados, e evidenciou a importância de suporte psicológico e de novas investigações com um número maior de participantes.

PALAVRAS-CHAVE: Coronavírus 2 da Síndrome Respiratória Aguda Grave; COVID-19; Síndrome respiratória aguda grave; Sonhos.

waves similar to the waking state and the others by slow waves typical of the sleeping state⁸.

During the REM phase, there is greater blood flow to the cerebral cortex, predominant activation of regions such as the extra-striatal, limbic, and paralimbic cortex, and reduced activity in the prefrontal and primary visual cortex. In biochemical terms, most of these changes result from intense cholinergic action, reduced aminergic action, and the absence of orexins¹⁰. As a result, vivid dreams with many details are reproduced at this stage of sleep, simultaneously accompanied by high emotional involvement of the individual and logical impairment of events^{11,12}.

On the other hand, although REM sleep is associated with a higher occurrence of dreams, about 20% of individuals who wake up during this period do not report such manifestations, and approximately 10% of those awakened in the non-REM stage also report the occurrence of dreams¹³. Similarly, although REM sleep plays an important role in implicit memory consolidation, non-REM sleep is also involved in the acquisition of explicit memories¹⁴. Given these observations, several researchers have sought to clarify the neural circuitry involved in the origin of dreams, as well as the physiological functions related to these phenomena in everyday life. However, despite a wealth of consolidated knowledge, a comprehensive and consistent understanding remains a challenge to be overcome^{1,5}.

Although the origin and functions related to dreams are not yet clearly understood and agreed upon, among researchers seeking to answer this question, their relationship with everyday experiences seems to be a constant. The pandemic period attributed to Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), from its identification in December 2019 to September 2024, resulted in more than 776 million confirmed cases and more than seven million deaths worldwide¹⁶, and suddenly and intensely changed the daily lives of the general population. In this context, it would be predictable that the pandemic would have a direct influence on dreams, a fact proven in studies, especially those based on psychoanalysis¹⁷, mainly in individuals affected by the severe form of the disease, which is the central theme of this research.

This study aimed to analyze the effects of severe clinical cases of coronavirus disease 19 (COVID-19) on the dreams of affected patients. The analysis focused on the content of dreams during the critical period of the disease and compared

this between different individuals. Statistical correlations were performed to calculate the frequency of recurring themes in dreams and analyze changes in their frequency before and after the onset of the disease.

METHOD

TABLE 1 - Description of methodological stages

Methodological stages	Description
1. Initial survey	Survey of the Health Department on the number of patients with severe COVID-19 who were discharged from designated hospitals.
2. Information collection	Collection of information that enabled contact with patients who met the study inclusion criteria.
3. Initial contact	Initial contact with patients to assess the possibility of conducting online or in-person interviews, in accordance with health guidelines.
4. Application of questionnaire	Application of the questionnaire to participants during the interview, formation of the analysis corpus with the responses and discourses provided.
5. Content analysis	Analysis of the discourse according to the established content analysis methodology ¹⁸ , and comparison of the dream experiences among all participating patients.

Research instrument

The information was obtained from a previously structured questionnaire¹⁹ applied during interviews with research participants. This was applied after reading and signing the Free and Informed Consent Form (FICF), as well as emphasizing the main objectives of the study and providing contact information to answer any further questions. Thus, previously prepared questionnaires were used, whose answers should be provided by the participants in an objective and discursive manner during the interview.

Application of Questionnaires

The interviews were conducted after collecting information from patients at the designated hospital centers. Participants over 18 years of age were selected, according to the previously established methodology. The questions, as described in Table 2, were adapted from a pioneering study on the subject¹⁹ to the context of this study, with the aim of analyzing the occurrence of dreams in patients who developed severe COVID-19 and were discharged from the hospital.

Statistical Analysis

Statistical analysis was performed based on data compiled from the questionnaires and using Microsoft Office Excel version 2019²⁰ to calculate the frequency of the respective objective responses.

Inclusion and Exclusion Criteria

Individuals over 18 years of age, of both sexes, who developed severe or critical forms of SARS-CoV-2 and were admitted to one of the designated hospitals in the

This was a predominantly qualitative study based on data collected from patients with severe COVID-19 in the city of Campina Grande, Paraíba, Brazil. The stages of the research are described in Table 1. The study was conducted between July 2021 and June 2022.

municipality participated in the study. The essential symptoms for characterizing Severe Respiratory Syndrome were: flu-like syndrome and presence of dyspnea/respiratory distress, or persistent chest pressure, or peripheral oxygen saturation less than 95% in ambient air, or indirect signs of hypoxia such as cyanosis of the lips or face. Symptoms that could occur among critical patients were: sepsis, acute respiratory distress syndrome, severe respiratory failure, multiple organ dysfunction, severe pneumonia, need for respiratory support, and admission to intensive care units²¹.

Individuals who refused to answer the questionnaire and/or answered it incorrectly were excluded. In both cases, random replacements were made with patients who met the inclusion criteria.

Risks and Benefits

Data collection covered the experiences of study participants, so there were risks associated with conducting the research. Among these, the most notable were the recollection of dreams, as they represent a painful experience and are accompanied by memories of traumatic events that occurred during the treatment period in which they manifested. In order to reduce such unpleasant situations, psychoeducational guidance was provided to participants before the questionnaire was administered. Likewise, during the interview, any questions that could cause discomfort to participants were avoided.

The TCLE was presented to participants before the interview began and before they filled out the questionnaire. All items in the document were duly clarified, and participation only occurred after voluntary signature, as required by the standards of the Research Ethics Committees. In addition, as stated in the TCLE, participants were informed of their freedom to withdraw from the study at any point during the interview, without the

need for justification.

Ethical aspects

The research was conducted in accordance with CNS Resolution No. 466/2012, was submitted to the Research Ethics

Committee (CEP) of the Alcides Carneiro University Hospital of the Federal University of Campina Grande, and approved under CAAE 53620421.2.0000.5182, for the subsequent performance of the activities involved in the study. The observational study preserved the confidentiality of all data provided and collected.

TABLE 2 - Questionnaire applied during participant interviews

Theme	Question	Possible answers
1. Frequency of dreams after hospital discharge	“To what extent has the frequency with which you wake up remembering a dream increased or decreased since hospital discharge?”	+2 = increased a lot; +1 = increased a little; 0 = remained the same; -1 = decreased a little; -2 = decreased a lot.
2. Dream content after hospital discharge	“Since being discharged from the hospital, have the contents of your dreams become more positive, negative, or about the same as before you were admitted?”	+2 = much more positive; +1 = slightly more positive; 0 = almost the same as always; -1 = slightly more negative; -2 = much more negative.
3. Impact of Coronavirus	“Have you been personally affected by the Coronavirus pandemic in any of these areas? Select all that apply.”	Physical health (weakness, headache, difficulty breathing, hair loss, sore throat, muscle pain, loss of smell, loss of taste); Employment (layoff, furlough, change of workplace); Finances; Social (cancelled trips, inability to socialize); Mental health (mental fatigue, memory loss, anxiety, depression, sleep disturbances, difficulty concentrating, emotional lability); “None of the above”; “I prefer not to say.”
4. Changes in dreams during severe infection	“Did you notice any changes in your dreams during severe Coronavirus infection?”	More frequent with different content; More frequent with no change in content; Less frequent with different content; Less frequent with no change; No changes.
5. Assessment of changes in dreams	“How do you assess the changes that have occurred in your dreams?”	Mostly negative and related to the virus; Mostly negative, but rarely related to the virus; Mostly positive and related to the virus; Mostly positive, but rarely related; No changes.
6. Relationship between infection and dreams	“Do you believe that the worsening of the infection was responsible for changing the frequency and content of your dreams?”	“Yes, I believe there was a relationship”; “No, I don’t believe there was a relationship.”
7. Description of dreams during infection	“Please describe a dream you had during your severe Coronavirus infection, even if it is only a fragment, with as much detail as you can remember, including settings, characters, actions, thoughts, and emotions.”	Free description requested.

RESULTS

A total of 187 medical records of patients admitted to the Alcides Carneiro University Hospital of the Federal University of Campina Grande (HUAC/UFCG) for SARS-CoV-2 infection were selected and screened according to the flowchart shown in

Figure 1. Among the selected medical records, 114 were accessed to obtain the data necessary to conduct the research, and in 18 of these, death was confirmed. Among the remaining 96 medical records, 41 patients were contacted via the telephone number provided, resulting in 6 interviews, 21 refusals or no response to the invitation, and 14 interviews that were impossible due

to events such as the patient’s death, recent hospitalization due to new health events, comorbidities that prevented them from responding to the questionnaire, and geographical isolation that made it impossible to obtain a signed TCLE.

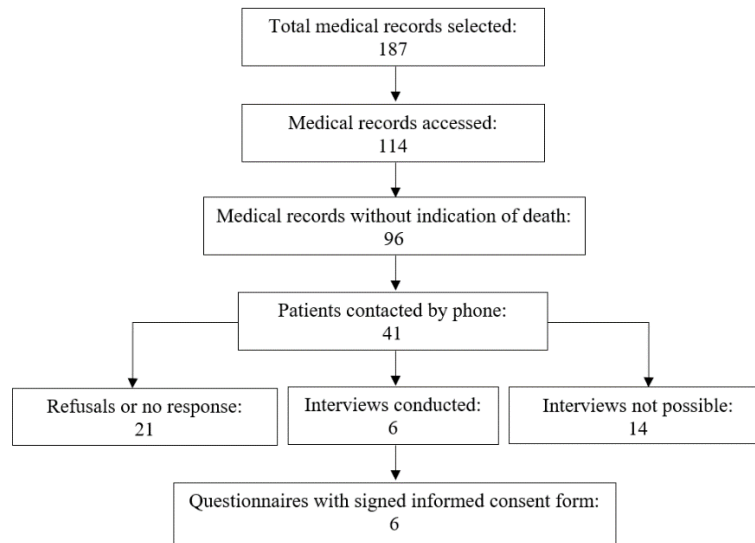


FIGURE 1 - Flowchart of medical record screening and participant selection

The data obtained from the questionnaire are summarized in Table 3 and represented in bar graphs in Figure 2.

Sixty-six percent of participants related the persistence of dreams after hospital discharge to physical and emotional problems. An increase in the frequency of dreams with predominantly positive content during hospitalization for treatment of severe infection was reported by 50% of patients. Regarding the areas of life impacted after infection with the new coronavirus, all participants mentioned only events related to physical and mental health, such as alopecia, anxiety, memory

impairment, and depressive symptoms.

Among the questions in the questionnaire, participants were asked to describe, in as much detail as possible, any dream events that occurred during hospitalization. Eighty-three percent of patients sought support from family and/or friends to understand the dream content during hospitalization. Half of the participants, due to the severity of the virus, presented changes in dream content positively related to the divine. Among the patients contacted to participate in the survey, 36.5% denied or did not respond to the invitation.

TABLE 3 - Responses to the questionnaires administered to study participants

Question	Answer	Percentage
Frequency of dreams after hospital discharge	Frequency of dreams	66
	Greater presence of positive content	33
Changes in dreams during severe infection	Increased frequency during hospitalization	50
	Lower frequency	33.4
	No change in quantity	16.6
Dream content during infection	Presence of mostly positive content	50
	No change in content	33
	Presence of more negative content	16
Relationship between infection and dreams	Believes there is a relationship	50
	Do not believe there is a relationship	50
Impacts related to physical and mental health	Alopecia and anxiety	66
	Memory loss	50
	Depression	16
Description of dreams during hospitalization	Seeking support (family/friends)	83
	Contact with the divine	5

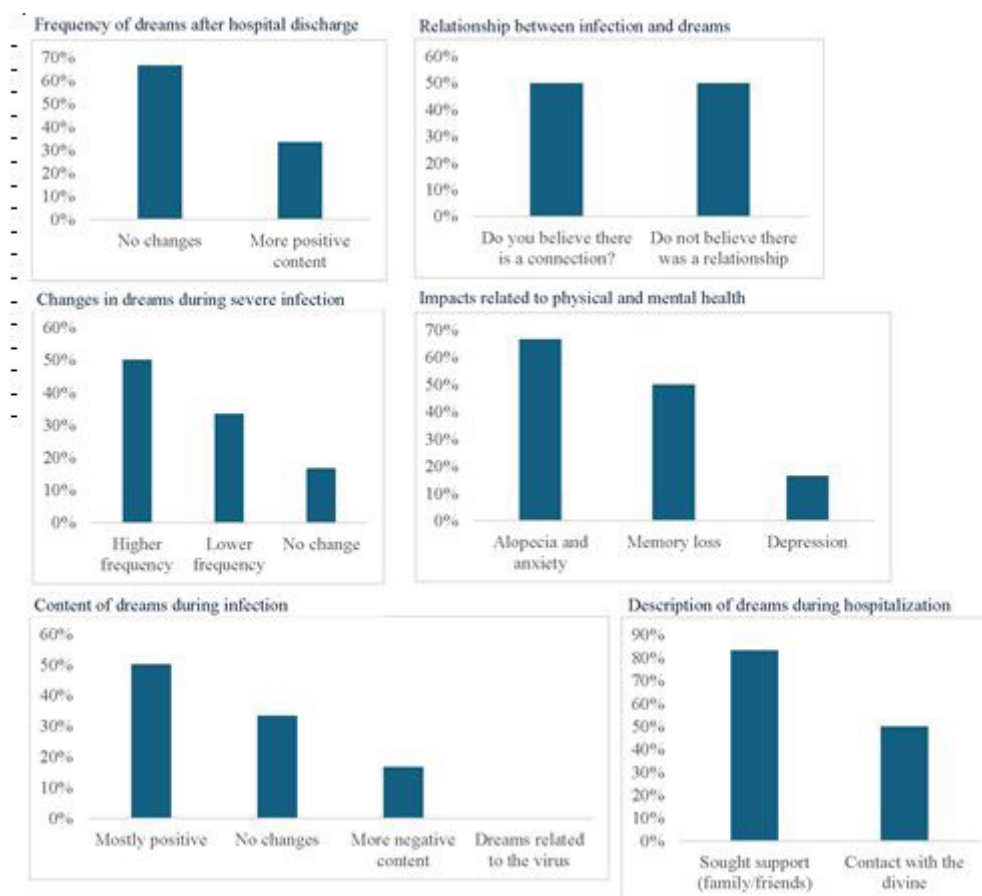


FIGURE 2 - Graphical representation of the results obtained from the questionnaire

When asked to describe their dreams during hospitalization, all patients reported negative events, such as feelings of loneliness and fear, which were present in all reports.

DISCUSSION

Although the virus and the pandemic were not directly mentioned as central themes of the dreams, the emotional content reported, especially fear and vulnerability, suggests a symbolic expression of the traumas experienced during hospitalization. This finding corroborates the assumption that traumatic events may be represented in dreams indirectly, as suggested by previous studies^{1,17}.

After recovery, participants did not report negative dream content, a finding suggestive of emotional adaptation or relief after the end of the acute phase of the disease. This change in content may also be related to reduced stress and at least partial restoration of a sense of security²².

Despite limitations, particularly regarding the small number of participants, this exploratory study suggests relevant evidence about the impact of severe COVID-19 on patients' dream experiences. Although it does not allow for generalizations, the results found may contribute to initial reflections that guide future research, in addition to guiding health professionals in the formulation of preliminary strategies for emotional support and psychological follow-up after COVID-19.

CONCLUSION

The pandemic caused by SARS-CoV-2 has triggered profound changes in people's routines. In addition, the consequences of severe forms of COVID-19 may have influenced the content of hospitalized patients' dreams.

The data obtained in the six interviews revealed a variety of responses. Although they do not allow definitive conclusions about changes in dream frequency during or after infection, the reports demonstrated the presence of feelings such as fear and vulnerability, expressed through symbolic images in dreams during hospitalization.

Despite the contributions of this study regarding the occurrence of dreams in patients with severe COVID-19, the data obtained are limited, mainly due to the small number of participants, which compromises the generalization of the results and should be considered when interpreting the conclusions. Despite its limitations, this exploratory study offers relevant evidence on the impact of severe COVID-19 on patients' dream experiences. Although it does not allow for generalizations, the results found may contribute to initial reflections that guide future research, in addition to assisting health professionals in formulating preliminary strategies for emotional support and psychological follow-up after COVID-19.

In view of this, it is important to conduct studies with a larger number of individuals and complementary methodologies

that allow for a deeper understanding of the emotional and psychological impacts of COVID-19. Future research may not only confirm or expand the initial findings of this study, but also

support more effective interventions in the psychological care of hospitalized or recovering patients.

AUTHORS' CONTRIBUTIONS: Research conception and design: Idrys Henrique Leite Guedes; Edmundo de Oliveira Gaudêncio. Acquisition, analysis, and interpretation of research data: Idrys Henrique Leite Guedes; Kleydson Figueiredo da Silva; Edmundo de Oliveira Gaudêncio. Writing and critical review of the manuscript with intellectual contribution: Idrys Henrique Leite Guedes; Kleydson Figueiredo da Silva; Anna Luísa de Souza Holanda; Edmundo de Oliveira Gaudêncio. Final approval of the version for publication: Edmundo de Oliveira Gaudêncio.

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Received: 2024, August 22

Accepted: 2025, August 13