

Sleep Disturbances in Individuals Quarantined Due to SARS-CoV-2 Pandemic in Poland: A Mixed Methods Design Study

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Abstract

Objectives: The study aimed to assess sleep disturbances in patients subjected to home quarantine due to suspected SARS-CoV-2 infection. The study used a mixed methods design study as a research methodology.

Methods: A semi-structured interview and the scale for Insomnia Severity Index (ISI) were used to achieve the aim of the study. The survey was conducted from 16 to 20 April 2020 and 1 to 2 September 2020 in Poland, at the during of SARS-CoV-2 epidemic in this country. The data were coded and cross-processed. The (COREQ) checklist was followed.

Results: Interviews with patients and a thorough analysis of recordings revealed commonly used phrases in the following categories: “anxiety”, “Am I going crazy?”, “Sleep problems”. 10 out of 11 respondents reported sleep disorders of varying severity according to the Insomnia Severity Index scale. Patients presented a fear related to the return to society and normal functioning after quarantine. Additionally, some study participants voiced concerns related to their mental health; some cases of hallucinations were reported.

Conclusions: Further global population studies should be conducted to analyse this phenomenon. Acute Stress Disorder should be understood as a threat to life and health of an isolated society in quarantine. Further research in this area should be promoted and the need for global guidelines for the entire population should be developed.

Keywords

anxiety, COVID-19, coronavirus, insomnia, pandemic, quarantine, stress

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Introduction

Communicable diseases have played an important role in the shaping of human history.¹ Epidemics induce automatic response in our subconsciousness related to the fear of infection. In neuropsychological terms, fear is a normal reaction to threat, preparing a person both physically and mentally to respond acutely to possible harm. In recent years the psychological reaction of individuals and the public to the threat of infection has been investigated in relation to various factors, including gradually emerging epidemics such as AIDS, threats posing marginal risk for people, e.g. bovine spongiform

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encephalopathy (BSE; mad cow disease), and even threats which seemingly are only theoretical e.g. avian influenza.² Such events as outbreak of SARS or the current epidemic of Coronavirus disease 2019 (SARS-CoV-2) adversely affect mental health. Individuals subjected to quarantine may develop symptoms of post-traumatic stress disorder (PTSD), depression, anxiety disorder, insomnia, or present signs of delirium.³ In Europe, Italy was the first country to introduce a nationwide lockdown due to the COVID-19 pandemic. A study by Gualano et al. showed that problems related to mental health were frequently reported by the general population in Italy in the final weeks of the lockdown.⁴ Individuals with mild symptoms of SARS-CoV-2 infection are required to self-isolate at home. Quarantine, on the other hand, involves separation and restriction of movement for individuals who potentially were exposed to the virus inducing COVID-19. Those in quarantine have limited opportunity to transmit the infectious disease. In Poland quarantine is imposed on individuals by a relevant state authority, and is monitored and enforced by official bodies (Police). If a person does not follow the specific recommendations, an official penalty may be imposed on them. Those who believe they may have been infected, or were in contact with an infected or potentially infected person may self-isolate voluntarily. Knowledge and understanding of adversities experienced by individuals subjected to quarantine are of key importance for maximising containment of infectious diseases and for reducing the adverse effects on individuals in quarantine, their families and social networks.⁵

Sleep plays a key role in health of all people and many studies show that this is particularly important in the elderly. In this age group effects of even the smallest sleep distractions have been investigated. The findings also provided answers to questions related to the importance of sleep and its disturbances in other age groups. A complete and comfortable sleep leads to feelings of excitement and joy, boosting one's energy to act, inducing a good mood and increasing the ability to perform everyday tasks. Any sleep disturbance in elderly people contributes to physical and mental problems.⁶ Results of various experiments show that older people as a rule do not present gradual, light sleep shifting towards deep sleep; as a rule they are light sleepers, and are woken by gentle sound stimuli. In reality the phase of REM and stages 3 and 4, recognised as deeper phases of sleep, are decreased in older people, while stage 2 (light sleep) is increased. As a result, older people may at times feel irritable throughout the day. During a 24-hour cycle, older people need 6–9 hours of sleep.⁷ The most common sleep disturbance in the elderly is linked to insomnia, which has three types: sleep disorder, disturbances during sleep (the person wakes up a few times during one night) and disturbances of early phase of sleep (older people first easily

fall asleep and then wake up after 3–4 hours and cannot fall asleep again).⁸ Research shows that each type of stress adversely affects sleep and the other way, sleep deprivation may be reflected in intensity of distress and irritability. Quality of sleep is frequently evaluated subjectively, and because of this it is difficult to assess sleep “from a distance” without access to data related to the specific situation potentially affecting the subject. In addition to the experience of quarantine and the feeling of distress, the subjects may be dealing with other problems which they do not always want to talk about. These elements in combination significantly contribute to insomnia and problems related to sleep.⁹

Social isolation or quarantine has a destructive effect on the functioning of families and the entire society.¹⁰ Due to their long-term isolation, people become ill, change their lifestyle, and even become depressed. Stress and malaise increase during quarantine. Uncertainty, which is an element of quarantine, carries the risk of many family, professional and health complications.¹¹

The study aimed to estimate the frequency of sleep disorders in a Polish population of individuals under officially imposed quarantine.

Methods

Design

The study used a mixed methods design study as research method. Phenomenology aims to gain insight into the meaning of everyday experiences.¹² Phenomenological research enables the description and understanding of human experiences, and allows researchers to gain in-depth knowledge of the subjects' feelings and their meanings. This study aims to assess how people in quarantine experience how they experience sleep disorders.

Settings and Participants

The survey was conducted from 16 to 20 April 2020 and 1 to 2 September 2020 in Poland, at the beginning of SARS-CoV-2 epidemic in this country. Targeted recruitment was applied; all the survey participants were subjected, by administrative decision, to 14-day quarantine due to suspected COVID-19 infection. The patients were informed about the invitation to take part in the survey by the authority imposing the quarantine. Participation in the survey was voluntary, and the individuals who were interested received phone number to the person conducting the survey. The information was passed on in the first stage to 88 people at the beginning of the quarantine. In response, 11 phone calls were received from people in the first round and 12 in the second round, who agreed to participate voluntarily. The researcher (nurse, doctor) informed each of the respondents about the purpose

and nature of the study during a telephone conversation. The researcher was trained to interview the patient. At this point, the patients again consented to attend and agreed to record the conversation. Additionally, e-mail contact was proposed as a way of sending the ISI questionnaire. The determination of the sample size in the qualitative research consisted in the theoretical saturation of the generated categories, which depends on the repeatability of information while working with the empirical material, and these were obtained. In a study based on phenomenological assumptions, the rule of 5–25 interviews was applied. After completing the first two interviews, the researcher transcribed them and the same process followed successively after each subsequent interview. Therefore, after the tenth interview, the theoretical saturation of the generated categories was determined (Figure 1).

The same was the case with repeating the research in the second round of research. The same methodology was used during the second round of the research.

Data Collection

The first author conducted partly structured one-on-one interviews to acquire the participants' opinions regarding sleep disturbances experienced during quarantine. Each interview started with a brief introduction of the subject matter and with a conversation aimed at getting acquainted with the patient to create an atmosphere of trust. During the next part of the conversation the researcher asked questions prepared earlier. After the questions were completed, the interview ended with a recapitulation. On average the conversation took 15 minutes. An interview guide, which consists of

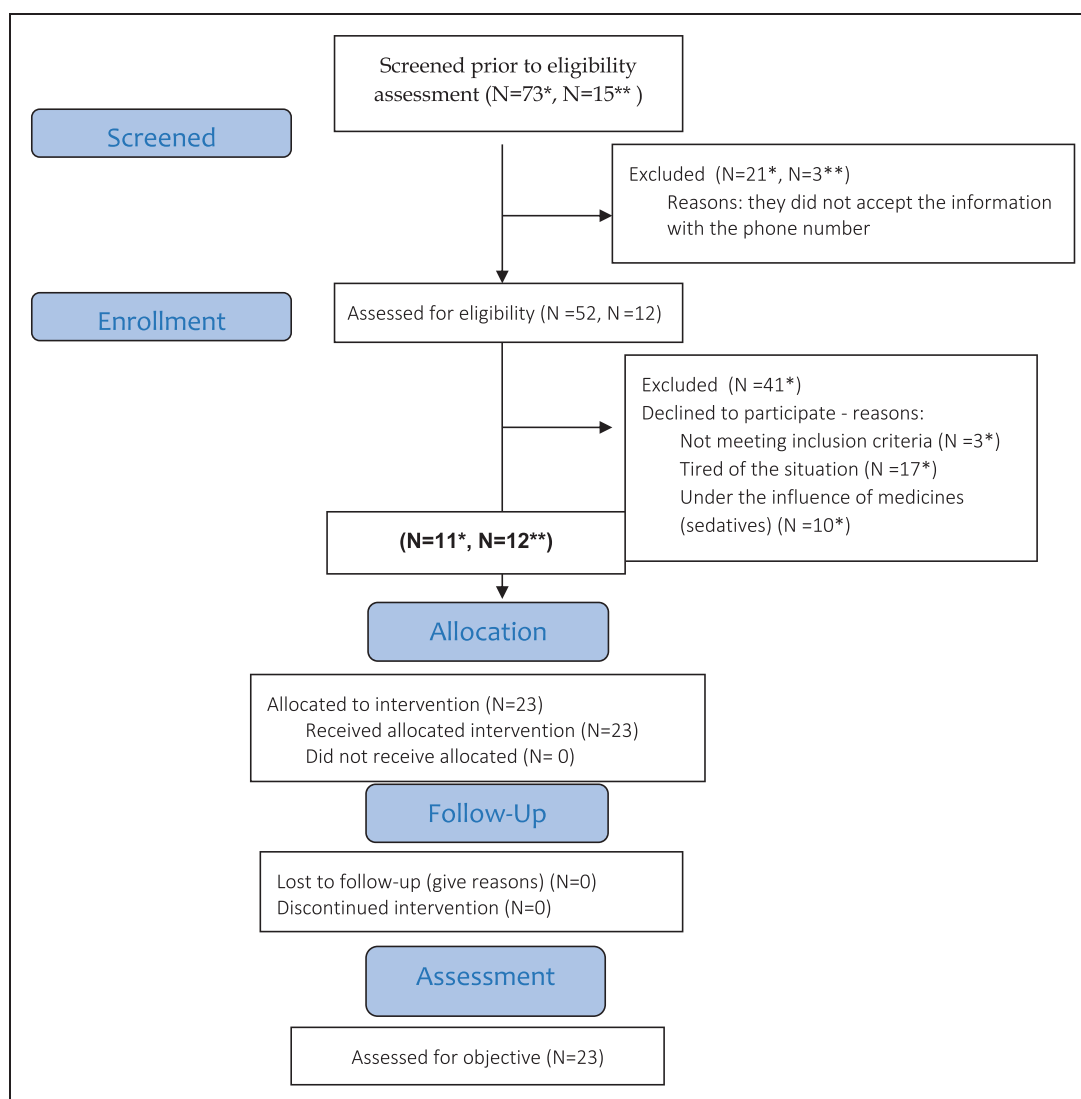


Figure 1. Flow Chart Diagram.

open-ended questions, was used in the interview process (Table 1). As the second stage, e-mail addresses were acquired from the study participants and ISI questionnaires were sent to them, to be completed and returned to the sender within 7 days.

After the interviews were completed, the researcher personally transcribed the conversations. Randomly selected samples of the transcripts were checked by the main researcher for accuracy with respect to the audio recording. The recordings were secured and removed to ensure anonymity of the participants. The material was encoded, and cross-case analysis was applied. In accordance with the concept of qualitative research, the researcher used the entire reflection process. Based on the paradigm of phenomenology, attention was paid to the patients' perceptions of and way of speaking about sleep disturbances and to potential symptoms of delirium; no preconceptions were made. The interviews with the patients and detailed analysis of the recordings produced the following category clues: "anxiety", "am I going crazy?" and "sleep problems". The next stage involved analysis of completed ISI questionnaires, returned by the survey participants. The (COREQ) checklist was followed (Supplementary material 1).

Standardised Questionnaire Development

The respondents' sleep quality was measured using the Insomnia Severity Index (ISI). The ISI is a short instrument assessing sleep disturbances, and proposed by Morin et al. The questionnaire covers problems with falling asleep and staying asleep at night as well as effects of these problems in daily functioning. Comprising seven questions, the survey asks respondents to rate their perceptions related to their sleep in the last 14 days. Each item is assessed using Likert scale (0=no problem; 4=very severe problem). The total score (0-28 points) helps to characterise the intensity of insomnia. The total ISI score was divided into no clinically significant insomnia (0-7), subthreshold insomnia (8-14), moderately severe clinical insomnia (15-21) and severe clinical insomnia (22-28).¹³

Table 1. The Interview Guide.

Researcher (R). Good morning! Thank you very much for your phone and willingness to share your experiences while staying at quarantine. I have some questions for you:
R. Do you have sleep disorders?
R. Do you have an appetite?
R. Do you live alone?
R. Do you have the feeling that you see or hear someone / something "strange"?
R. What are you afraid of?
R. When does fear rise?
R. What feelings accompany quarantine?.

Inclusion and Exclusion Criteria

Those eligible for the study were patients subjected to quarantine due to suspected SARS-CoV-2 infection, who gave their informed consent to participate, and were able to communicate in Polish.

Inclusion criteria.

- Individuals in quarantine in connection to SARSCoV-2 epidemic;
- Individuals aged 18 or more;
- Individuals making a phone call to the researchers (and this way expressing their consent to participate in the study).

Exclusion criteria.

- Individuals not in quarantine (having vacation);
- Underage individuals;
- Individuals who did not give their consent to participate after they were informed about the study.

Results

The study involved 23 patients. Their mean age was 44.17 years \pm 15.3; min -19, max-71. The study group included 17 women 17 (74%), and 6 men (26%). They differed with regard to the number of days in quarantine, with a mean of 7. The demographic data and scores in ISI scale are shown in Table 2.

The findings show that 22% of the subjects presented subthreshold insomnia, while 39% were found with clinical insomnia (moderate severity), 22% with clinical insomnia (severe), and only one person, accounting for 17% of the study group, did not show any sleep disturbances. Patients in quarantine do not receive specialist medical support. They are required to report daily to enforcement officers checking whether they are staying at home.

Table 2. Characteristics of the Study Group.

Age	34-40 years	18.1%
	41-55 years	45.4%
	56-67 years	36.3%
Sex	Female	63.6%
	Male	36.3%
Day of quarantine	4th day	9%
	5th day	9%
	6th day	18.1%
	7th day	18.1%
	8th day	18.1%
	9th day	18.1%
	10th day	9%

Sleep Problems

Nearly all the patients (19 out of 23) reported sleep disturbances of varied severity. Importantly, nineteen respondents reported sleep disturbances of clinical significance, i.e. moderate or severe (Table 3).

The subjects described their sleep problems in connection to such factors as: uncertainty about what potentially may happen next (e.g. severe case of COVID-19); ineffectiveness of the proposed therapy (sleep-inducing drugs); media reports which largely failed to bring good news; as well as anxiety induced by symptoms which reminded the patient of a hospitalisation when they experienced a delirium. Each of the above factors contributed to a significantly increased sense of threat experienced by the patients.

P.5, P.16.1, P.21.1 “I have sleeping pills, but they don’t help at all. Can you imagine that sometimes I don’t sleep at all? And if I do sleep, I wake up crying and immediately check the news”

“It’s hard to fall asleep, I’m left alone and this silence does not help to fall asleep”

P.2, P.18.1, P.21.1 “We don’t sleep at night; instead we keep talking about what may happen to us in the morning” “I’m worried, just checking the news, I’m awake at night”

P.3 “I hardly ever sleep. I’m a bit worried because once, at hospital, I experienced a delirium, and on that occasion, I felt anxiety just like now” .

Anxiety

Sleep disturbances reported by the study participants during the interview may to a great extent be associated directly with a feeling of anxiety described by them.

Anxiety described by the study participants seems to be associated with three areas. Firstly, some of the relevant statements reflect the individuals’ fear of their own risks related to COVID-19; for instance they report taking the temperature each time they wake up at night, and they worry whether they will get any help if they get sick. Secondly, they are concerned about their loved ones: they are afraid they might infect other people at home, or they might never see their family again. Thirdly, they worry about their future and their situation in the society after the quarantine, which may suggest a fear of stigmatisation.

The anxiety associated with their concern about their health status was conveyed by the participants in the following statements:

P2. P.13.1 P.14.1 “I’m afraid that when I have first symptoms nobody will help me, because everyone knows I may have that virus”

P10. “I check my temperature with tears in my eyes. You know, I wake up at night and I take the temperature a few times”

The patients’ anxiety related to the threat of the disease faced by their loved ones and the fear of the possible abandonment was expressed in the following statements:

P1. P.17.1 “Yesterday I started panicking while I was watching TV. I don’t think about myself but about my family”

P.3: “I’m most frightened when my wife and my children call me. I’m afraid I can see them for the last time.”

P.11: P.22.1, P.12.1 “I only worry that if I get sick, I will infect my family because they are also at home, although separately”. “Loneliness is terrible, I do not like to be alone ... do not ask about it because it is even worse”

Table 3. Types of Insomnia in the Study Group.

Respondent	Sex	Age (Year)	Day of Quarantine	ISI Scores	ISI Characteristics
P 1.	Female	67	8	13	Subthreshold insomnia
P 2.	Male	62	10	9	Subthreshold insomnia
P 3.	Male	34	5	16	Clinical insomnia (moderate severity)
P 4.	Female	42	6	20	Clinical insomnia (moderate severity)
P 5.	Female	53	9	22	Clinical insomnia (severe)
P 6.	Female	36	7	9	Subthreshold insomnia
P 7.	Female	59	8	23	Clinical insomnia (severe)
P 8.	Male	61	4	9	Subthreshold insomnia
P 9.	Male	41	9	10	Subthreshold insomnia
P 10.	Female	53	6	20	Clinical insomnia (moderate severity)
P 11.	Female	54	7	6	No clinically significant insomnia

On the other hand, the fears related to the return to the society and to normal functioning as it was before the quarantine, and the perceived lack of acceptance from others intensifying the anxiety components were presented in such statements as:

P.9, P.19.1, P.20.1 “I fear how we can ever return to the society”.

P.5 “I must say that I can’t imagine life after this epidemic. I’m afraid to go out even after this has passed”.

“Am I going crazy?”

The third category identified in the interviews includes the patients’ fears related to their mental health as well as hallucinations (visual and/or auditory) reported by them, which significantly exacerbates the sense of anxiety.

Isolation and feeling of loneliness results in a lack of objectivity in the patients’ assessment of their own condition; their anxiety related to their mental health is expressed in the following way:

P.1 “This is overpowering for me. I don’t know how I can cope, because I feel I will need specialist advice soon”.

P.5, P.15.1, P.22.1 “I won’t get on a bus and it’s possible I will end up at a psychiatrist’s office”.

P.8 “The worst thing is that it is only the beginning and I feel I’m losing it mentally”.

The patients claim that their perception of reality changes because of loneliness. For example, they sense a presence of people who are not there.

P.5, P.15.1, P.22.1, P.15.1, P.14.1 “I have lived by myself for two years. My husband died and last night, for the first time, I had an impression I could hear his voice”. Even though I live alone, I have the impression that someone is walking” I wonder I have a lot of time but I’m tired anyway”

P.10, P.14.1, P.21.1, P.22.1, P.23.1 “Sometimes I feel as if someone else was in the apartment, but then I remember that the quarantine continues and I’m all alone here”.

One patient in a peculiar way connected anxiety with a sense of abnormal perception of reality.

P.2 “*Recently at night I thought I saw a mouse. I didn’t tell my daughter because she would think I’ve gone crazy and would put me in hospital*”. Sleep disturbances are particularly common in patients with disorders associated with anxiety or past trauma.¹² The nature of the

patients’ statements is clearly linked with the isolation related to the quarantine due to SARS-CoV-2 pandemic, which leads to a specific psychological situation faced by those in isolation. On the one hand quarantine is an indispensable measure against the spreading of the virus, on the other hand the experiences of other countries gained earlier during SARS and MERS epidemics allow us to anticipate adverse (sometimes long-term) psychological consequences of quarantine. Sleep disturbances reported by the subjects, constant anxiety, a state described by one patient, reminding him of an earlier experience connected with delirium, as well as tearfulness, compulsive tendency to check the news contributing to the sense of panic, and a tendency to talk all the time (all night) in an atmosphere of anxiety about what may happen are suggestive of distress and, more importantly, immense suffering. Anxiety related to one’s own and one’s family health, a fear that one may never see their family again, and a compulsive need to check the temperature, these all make up the complete picture of the pain and suffering experienced by the patients. The reported psychotic symptoms, such as visual and auditory hallucinations, add to the picture. The three areas identified in the patients’ statements may be suggestive of emerging clinical symptoms of Acute Stress Disorder (ASD).¹⁴ This assumption is justified by reports related to earlier epidemics, such as SARS and MERS.^{15,16} Like PTSD, clinically diagnosed ASD is associated with exposition to a horrifying or catastrophic event, referred to as traumatic stressor. In the case discussed here we can assume that the current SARS-CoV-2 epidemic, similarly to the previous ones, meets the criteria of stressful life event [ICD-10] and severe trauma [DSM V].

Quarantine involves separation and restriction of movement of individuals who potentially were exposed to a contagious disease in order to find out whether they fall ill; this way a risk of other people’s exposure is decreased.^{17,18} This strict regime may be imposed on entire cities, villages or individuals.¹⁷ Quarantine frequently is an unpleasant experience for those affected. Loss of freedoms, no company of the loved ones, and uncertainty about one’s future may lead to highly adverse consequences. The related research has shown a variety of negative or even tragic effects, e.g. suicide^{19,20} anger, or legal encumbrances.²¹ Therefore, it is necessary to effectively look for the causes and to develop mechanisms mitigating the negative psychological consequences of quarantine. In view of the currently evolving situation connected with the coronavirus, decision-makers urgently need a synthesis of evidence in order to develop guidelines for the public. The authors have followed WHO recommendations on performing rapid reviews to acquire relevant, cost-effective evidence in order to strengthen health policies and systems.^{22,23}

Discussion

Own research shows that people do not tolerate quarantine very well. There is a risk of sleep disorders, regardless of age or gender. In addition, public health actions should be taken to develop actions to, perhaps create social resilience, as South et al.²³ the findings reported in a review by Brooks et al.¹⁹ and identified in the literature by these authors, show that the numerous related studies did not extensively investigate sleep disturbances during quarantine in non-medical adults participating in surveys. The latest quantitative study published by Tan et al.²⁴ shows that 12.2% of the subjects presented sub-threshold insomnia, 1.9% moderately severe clinical insomnia and 0.4% severe clinical insomnia. Gualano et al., in their study clearly point out that a general population in Italy reported high prevalence of problems related to mental health. Most importantly, the researchers emphasise it is necessary to look for the most effective interventions to make it possible to decrease psychological and social consequences of a global health crisis of this magnitude. Another highly relevant conclusion formulated by those authors points to the need to develop adequate strategies intended for the most vulnerable groups, e.g. young people, and to investigate the role of the Internet in communication and stigmatisation.⁴

In the current qualitative study nearly half of the survey participants reported subthreshold insomnia. However, the authors aimed to identify categories of phenomena which may occur in the specific situation of quarantine due to epidemic. Insomnia Severity Index appears to be a valuable clinical instrument for use as a screening tool with patients complaining of insomnia.²⁵ It is necessary to conduct further research focusing on populations worldwide in order to investigate this phenomenon. All other quantitative studies focused only on quarantined individuals and identified high incidence of symptoms of mental distress. The most common were symptoms of mental disorders²² anxiety-related insomnia,^{26–28} as well as emotional disturbances,²⁹ depression, emotional exhaustion, irritability, symptoms of post-traumatic stress disorder, anger, and sadness.¹⁹ Sleep disruptions are frequently associated with a fear of daily living, or with accompanying nightmares and the resulting sleep disturbances, which negatively affects the entire nervous and immunologic systems.^{28,30}

A study by Jeong H et al. compared mental assessment of subjects during quarantine and at a later time, and showed that during the quarantine 7% of the subjects (126 out of 1656) presented symptoms of anxiety, and after 4-6 months the related rate decreased to 3% (anxiety); the feeling of anger was identified in 17% (275), to decrease after the quarantine to 6% (anger).³¹

The problem of anxiety was effectively described in the review by Brooks et al., who listed a wide range of predictors of anxiety, i.e. concern about one's own health, fear of infecting others, including family members, children and elderly people who are especially at risk.¹⁹ Notably, sleep disturbances, loneliness and anxiety may even predict onset of hypoactive delirium.³¹ According to Fong et al., delirium is more likely as a response to a stressful situation, such as the one experienced by our respondents.³³ In this case distress was induced by the fear of the infection, concern about one's family and uncertainty about one's health status. Meagher DE and other authors that the group of those at risk of delirium includes individuals who experienced an episode of delirium in the past.^{32–34}

In the current study one person reported a hospital stay and experience of diagnosed delirium. The man admitted that during the delirium he felt a similar state of confusion to the sensations experienced now during the quarantine. Lewandowska et al. explain that development of delirium and sleep disturbances are closely linked with each other. Both sleep deprivation and frequently interrupted sleep increase a risk of delirium. It is only possible to mitigate the risk of delirium by eliminating such risk factors as e.g. sleeplessness.³⁵ Analysis of the current findings shows that the survey participants subjected to quarantine could not talk with a psychologist; this contributed to their feeling of loneliness and confusion. The findings suggest that the most difficult experiences during quarantine included the feeling of longing and loneliness. The proverbial "imprisonment", loss of the regular routine and lack of social and physical contacts frequently led to boredom, frustration and feeling of isolation from the rest of the world, which was also upsetting for participants of numerous studies who additionally reported such issues as contacts only by remote means of communication, lack of or insufficient food provisions, insufficient contact with healthcare or sanitary supervision personnel.¹⁹ Individuals who are lonely or have limited physical contact with their family may worry about what may happen after the leave the quarantine. Notably, those in quarantine, in addition to individuals who have complete families, include single parents, or people in the process of getting divorced or establishing custody over their children. Other individuals may be afraid that after the quarantine they may be alone because their family rejects them. Bylund et al. in their study argue that certain situations linked with a separation may destabilise family life. Successful family life aims at reducing the state of confusion and at stabilising the family's well-being.³⁶ It is necessary to emphasise another significant aspect affecting part of the society, i.e. incidence of mental disorder in the past, which according to Jeong et al. was associated with a sense of anxiety and anger after being

released from quarantine.³⁰ The related literature also suggests that duration of quarantine exceeding 10 days may result in poorer mental condition, feeling of anger or symptoms of post-traumatic stress.²¹ The interviews conducted with the participants in the present study show that some of them experienced auditory and visual hallucinations, i.e. hearing/seeing persons or objects which were not there (as it later became clear to them). Some survey participants said they saw a mouse, or their deceased husband, or they sensed or heard a presence of another person in an apartment in which they were alone. Similarly, Tan et al.²⁴ in their study reported mild and severe auditory hallucinations experienced by the subjects at a rate of 2.1% and 0.3%, respectively. People who were quarantined due to COVID-19 epidemic are in a similar situation. This epidemic may clearly be defined as a highly stressful life event meeting the criteria of severe trauma, if we consider such factors as the rapid spread of the epidemic worldwide, also in Poland, the growing number of people requiring hospitalization, overwhelmed health-care systems, uncertainty regarding all the routes of transmission, possibility to get infected in contact with asymptomatic carriers, dramatic reports of the epidemic situation and the death toll in Italy or Spain. For individuals subjected to quarantine, by administrative decision, the situation is associated with direct experience of trauma, amplified by the uncertainty whether or not they will develop COVID-19 symptoms, uncertainty related to the potential course of the disease (severe or mild), lack of evidence related to factors determining the course of the disease if it begins, and uncertainty related to the course of treatment. Hence, the criteria of traumatic event according to DSM-5: actual or threatened death, and personal involvement in the threatening event are in this case met. Criterion B classifies the symptoms in five categories. Intrusion symptoms (the first category) include recurrent, intrusive memories of the traumatic event, which seems to apply in the cases discussed here because the situation of threat continues to exist. The patients also reported a state of intense and prolonged mental suffering, as well as negative mood (tearfulness, anxiety, worry, and fear of the future). The patients did not report signs matching the category of dissociative symptoms. On the other hand, the participants declared they would avoid meetings with people or refrain from using public transport after the epidemic ended, which might meet the avoidance criterion. The final category of ASD symptoms, i.e. arousal symptoms indeed include such problems as sleep disturbances, e.g. difficulties falling or staying asleep or restless sleep. It is expected that drawing conclusions from the research will help governments and institutions to better care for quarantined residents, as described in the study by Chen et al. Strengthening community resilience in the months and

years to come will require a whole system approach working with different sectors.³⁶

Limitations

The scope of the present study was limited in a number of ways. The main limitation of the study lies in the fact that it could not be conducted in the presence of the participants. The research may be expanded to investigate sleep disturbances after the quarantine has ended, and further study may assess the effects of quarantine and factors predisposing for development of Acute Stress Disorder. A series of training courses should be put in place to help survive the quarantine. Psychologists play an important role here, and should be available to anyone in quarantine.

Conclusions

The study aimed to evaluate sleep disorders experienced by people quarantined for SARS-CoV-2. This is the first study to focus on a mixed methods design study analysis of sleep. The findings identified several factors to be taken into account in the process of developing guidelines for providing support for people in quarantine. The findings contain valuable information for better understanding of acute stress disorder as a condition that threatens the well-being of people in isolation and quarantine. Prevalence of more severe sleep disorders in individuals under quarantine should be further investigated in the second round of the study. The subject matter related to quarantine is important because the pandemic continues to be a problem all over the world and greater understanding of the related issues may help prevent other more serious complications. The article discusses an important problem related to emotions and psychological difficulties experienced by people under quarantine. Owing to the analysis of interviews it can be concluded that it is not only people staying in hospitals but also people staying at home during the pandemic that have to struggle with both clinical and psychological problems.

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Ethical Approval

The research was conducted in accordance with Resolution of the University of Rzeszów Bioethics Committee.

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Supplemental Material

Supplemental material for this article is available online.

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