



Research Article

Knowledge, Attitudes, and Practices of Prevention of Covid-19 Among the Staff of the Dalal Xel Mental Health Center in Thies (Senegal)

Connaissances, attitudes et pratiques de prévention de la Covid-19 chez le personnel du centre de santé mentale Dalal Xel de Thiès (Sénégal)

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ABSTRACT

Introduction. The objective of this study was to assess the knowledge, attitudes and practices of Covid-19 prevention among healthcare staff at the Dalal Xel mental health centre in Thiès, Senegal. **Patients and Methods.** A cross-sectional descriptive study was conducted from March to April 2021. It aimed to assess knowledge, attitudes and practices about Covid-19 among staff at the Dalal Xel mental health centre in Thiès using a self-administered questionnaire. **Results.** A total of 32 persons of the centre (out of a total of 40 staff) participated in the study. The average age of the participants was 35, ranging from 25 to 62. Men accounted for 68.75% of the sample. Nurses' aides were most represented (34.37%). The study staff had a good knowledge of the signs, modes of transmission, preventive measures and the existence of a vaccine. However, 37.5% of participants thought there was a specific treatment for Covid-19. Wearing a mask and hand hygiene were reported by 96.88% and 90.63% of participating staff respectively as means of prevention. 59.37% of participants stated that they had not received any training on prevention. **Conclusion.** In order to limit the spread of Covid-19 in healthcare establishments, it is important to strengthen the capacities of healthcare professionals with the full participation of the healthcare professionals.

RÉSUMÉ

Introduction. L'objectif de cette étude était d'évaluer les connaissances, les attitudes et les pratiques de prévention du Covid-19 chez le personnel de santé du centre de santé mentale Dalal Xel de Thiès, au Sénégal. **Patients et Méthodes.** Une étude descriptive transversale a été réalisée de mars à avril 2021. Elle visait à évaluer les connaissances, attitudes et pratiques sur la covid-19 chez le personnel du centre de santé mentale Dalal Xel de Thiès à l'aide d'un questionnaire auto-administré. **Résultats.** Au total, 32 membres du personnel sur les 40 que compte le centre ont participé à l'étude. L'âge moyen des participants était de 35 ans avec des extrêmes de 25 à 62 ans. Les hommes prédominaient, représentant 68,75 % des cas. Les aides-soignants étaient les plus représentés (34,37%). Le personnel de l'étude avait une bonne connaissance des signes, des modes de transmission, des mesures de prévention et de l'existence d'un vaccin. Cependant, 37,5% des participants pensaient qu'il existait un traitement spécifique pour le Covid-19. Le port du masque et l'hygiène des mains ont été rapportés par 96,88% et 90,63% du personnel participant respectivement comme moyens de prévention contre le Covid-19. 59,37% des participants ont déclaré n'avoir reçu aucune formation sur la prévention. **Conclusion.** Pour limiter la propagation du Covid-19 dans les établissements de santé, il est important de renforcer les capacités des professionnels de santé avec la pleine participation des responsables institutionnels. Cette stratégie doit être associée à des actions visant à renforcer la disponibilité des moyens de prévention au profit de l'ensemble du personnel.

HIGHLIGHTS**What is already known on this topic?**

To date, published scientific data on the knowledge, attitudes, and practices of psychiatric health professionals regarding COVID-19 are not yet available in Senegal.

What question this study addressed

The knowledge, attitudes, and practices of Covid-19 prevention among a population of psychiatric health workers in Senegal.

What this study adds to our knowledge

The level of knowledge of the signs and risks of Covid-19 transmission is good among psychiatric staff.

How this is relevant to practice, policy or further research.

This study shows the importance of involving psychiatric healthcare staff in capacity-building sessions with the participation of institutional leaders.

INTRODUCTION

The current Covid-19 outbreak had a devastating effect on affected countries, exposing the fragility of their services and systems. Its impact is no longer just on health. It is felt in all spheres of social life, preventing the provision of essential services such as education, affecting the economic sustainability of individuals and countries, and jeopardizing social cohesion ^[1]. In Senegal, as soon as the first case occurred on 2 March 2020, the political and health authorities put in place several measures to limit the spread of the virus within the community ^[2]. But from the beginning, with the emergence of this new, unknown, potentially fatal disease surrounded by uncertainty, a lot of information has been circulated, sometimes contradictory. This situation has generated denials and fake news about the disease ^[3]. Thus, the major issues contributing to limiting the spread of the epidemic include the management of rumors, which requires truthful and accurate communication to ensure that communities know and understand the disease. It is in this sense that WHO, in one of its strategies for responding to the epidemic, invites member countries to review and update public health information packages based on an accurate assessment of community knowledge, attitudes, practices, and behaviors ^[4]. The other notable social aspect is the stigmatization of some people towards others who are confronted with covid-19. In Senegal, some people flee the vicinity of the homes of case contacts, while some of the friends have limited their social relations with them or have cut off all friendships altogether ^[5]. All these aspects reinforce denial and people tend not to respect the measures taken by the health authorities, thus favoring the spread of the disease. It is, therefore, necessary for the community in general and healthcare workers to be aware of adequate protection and prevention measures to limit the spread of the disease and to carry out their work properly. Health facilities are places with a high risk of

contamination because of the large number of people they receive. Therefore, it is crucial that health professionals improve their knowledge and continuously apply best practices in prevention for a better response. The objective of this study is to assess the knowledge, attitudes, and practices of health personnel at the Dalal Xel mental health center in Thies to make recommendations for adequate prevention for staff and users.

PATIENTS AND METHODS**Study setting**

This study took place in the Dalal Xel mental health center in Thies, located 70 km from the Senegalese capital. It is a private health establishment specializing in the treatment of psychological disorders. It occupies a special position in the organization of psychiatry in Senegal because of its history ^[6], but also because of its active file of patients (on average 20,000 patient visits per year). Since 2002, it has been approved by the Ministry of Health, and psychiatrists and interns in training are assigned to it. The center is a not-for-profit establishment and is open 24 hours a day to all persons requiring medical and psychosocial assistance, regardless of their religious, social, political, or economic status. The center's staff is made up of about 40 people, including a permanent psychiatrist, supported by interns and nurses in training. The main activities are hospitalization with four 48-bed units, one of which is reserved for women, outpatient consultations, electroencephalography examinations, and occupational therapies (occupational therapy, music therapy, ...). In addition, the Dalal Xel mental health center in Thies is implementing a care policy aimed at getting closer to the communities through various actions, for example, periodic primary health consultations carried out in several localities in the country, strengthening the follow-up of sick people thanks to telephone links, home visits with aware-ness-raising sessions and family mediation, and guaranteeing access to care for the destitute people.

Type and period of study

This was a cross-sectional and descriptive study. The study was an evaluative study of the knowledge, attitudes, and practices on covid-19 among the staff of the Dalal Xel mental health center in Thies. The survey was carried out over a period of two months from 2 March 2021 to 4 April 2021.

Study population and eligibility criteria

The study concerned all the staff of the Dalal Xel Thies Mental Health Centre. This included psychiatrists, state-qualified nurses, nursing assistants, surface technicians, administrators, cooks, and gardeners. We included in the study all staff of both sexes and all ages, permanent and temporary, who agreed to participate in the study. Staff who refused to participate in the study and staff who were absent during the data collection period were not included. A total of 32 staff members were surveyed about knowledge and attitudes and prevention practices toward Covid-19 disease through exhaustive recruitment for the study.

Variables

The study was carried out on the basis of a self-administered questionnaire that included socio-demographic and professional variables (age, sex, marital status, qualification, and the number of years of service in the center); variables on the perception and knowledge of the covid-19 disease (the source of knowledge of the disease, the modalities of transmission, the symptoms and the time of onset of the disease, the duration of isolation of a suspected case, the objects at risk of contamination, the means of confirming the disease, the existence of a specific treatment, the existence of a vaccine, the possibility of recovery from the disease) variables related to attitudes towards Covid-19 (attitudes towards a suspected case, attitudes towards accidental exposure to the Covid-19 virus), variables on prevention practices and data related to training on the management of a Covid-19 case. We accounted for potential confounders in the data analysis.

Data collection

Data were collected and collated through a self-administered questionnaire that was submitted, in paper form, to all staff according to our inclusion criteria. A pre-test identified 10 staff members at the center for whom questionnaires were completed. This allowed us to make corrections to the questionnaires according to the objectives of our study. The questionnaire consisted of several items with closed and semi-open questions exploring areas related to Covid-19 knowledge, Covid-19 attitudes, and Covid-19 prevention behavioral practices.

Data capture and analysis

The data collected were manually checked for quality, consistency, and completeness. The data was then inserted into a data entry mask created in Epi data, version 3.1. The data were then cleaned and analyzed with EPI Info 7.2.0.1. Quantitative variables were presented as mean with standard deviation or median with the interquartile range depending on whether the distribution was symmetrical or asymmetrical respectively. Qualitative variables were expressed as a percentage. Word processing and tables were done in Microsoft Word 2013 and graphics in Microsoft Excel 2013.

Ethical aspects

The participation of the respondents was based on free and informed consent. Before the questions were administered, they were informed of the objectives of the study, their participation, and the respect for anonymity and confidentiality of the information that would be collected. For our study, an authorization request was sent to the authorities of the Dalal Xel Thies mental health center, who gave their agreement with the opinion of the bioethics committee.

RESULTS

Demographic and professional characteristics of participants

Of the 40 staff members at the Dalal Xel Thies mental health center, 32 participated in the study, giving a

completeness rate of 80% (Table I) gives an overview of the participants' socio-demographic and professional data.

Table I. Sociodemographic and professional breakdown of participants.

Variables	Workforce (n)	Percentage
Gender		
Male	22	68.8
Female	10	31.2
Age groups		
[25 - 35 years [	5	15.6
[35 - 45 years [	20	62.5
[45 - 50 years [	6	18.7
[50 years and over	1	3.2
Marital status		
Married	28	87.5
Singles	2	6.3
Divorced	1	3.1
Widowers	1	3.1
Professional qualification		
State nurse	5	15.6
Caregivers	11	34.3
Surface technicians	5	15.6
Cooks	5	15.6
Administrators	2	6.2
Gardeners	2	6.2
Archivists	2	6.2
Number of years of professional practice by segment		
0 - 5 years [	4	12.5
[5 - 11 years [	2	6.2
[11 - 17 years [	17	53.1
[17 - 23 years [	6	18.8
[23 years and over]	3	9.4

Perception and knowledge of the disease

Channels (sources) of information

The 32 respondents, i.e., 100 % of the sample, believed in the existence of the dis-ease. 93.8 % of them had heard about Covid-19 through television, 52.1 % through the radio, and 45.5 % through social networks. Only 10 % had heard about Covid-19 by word of mouth (Figure 1). These results are equally distributed between men and women and across different age groups.

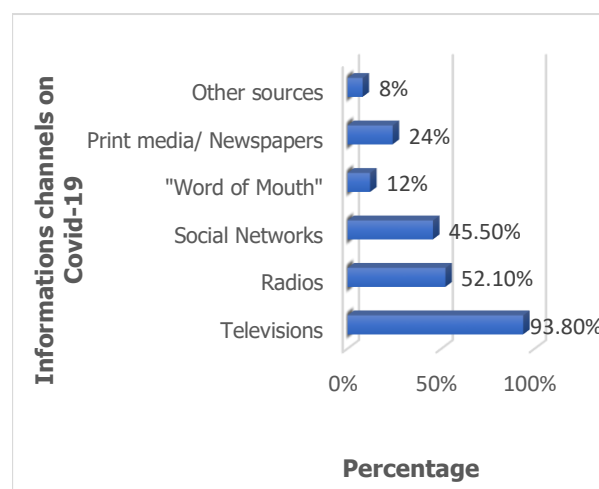


Figure 1. Distribution of respondents according to the information channels on Covid-19.

Among the 32 people who answered the questionnaires, we counted 22 men (68.8%) and 10 women (31.2%). The male/female ratio was 2.4. The most representative age group of respondents was 35-45, with 20 participants or 62.5%. Age ranged from 25 to 62, with an average age of 35. Married people were the most represented marital status with 28 (87.5%) participants. Nursing assistants accounted for 11 out of 32 (34.37%), followed by state-registered nurses, surface technicians, and cooks, each accounting for 15.62%. The median professional seniority of participating staff was 6 years, with extreme values of 1 year and 26 years, and a predominance of 11 - 17 years, i.e., 53.12%.

Mode of transmission and incubation period

Several modes of transmission were mentioned, with the participants emphasizing among others: dead bodies (93.75%), contact with an infected person (96.87%), and contaminated objects (78.12%) (Table II).

Table II. Distribution of participants by mode of transmission covid-19.

Transmission mode	Workforce (n)	(%)
Contact with infected people	31	96.9
Contaminated objects	25	78.1
Corpses	30	93.8
Biological liquids	19	59.4
Sexual	16	50.0

The participants indicated 14 to 15 days as the time of onset of signs after exposure to the virus with a rate of 46.9% and the time of contagiousness was at any time for 43.7% of respondents.

Knowledge of symptoms

Figure 2 shows the distribution of respondents according to their knowledge of the symptoms of Covid-19. Thus, 100% of the respondents had declared to know the symptoms of the Coronavirus. 96.8% of the respondents indicated cough as the main symptom, 93.8% for fever, and 50% for sore throat.

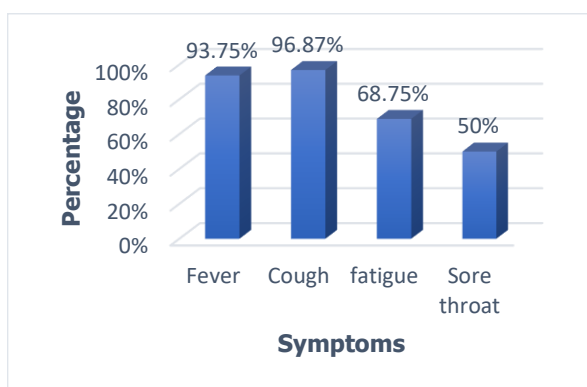


Figure 2. Distribution of respondents according to their knowledge of the Covid-19 symptoms.

Means of diagnosis of the Covid-19

Table III gives the information given by the participants on the question of how to confirm a case of Covid-19 disease. Virological tests were considered by 62.5% of

the participants as the most used means of diagnosing the disease.

Table III. Distribution of respondents using a positive diagnosis of Covid-19

Means of diagnosis	Workforce (n)	Percentage (%)
Virological tests	20	62,5
Serological tests	8	25,0
Antigenic tests	3	09,4
CT scan	0	00,0
Thick film	0	00,0
Don't know	1	03,1

Knowledge about the existence of a vaccine against Covid-19 and the possibility of a cure

All participants (100%) mentioned that there was a vaccine against Covid-19 disease. 93.8% of them stated that there is no specific treatment for Covid-19 disease and 6.2% of the participants felt that a cure was not possible.

Attitude towards Covid-19

When faced with a suspected or confirmed case, the attitudes mentioned were diverse and varied but independent of gender and professional qualification. Thus, 96.9% of the respondents would call the Ministry's toll-free number (800 00 50 50); 87.5% opted to isolate the patient, but 56.25% declared that they had an attitude of flight. In case of exposure to the virus, 93.7% said they would report it, 90.6% opted for washing and asepsis, and 81.1% for isolation. Figure 3 provides a general overview of healthcare professionals' attitudes toward Covid-19.



Figure 3. Distribution of participants according to the behavior to be taken if a person presents symptoms of Covid-19.

Preventive Practices in the Face of Covid-19

Preventive measures against Covid-19

31 participants (96.9 %) reported wearing a mask as the main preventive measure against Covid-19, followed by hand hygiene (90.6 %) and physical distancing (78.1 %). However, it is important to note the means of containment which was started by 14 participants (43.7 %). Regarding hand washing, 93.7 % of the participants said that they washed their hands with soap and 81.2% with chlorinated water.

Participation in Covid-19 case management and training on the prevention of Covid-19

93.75% of the study participants reported that they had never been involved in the management of a suspected or confirmed case of covid-19. In addition, 59.37% of the participants reported that they had not received training on Covid-19 prevention (Table IV).

Table IV. Distribution of respondents according to participation in the PEC of a suspected or confirmed case of Covid-19 and according to participation in prevention training.

Items	Workforce (n)	Percentage (%)
Participation in the PEC of a suspected or confirmed case?		
Yes	02	6.2
No	30	93.8
Participation in prevention training?		
Yes	13	40.6
No	19	59.4

DISCUSSION

The study showed that there are good knowledge, attitudes, and prevention practices regarding Covid-19 disease among the staff surveyed at the Dalal Xel mental health center in Thies. 31 participants (96.87%) were aware that contact with an infected person can transmit Covid-19 disease. In addition, the preferred response to a suspected case was to call the toll-free number 96.87%. The study also revealed that 96.88% of the participants practiced wearing a mask and 90.63% practiced hand hygiene as a barrier measure. 100% of the participants in our study believed in the existence of the disease. In addition, in 73.75% of cases, television was the most cited source of information. In addition, 68.75% of the participants stated that they had not been involved in the management of a suspected or confirmed case of Covid-19 disease and 59.37% of them had not received training on the prevention of Covid-19.

Profile of respondent's staff

Of the 40 staff members at Dalal Xel, 32 participated in the study, giving a completeness rate of 80%. This rate is representative of the staff at the center. The average age of the participating staff was 35 years with a representative range of 35-45 years. This is a mature population comparable to the average age of health personnel in Senegal, which is between 34-40 years [7]. Our results are comparable to the data in the literature. A study carried out in Mali on the knowledge, attitudes, and practices of health care personnel at the University Hospital of Kati in the face of the EBOLA epidemic [8] found an average age of 34.43 ± 9.38 years. Age is a factor

in the maturity of any person. However, our results differ from the study by Leye et al. [9] which found an average age of 41 years. The variation in our results is explained by our two different study settings. In any case, the mature age of the participants in our study represents a wealth of age-related life experiences. Even a small amount of life experience is an asset in the ability to acquire good knowledge, attitudes, and practices [10]. Men were the most represented with 68.75 % of respondents. These results are comparable to those found in the study by Almamy [11] and Youssouf [12] at the POINT-G University Hospital. However, our results differ from those found by Batcho [8] and Thiam [13] in their studies who found a predominance of women with proportions of 54.9 % and 63 % respectively. The predominance of men in our sample can be explained by the participation of orderlies and nurses who are all men at Dalal Xel Mental Health Center. In our study, the caregivers were the most numerous with 34.37 %. These results differ from the literature on the assessment of knowledge, attitudes, and practices (KAP) in the healthcare population where the most dominant professional categories were nurses [8-13]. This confirms that nurses' aides are the dominant population in Dalal Xel. However, all other professional categories participated in our study. This diversity of professional categories is a major asset, as there is a combination of different skills at the service of the beneficiaries. Seniority in the profession favors the acquisition of experience in the care of beneficiaries. According to the data collected in the study, 53.12 % of the respondents had been working in the profession for between 11 and 17 years. Thus, we observed a correlation between knowledge of Covid-19 disease and the number of years of practice.

Knowledge of Covid-19

All participants believed in Covid-19 and had heard of the disease; the main source of information was television 73.75 %. Our results are like those of Leye et al [9] at the national level. However, they differ from other international studies. In a study carried out in the United Kingdom on the perception of health professionals regarding the management of covid-19, professionals relied solely on the information provided by their institution [14]. Another KAP survey, conducted in the departments of Mayo-Sava and Mayo-Tsanaga in the Far North Region of Cameroon, showed that the most used channels of information on Covid-19 were non-governmental organizations (NGOs) or other community organizations, and only 3 % of respondents obtained information from television [15]. The interpretation of these different results needs to be nuanced and with care because data from population surveys cannot be superimposed on data from health facilities. However, the belief in the existence of Covid-19 disease among the participants can be explained by the fact that cases have been confirmed in this center. The predominance of television as a source of information can be explained by the media coverage of the Covid-19 epidemic, which was featured on Senegalese television news with daily press briefings by the Ministry of Health and Social Action (MHSA). Since the beginning of the epidemic in Senegal,

the MHSA has not stopped broadcasting messages about the disease via information channels, notably public and private radio and television stations, and Internet sites. Several modes of transmission were mentioned, with participants emphasizing contact with an infected person (96.87 %). This result is comparable to that found in the literature [9, 14, and 16]. This finding could be explained by the fact that the hospital environment is more familiar with these infection situations. Most human infections are due to direct or indirect contact with the skin, mucous membranes, and body fluids of infected patients [17, 18]. Knowledge about the symptoms of Covid-19 is relatively good among the staff of the Dalal Xel Center. Respondents were aware of at least three symptoms of the disease. The most cited symptoms were fever (93.75%), cough (96.87%), and sore throat (50 %). This could be because these signs are the most suspicious due to their appearance in any patient and the preventive advertisements on TV and radio that indicate these as manifestations of the disease. The most common symptoms reported in this Covid-19 outbreak between the onset of symptoms and case detection were cough (78-88 %), fever (68-75 %), myalgia (60-66 %), headache (42-65 %), dyspnea (31-41 %), but intestinal symptoms were also found in 10 % of patients, such as vomiting, diarrhea or abdominal pain [19]. Despite the good knowledge of the symptoms of Covid-19 by the participants, more than half of them (53 %) had wrong knowledge of the incubation period and the time of contagiousness of the virus. This can be explained by the fact that half of the participants were not caregivers. In our study, it is surprising that 37.5 % of the participants thought that there is a specific treatment for the disease. This could be explained by the treatment protocol established by Senegal for the management of patients [20]. However, to date, no treatment has been approved by the WHO. Regarding the vaccine and the possibility of a cure, all the participants mentioned that there is a vaccine against Covid-19. This can be explained on the one hand by the over-medialization of vaccines with all the controversy surrounding them and on the other hand by the fact that all the staff members of the Dalal Xel center have been vaccinated. 93.75 % of the participants stated that an infected person can be cured. This frequency is noted in most studies [14, 16].

Attitudes and prevention practices toward Covid-19

The preferred attitude, when faced with a suspected case, was to call the toll-free number with 96.87 %. Our results differ from the KAP study conducted in Cameroon [15], which showed that the most frequent attitude (68 %) towards a suspected case was to take the person to the hospital or clinic. This difference lies in the difference between the two research methodologies. In the KAP study in Cameroon [15], the sampling was extended to a popular urban area. However, the reflex to call the free phone number of our participants may be due to the first messages received: "In case of fever, cough or malaise, call the ministry's free phone number". This message remains outdated and needs to be upgraded. Reporting (93.75 %) was the most represented attitude in case of accidental exposure to Covid-19 disease followed by

washing and asepsis with 90.63 %. Only half of the sample had decided to consult a doctor. This situation of not consulting a doctor could be reflected in the fear of stigmatization [21]. 93.75 % of the participants claimed to practice hand washing with soap and 83.8 % of them responded that hand hygiene protects staff and patients. "Hand hygiene should be inculcated in our habits, apart from the Covid-19 disease, it protects staff and patients against many infections". Wearing a mask (96.88 %) and hand hygiene (90.63 %) were the most cited practices. Our results are comparable to the study by Leye et al [9] which showed that wearing masks (93.8 %) and hand washing with soap and water (77.8 %) were the main preventive measures for Covid-19 cited by the respondents. Another study showed that among Chinese hospital practitioners, 9 out of 10 (89.7%) reported applying the various Covid-19 prevention and control measures (wearing protective equipment, hand washing, etc.) [16]. This shows that the participants attached great importance to barrier measures. In terms of protective equipment, the most common were protective masks (100 %), flash thermometers 100, gowns (90.63 %), hand washing kits (93.73%), chlorinated water (93.75 %), and non-sterile gloves (93.75%). Protective equipment is necessary for prevention practice. This proves that the management was very concerned about the protection of staff and patients in the facility. This is not often the case from one facility to another or from one country to another. Of the professionals surveyed in the UK (670 doctors, 204 nurses, and 133 paramedics), two-thirds of the professionals surveyed (66%) said they did not have the necessary protective equipment [14]. Participation in the management (ECP) of a suspected or confirmed case of Covid-19 disease and in prevention training, 68.75 % of participants reported not having participated in the ECP of a suspected or confirmed case of Covid-19 disease and 59.37 % of participants reported not having received prevention training. Our results on training are comparable to those found in the United Kingdom, where 47.9 % of staff reported not having received sufficient training [14].

Limitations

The results we arrived at were not broken down by service and by professional category. As a result, the situation in each department was not highlighted by considering the different categories of staff working there. Similarly, our study only concerned staff, whereas patients, carvers, and administrative staff are also exposed to the disease. One of the limitations of this study also lies in its cross-sectional nature. This does not allow a correlation as would be possible in a longitudinal cohort study. Another important limitation is the relatively small size of the study population. However, this work will nevertheless have the merit of highlighting the state of play about knowledge, attitude, and preventive practices concerning Covid-19 disease in a mental health facility in Senegal.

CONCLUSION

This study revealed that the level of knowledge of the signs and risks of transmission of Covid-19 is good among

the staff surveyed at the Dalal Xel mental health center in Thies. These results are encouraging, but efforts must be made to limit the spread of Covid-19 within health facilities. It is therefore important to strengthen the capacity of health professionals with the full participation of institutional managers. This strategy must be associated with actions to strengthen the availability of preventive means for the benefit of all staff.

Conflicts of interest: The authors declare that they have no conflicts of interest.

Authors contributions: All the authors contributed to the care activity described in the study and to the design. They approved the final document.

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