# Chapter 3

## Adaptation of the Mini-Mental State Examination for Screening Patients from the Cognitive Rehabilitation Service in Telehealth Contexts

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**ABSTRACT**
Introduction: In the covid-19 pandemic, health services began to reorganize and offer telehealth assistance modalities. The Cognitive Rehabilitation Service has been restructured to receive new patients. There was a need to develop an evaluative resource for remote patient screening. Objectives: To adapt the cognitive screening instrument Mini-Mental State Examination (MMSE) to an informal oral interview script useful in call centers. Methods: Adaptation of the 11 domains of the MMSE that were converted into informal questions, eliminating the need to apply it according to routine methodological rigor. We opted for colloquial oral language, necessary for the referred telemarketing, making it easier to screen patients using technological resources incorporated from mobile phones and videoconferences. Results: An interview script was developed with 38 questions equivalent to the MMSE. Conclusion: Facing social isolation, due to the restriction of social participation to the homes of professionals and patients, provided an opportunity to innovate actions and care structures in Cognitive Rehabilitation. An adapted instrument was proposed, capable of allowing the continuity of actions, appropriate to the establishment of Telehealth, during the current pandemic.

**Keywords:** cognitive assessment screening instrument; mental status and dementia tests; Telehealth; Cognitive Rehabilitation; Occupational Therapy.

## 1 INTRODUCTION

The Mini-Mental State Examination (MMSE) (Folstein, Folstein & McHugh, 1975) is an important clinical tool for initial mental status screening by screening changes in cognitive functions (Brucki et al., 2003) and identifying possible cognitive impairments. functional and dementia conditions that will continue to be carefully evaluated (Aprahamian et al., 2017). Its first version was published in 1975, in the United States of America, by Marshal F. Folstein, Susan E. Folstein and Paul R. McHugh, scholars from The New York Hospital-Cornell Medical Center and the University of Oregon Medical School. In Brazil, its initial version was translated and validated in 1994 by Paulo H. F. Bertolucci, Sonia M. D. Brucki, Sandra R. Campacci and Yara Juliano, applied to 530 individuals from Hospital São Paulo screened in the Neurology emergency services and outpatient clinic for diseases degenerative (Bertolucci, et al., 1994).

Cognitive screening by applying the MMSE can be carried out in different environments: hospitals, outpatient clinics, offices and even homes, requiring the presence of a qualified applicator with the interviewee in the same physical environment (Brucki et al., 2003). This MMSE application is usually quick, being carried out in a quiet place, where the applicator and the interviewee interact mainly through simple verbal commands and some writing, reading, drawing activities - already considering the impact of the formal years of schooling of the application itself on the population -target (Bertolucci et al., 1994).

Since the end of 2019, with the outbreak of the covid-19 pandemic, there has been the adoption of social isolation measures and restrictions on the domestic environment, which have challenged us to propose new cognitive screening practices and provide continuity to services referenced in Cognitive Rehabilitation. The World Federation of Occupational Therapists (WFOT), 2020) defined in its Position Statement that Telehealth is the provision of distance services uniting professionals and clients through the use of information and communication technologies (ICT), providing opportunely the entire scope of Occupational Therapy practices that will thus be innovated. According to Hoel et al. (2020), it was indicated that the use of teleassistance in Occupational Therapy offers services with less fear of contracting or spreading covid-19, which favors the continuity of ties remotely. Thus, telecare provides opportunities for occupational therapeutic interventions in the face of imposed restrictions, ensuring virtual personal contact, although offered in reduced capacity and different reality from the contexts of care formerly practiced (Hoel et al., 2020). Challenging to innovate practices that would have an impact on maintaining the quality of care actions, the complex current pandemic moment required the formulation of new models with the use of Telehealth (Silva & Nascimento, 2020), as it is justifiable to propose the present adaptation of an instrument of cognitive tracking for Telehealth contexts in the practice of Occupational Therapy in Cognitive Rehabilitation.

In this present work, it is reported that the cognitive screening of people with possible cognitive-functional decline and/or history of acquired brain injuries is carried out by the Cognitive Rehabilitation Service, which operates at the School-Clinic of the Federal Institute of Education, Science and Technology of Rio de Janeiro (IFRJ) - Campus Realengo. This sector is structured by the operation of the mandatory

curricular internship composed of a team of: professor (preceptor occupational therapist) and undergraduate students in Occupational Therapy. Welcoming, evaluation, individual care, family care, guidance and cognitive-functional training are carried out there, in order to maintain remaining capacities that support involvement in meaningful occupations and prevent the advancement of cognitive disabilities that lead to occupational dysfunctions in the population served. . Due to the accelerated increase in the spread of covid-19, the internship started to be offered remotely, implying the need to prepare new tools, tactics for future interventions and clinical approaches to screen patients in the context of telecare being inaugurated in the pandemic. Institutionally, this service is located in the west zone of the city of Rio de Janeiro, it mainly serves the elderly public, who seek the service spontaneously or, less frequently, when referred by any partner services in the territory, such as a family clinic, basic health unit, philanthropic institutions, local religious community, groups of the elderly and the Clinic-School itself from other sectoral multidisciplinary services. This public served presents impairments of cognitive-functional capacities that, when referenced, will be evaluated to verify that possible cognitive deficiencies, limitations in activities of daily and instrumental life, restriction of social participation in their roles, contexts and means of engagement will deserve to be eligible for the Occupational therapeutic care in Cognitive Rehabilitation. It should be noted that the use of ICT, already widely disseminated as everyday resources such as applications on mobile phones or the incorporation and dissemination of teleconferences to be used in the current domestic reality, is not such a common resource for the population served there, which triggered even greater restrictions on participation of cases in attendance already referenced without being able to include remote access and effective handling of required technologies.

## 2 RATIONALE

Cognitive Rehabilitation is a therapeutic approach that makes use of visual perception to obtain adaptive responses from the patient, through the interaction of individuals in controlled environments (Wolf & Baun, 2014). Its scope is assumed to involve all relevant aspects of everyday life, estimating to enable individuals to engage with their routine environments, favoring functionality through the manifestation of integrative cognitive abilities, in addition to well-being in everyday life and participation in meaningful occupations (Crepeau et al., 2011; Grieve & Gnanasekaran, 2010). Therefore, regarding the screening of possible cognitive alterations, it is required that the environment be controlledly calm, that it does not offer any distractions, since the nature of this evaluative cognitive approach involves complex stimulation in an interaction between the participants, such as verbal commands, use of objects , posture control, dynamic verbal and non-verbal processes between evaluator and interviewee, in addition to qualified direct observation of all responses offered by the patient to the various requests (Aprahamian et al., 2017). Therefore, the traditional performance of this service in times of social isolation is unfeasible, since the contact will only occur through teleconferencing and, therefore, it cannot be guaranteed that the

environment in which the individual (target of cognitive screening) is inserted is ideal, according to could be provided by staff in the Service.

Hoel et al. (2020) confirmed that Telehealth plays a significant role in facilitating the continuity of the Occupational Therapy service during the pandemic, as such professionals recognized benefits such as greater convenience and autonomy in the use of intervention strategies, as well as the long-term integration of strategies remote work. Therefore, they suggest that implementing Telehealth actions is a crucial complement to the face-to-face service in the area, even in a future post-pandemic era that can be witnessed. Faced with this situation, it was identified the need to make a resource available to conduct the screening of users, to be admitted for follow-up. In this context, an adaptation of the MMSE was developed, using all of its standardized functional domains, developing a script for an informal oral interview, which served to adequately carry out the previously customary screening. Another requirement was that such adaptation of the MMSE allowed contemplating the possibility of being applied even with the use of a cell phone or home phone, maintaining the interviewer-interviewee interaction, even without the requirement of eye contact as provided for in teleconferencing tools (when possible ), since the target audience addressed has significant difficulty accessing the internet and does not yet have independent management for the use of virtual tools in their daily occupational contexts.

## 3 MATERIALS AND METHOD

The Cognitive Rehabilitation Service checked all MMSE domains, which are: temporal orientation, spatial orientation, recording, attention and calculation, naming two objects, repeating, stage commands, writing a complete sentence, reading and executing, copying diagram; in order to verify the possibility of adapting them as a tool for screening patients now suitable for the telecare contexts developed from the present pandemic, ensuring continuity in the reception of new cases to be referenced and assisted continuously.

The mentioned MMSE domains are evaluative resources that allow the applicators to identify possible alterations in the cognitive functions, conferring their character of initial screening that will justify a possible indication of posterior detailed cognitive evaluation. In this way, such domains were approached in their evaluative relevance in order to be preserved and adapted for the elaboration of an informal interview script, completely oral, intended with the proposal of initial screening to be used in teleassistance. This development took place between October and December 2020, as practices for conducting the mandatory curricular internship in Cognitive Rehabilitation.

Observing each MMSE domain, it was examined how they could be reformulated into simple oral questions, which could be easily understood and answered in telecalls, respecting as much as possible the colloquial language used by the population already referenced in the service. Such domains involve screening different alterations of cognitive functions that are requested in simple commands, such as temporal and/or topographical orientation questions, requests for repetitions, reading, drawing and writing,

which characterize evaluative tasks that demand a certain controlled level of interaction between interviewer and respondent. Hence, corresponding phrases were elaborated that could guarantee the pertinence of the instrument used and were suitable for the oral communication required in the Service's call center. The entire process of developing the present adaptation of the MMSE was not allowed to use the direct application of its formal commands by the applicators, but that new corresponding questions were only elaborated, always in accordance with the development of the proposed interview script. Therefore, it was necessary to determine the scope of the cognitive functions involved in the original instrument, which in the answers to be checked with the interviewees, could identify which possible cognitive-functional deficits would require a posterior cognitive evaluation in that teleservice and not merely apply the MMSE as if it could be carried out in an informal interview, orally, in approaches with patients who were unprepared to work in Telehealth.

Therefore, formulations of these questions were carried out with emphasis on auditory stimulation, according to colloquial oral language, which were repeatedly tested in the adaptation development process to check whether the interviewee understood the topics addressed, not offering any commands in this interview proposal. neither resolve nor evaluate how the MMSE is commonly performed in practice. Because it is only a question of continuously screening patients who may be admitted for possible follow-up in Cognitive Rehabilitation and who are, for the time being, deprived of being attended to in person at the Service in question.

## 4 RESULTS

The present adaptation of the MMSE was structured for the development of an informal interview script to be conducted in the context of teleassistance carried out in the Cognitive Rehabilitation Sector, ensuring that the 11 domains of the MMSE were preserved one by one, corresponding to a total of 38 questions qualified to allow possible screening of cognitive alterations; thus, 08 questions were developed for the “temporal orientation” domain, 08 for “spatial orientation”, 03 for “registration”, 04 for “attention and calculation”, 01 for “evocation memory”, 04 for “naming two objects”, 02 for “repeat”, 03 for “stage command”, 02 for “write a sentence”, 02 for “read and execute” and 01 for the final domain which is “copy the diagram”.

A table is presented with details of all the questions adapted for the informal interview script according to the original domains of the MMSE.

Table 1 - Adaptation of the MMSE for informal interviews in call centers

| **Temporal Orientation** |
|---|
| Are you in the habit of remembering appointments and schedules? |
| Are you in the habit of knowing today's date? |
| Can you keep your appointments according to the date you have set? Is it easy to remember? |

| |
|---|
| How do you remember your appointments? |
| How do you remember the dates of your appointments? |
| Are you in the habit of checking what time it is? |
| How do you keep track of the time of day? |
| Can you keep appointments by appointment? |
| **Spatial Orientation** |
| Can you give your address? |
| Do you have any difficulty knowing the addresses you go to? |
| What do you do when you need to give your address? |
| Can you recognize all the rooms in your house? |
| Do you frequent places outside your home? |
| How do you go to these places? Do you have any difficulty? |
| Do you often get confused when you go to a place outside your usual one? |
| Do you have any difficulty in recognizing the places you go to? For example, when you get there, is the place familiar to you or not? |
| **Register** |
| Do you have trouble paying attention to everyday things? |
| Can you retain information for short periods of time? |
| Can you repeat something that has just been said to you? |
| **Attention and Calculation** |
| Are you used to doing math on a daily basis? |
| Are you used to doing math on a daily basis? |
| In what ways do you usually do this math? |
| Do you have difficulty starting, maintaining and finishing a task you need to do? |
| **Evocation Memory** |
| Can you quote things that have been mentioned before in a conversation? |
| **Name Two Objects** |
| Can you identify and speak the names of objects that are around you? Do you have any difficulty? |
| Can you identify any object when you are asked to? |
| Do you have any difficulty recognizing and speaking the name of objects that are shown to you? |
| Do you have any difficulty speaking the names of people, places or objects? |
| **Repeat** |
| Can you repeat a complete sentence that you have just been told? |

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|---|
| Do you have any difficulty hearing something you have been told? Does it happen often? |
| **Internship Command** |
| Do you have difficulty starting, maintaining, or finishing an activity? |
| Do you have difficulty performing movements that are requested of you? |
| Do you have difficulty in accomplishing a task when you are asked to? |
| **Write a Complete Sentence** |
| Are you in the habit of writing? |
| Can you write a sentence that makes complete sense, with a beginning, middle, and end? |
| **Read and Run** |
| Can you obey a written instruction? |
| Do you have difficulty understanding a written instruction? |
| **Copy Diagram** |
| Would you have any difficulty copying a drawing? |

**Source** - **A**uthorship, 2021**.**

## 5 DISCUSSION

Strictly, we adopted the character of tracking changes in cognitive functions in oral questions that preserved the evaluative scope of the original domains of the chosen instrument. The final adaptation was the development of a brief script with 38 simple questions, all verified in the most colloquial language possible, facilitating adequate understanding and interaction for the development of Telehealth actions in the Cognitive Rehabilitation Service according to the original MMSE evaluative domains that will be discussed below.

The initial domain of the MMSE is temporal orientation, a function that allows individuals to perceive time and its entire organization, including requesting commands that identify: year, month, date of the month, day of the week, semester or approximate time (request most commonly used in the application of the standardized instrument), such items may also be related to recent episodic memory (Levy, 2014a). Faced with the decision not to formally apply the MMSE assessment in teleservices using its direct verbal commands, which requires a strictly controlled evaluative environment, it was decided to adapt its domains in an informal oral interview suitable for the emerging contexts of Telehealth in the practices of the Rehabilitation Service Cognitive. In addition, considering the usual verbal commands for the application of the MMSE instrument, which would be: “What year are we in? What is the month? What date of the month is it today? What day of the week are we on? What time is it?”, other simple questions were developed that would allow the interviewee to talk about possible difficulties in perceiving time, its use, highlighting possible relationships that time implies in routines and, especially, in the perception of time in terms of carrying out activities or occupation patterns of the interviewee, for example: “Do you

usually know the date of today?" to respond to the command to check the temporal orientation for the date; or "How do you remember the dates of your appointments?" in the sense of talking about possible difficulties that a loss in temporal orientation could be reported in the interview, requiring future evaluation by the Cognitive Rehabilitation team at the service that welcomed that candidate for treatment; or even, the proposal to ask if "Do you have the habit of checking what time it is?" and "Are you able to keep appointments by appointment?" that facilitate the understanding of how much the temporal perception is related to the establishment of routines in the involvement with significant occupations. Thus, these questions make it possible to verify temporal orientation, which is a highly specific domain for screening cognitive problems (Xavier et al., 2010), usually closely related to the ability to remain responsive to stimuli and engage with performance times. of daily activities.

The MMSE's next domain is spatial orientation, also called topographic orientation, which is also a primary perceptual function here responsible for the perception of spaces and places, their organization and understanding of the behavioral relationships conferred on them, which includes in the original instrument simple commands for verify if the interviewee is organized in terms of the defined perception about: state (federal), city (where he/she is located), neighborhood or name of the nearby street; general location - as wide as possible (such as hospital, outpatient clinic, nursing home, own home) and specific location (that office, dorm, room where they are together at the moment); thus using orders and signs about such places when necessary: "What is the Brazilian state we live in? What city are we in? What neighborhood is this? Which place is this here?", in this command perform the gesture pointing around, giving a stimulus to facilitate an expanded perception of the space; "What location are we?" providing the gesture that delimits the specific location, favoring to perceive exactly the room, usually the interviewer points to the ground, since the MMSE instrument requires to be applied in person in the same environment where the applicator and the interviewee are together. However, currently in social isolation, in telecalls, interviewers and interviewees are always in different environments, usually in their own homes, which makes it impossible to ensure control in a standard environment for applying the test regarding spatial perception and identification. However, the proposed adaptation carried out here for the initial screening allowed the development of simple questions that would help in the task of tracking the cognitive capacities related to the recognition of maintained or affected spatial perception, which tried to investigate from the general perception of location to perception of housing itself, as well as the spaces frequented, using these questions for the informal interview: "Can you tell what is your address?", thus inferring a verification of executive capacity that requires topographic perception according to the MMSE, which is very associated to other cognitive functions such as semantic language, working, semantic and procedural memories, logical-abstract reasoning, decision making, among others; "Can you recognize all the rooms in your own house?", this proposal of adaptation to verify if the topographical orientation is preserved regarding the integration of cognitive abilities that will require the primary functions of spatial perception in the domestic environment most frequented by the interviewee; "Do you have any difficulty recognizing the places you

go to?", now seeking to infer whether in the possible patterns of occupation (routines) - which require the effective use of spatial perception, there are already difficulties in articulating with other cognitive and executive functions, guaranteeing the involvement to carry out activities, roles and occupational performances in which they engage. In this way, there is the possibility of signaling a possible impairment of topographic perception that is directly supported by other related functions, such as constructive praxis in two- or three-dimensional representations, long-term memory in route information, sustained attention and recognition of waypoints, judgment capacity (Grieve, 2005) and, especially, semantic memory, which would be evidently compromised in cases of spatial disorientation (Levy & Burns, 2014) to be screened by the Cognitive Rehabilitation Service.

The next MMSE domain was called registration, that is, that perceptual ability to receive afferent stimuli through primary attentional pathways, which will allow integration with other related cognitive abilities, in which the command is given to simply ask the patient to repeat 03 names (nouns) defined by the instrument itself as standard: "ice, lion and plant" or "vase, car and brick". Attending to this command verifies immediate recall and sustained attention (Levy, 2014a), from an auditory stimulus in which the patient sticks to what was requested from the phonological loop (Grivol & Hag, 2011), because according to Grieve and Gnanasekaran (2010a) this is a perceptual function responsible for storing temporary information arising from sound stimuli, most commonly speech, where words are repeated long enough for understanding, until providing a response in that context, without the need to require other capabilities executive skills related to language and semantic memory, but emphasizing the ability to perceive sorted auditory stimulation. In the present adaptation of the MMSE, questions were developed that inform about the ability to maintain focus (related to the preservation of sustained attention) while carrying out daily activities and the possible functioning of the working memory that would be required in the various usual registers of ordinary life. , in which the patient copes. Thus, regarding the MMSE registration domain, it was proposed to verify whether: "Do you have difficulty paying attention to everyday things?" difficulties; "Are you able to keep information for short periods of time?", ensuring that the records, when perceived, can be related to other specific cognitive functions and even executive capacities that support involvement in relevant activities. That is, also checking for changes in the integrative circuit of attention with memories, especially recent memory, in addition to emphasizing the sustained attention that will be required to answer the questions during the proposed informal oral interview.

Continuing, regarding the domain of attention and calculation, the MMSE offers simple commands for solving problems in two activities: the first is the so-called "7 series" and the second, alternative test, is the inverse spelling of the word "world" with the purpose of verifying working memory supported by sustained attention for problem solving, that is: the ability to retain information and process it to obtain meaning (Levy, 2014b) in what you are doing. However, in the adaptation of the MMSE proposed here for teleservice, the interviewee is not asked to perform the subtraction calculation or execute the spelling command backwards, but to check if there are possible difficulties in maintaining the focus of attention in

their activities , or if there is a perception of damage to the use of working memory, which interfere with the executive capacities closely related to the activities and occupations involved. Thus, the informal oral interview proposed asking: “Do you usually do accounts on a daily basis?”, “How do you usually do accounts” and “Do you have difficulty initiating, maintaining and completing a task that you need to do?”, emphasizing common situations of occupations, their routine patterns of performance as well, in which the same integrative circuit of attention, functional memory and problem solving is required and perceived as if altered or not by the interviewee in the screening performed.

The next domain is the evocation memory whose command of the instrument is to ask directly which were those 03 words that the patient repeated, the list of: “ice, lion and plant” or “vase, car and brick”. Evocation memory has the function of remembering dates, appointments, family names, recent events (Machado, 2011) that may contribute as stimuli to associate with other functions of the various cognitive circuits. This memory, when compromised, can hinder learning ability (Tamai & Abreu, 2013) since it depends directly on the reception of afferent stimuli, as well as the consequent retention of that information, usually associated with executive functions, to organize behavior in problem solving. In this present adaptation of the MMSE, it was necessary to elaborate a question to verify if the patient recognizes as preserved or altered his own ability to evoke useful information, as this is commonly requested in a conversation, when there is prioritization of auditory stimulation from the phonological loop to retention in the recent memory, hence recognizing whether it is possible to evoke according to the question: “Can you mention things that have already been mentioned previously in a conversation?”.

In the field of naming two objects, the MMSE asks the patient to name the objects shown to him, which in this case would be, for example, a watch and a pen (Brucki et al., 2003). This command is capable of tracking the functioning of semantic language (Levy, 2014a) as the function that attributes meaning to words and gives understanding to things in the world, as well as being responsible for the very variable expansion of current language through the resource of polysemy ( Silva & Britto, 2013). For the adaptation proposed here, questions were developed to identify the interviewee's perceptions about possible alterations in the semantic language: "Can you identify and say the name of objects that are around you?" or “Do you have any difficulty saying the names of people, places or objects?”, responding in accordance with what is screened in the MMSE and is in linguistic use in the repertoire or in the most usual perception of that individual.

Regarding the mastery of repeating the MMSE, the patient is asked to repeat the following phrase “neither here, nor there, nor there” which is also accepted “neither here, nor there, nor there” (Brucki et al., 2003) , respecting generally regional semantic exchanges. This command lends itself to tracking the functioning of semantic language (Levy, 2014a) which is associated with perceptions of attention, mainly register and phonological loop, but which are already articulated with specific processing of linguistic capacities requiring an efficient recognition of the meaning of those words ( Salles & Rodrigues, 2014). Thus, for the adaptation of this domain, questions such as: “Do you have any difficulty hearing something

that was said to you? Does it happen often?", allowing the identification of possible alterations in the cognitive-executive procedural circuit that depends closely on the semantic linguistic functioning.

In the stage command domain, the MMSE requires the patient to take the paper with his right hand, fold it in half and place it on the floor (Brucki et al., 2003). In this evaluative stage, there is the verification of the praxis functions, which allow the execution of behaviors organized at the motor level, in this command they are divided into 03 stages - which already requires minimally praxis of the ideational type, which is the ability to plan and execute actions of movement for the sequencing of specific motor steps (Grieve & Gnanasekaran, 2010b) in a way that makes it possible to start, maintain and finish that requested activity. It is observed that in this item it is already possible to evaluate a more complex integrative circuit, which involves from the perception of the auditory stimulus of the simple command to do, as well as other functions such as sustained attention to remain corresponding to the purpose of that activity, to retention of information required that coincide with the 03 steps of picking up the paper, folding it and putting it on the floor - requiring recent memory, in addition to assessing more deeply the semantic capacities of memory and language in the definition of what is "right hand", "middle ", "floor", required in the original instrument, culminating in an efficient praxis organization that attends to the resolution of problems in that activity with its motor sequencing requested with the language. Tempest (2017) defined ideational praxis as one that involves the processing in different stages of the voluntary organization of motor acts, allowing complex and ordered motor execution in sequences necessary to perform tasks. Therefore, it is a very complex item, in which the MMSE itself does not only screen for possible cognitive alterations, but actually provides a broad evaluation resource. In this adaptation, some questions were listed: "Do you have difficulty starting, maintaining or finishing an activity?" or "Do you have difficulty performing movements that are requested of you?", emphasizing the need to verify whether the interviewee recognizes possible difficulties in any damage to executive functions to carry out activities that depend on praxic circuits.

For the mastery of writing a sentence, the patient is advised to write a sentence that contains "beginning, middle and end" (Brucki et al., 2003), in which it is also possible to alternatively explain to the interviewee that this is a simple sentence, but which must contain a complete meaning for him. This domain consists of evaluating the constructive praxis due to the actions for the visuospatial processing in the drawing by the letter when writing the required sentence, together with the coordinated movements necessary to meet the objective proposed there; drawing and manipulating shapes and dimensions (Serafim et al., 2020) demonstrates preserved praxis capacity that is in the use of coordinated movements, but in these visuo-spatial contexts specific to that writing, which is also associated with representative capacities, generally abstract, semantic linguistics and reasoning, involved in a drawing activity, understanding constructive praxis as an integrative execution of representative modules in writing or drawing (Oliveira & Eduardo, 2006). In the adaptation here, the following questions were developed: "Can you write a sentence that makes complete sense with a beginning, middle and end?" and "Do you usually write?", so it is possible

to verify constructive skills that are related to possible habits of that individual in relation to the production of written language, emphasizing the practical ability to write when necessary.

For the reading and executing domain, the standardized command is that the interviewee read and obey the order given to him, which will be provided as a visual stimulus in the phrase “close your eyes” printed or written on the material used in that evaluation. It is noteworthy that the command must emphasize that it is necessary to read and then execute an order, since this is a request that cannot receive any interpretative assistance in the application of the MMSE (Brucki et al., 2003). Once again, the instrument now offers a complex item to assess different cognitive and executive abilities, which will mainly emphasize comprehension - which depends on other specific cognitive circuits associated with linguistic semantic functions and memory (Salles & Parente 2002), I understand that the command to read the sentence and execute it requires processing of the written language supported by the processes of decoding and understanding (Santos & Navas, 2004) and also requires organization of problem solving based on the praxis that organizes the specific motor act required (close the eyes themselves). In addition to the ideational praxis in which the sequential organization of motor acts would be allowed (Tempest, 2017), there is currently a MMSE command that emphasizes the response to plan and execute such motor acts in relation to the body itself (Ferro, 2020 ). Thus, it was proposed in adapting the MMSE, for the informal interview, to ask: “Can you obey a written instruction?” or “Do you have difficulty understanding a written instruction?”. The task of closing the eyes is too specific, but this can be verified in other contexts of daily life that also require the same ability to understand and correspond with intentional motor acts, which can support the performance of numerous tasks in activities and occupations, generally relevant, providing the opportunity for the patient to report whether such linguistic and practical impairments occur to him and, finally, could be informed in the context of screening in telecalls.

And, finally, the MMSE presents the mastery of copying the diagram, when it asks the interviewee to reproduce the copy of two pentagons with intersection, like the model shown by the applicator (Brucki et al., 2003) - in the case of an image in which the visual overlap of the two geometrical figures is emphatically highlighted in what has been provided. It is important to recognize the execution of the drawing by the model, as a very mature praxis capacity, which can be conceived as visuoconstruction or constructive praxis when reproducing, executing appropriate drawings and models in the clinical context (Miotto et al., 2012). In order not to carry out the same assessment of executive capacity, with emphasis on the patient's constructive praxis, the corresponding question was chosen in the present adaptation for the informal oral interview: "Would you have any difficulty copying a drawing?" (Table 1). Once again, reasoning analogous to the already discussed domains of “command of stages”, “write a complete sentence”, “read and execute”, was carried out, understanding that this domain of copying the diagram in the MMSE is already configured as a complex evaluation of the representative capacity through constructive praxis, that is, the ability to perform the necessary movements to organize different visual-spatial units using materials for writing (Grieve, 2005), associated with other functions such as visual

perception, attention, procedural memory, abstraction and executive functions, particularly problem solving. Inferring directly to the patient whether he would have difficulties in drawing may not necessarily have significant relationships with his daily life contexts, especially when considering the diversity of his occupational history or his performance, which is unrelated to the act of drawing, but which is essential for screening who would admit him for cognitive treatment if the praxis capacity was compromised. In a broad sense, it is also admitted that such an indication is part of the objectives of Cognitive Rehabilitation to maintain residual capacities and prevent other disabling damages (Machado, 2013), which deserve to be accompanied in the longitudinal treatment.

## 6 FINAL CONSIDERATIONS

Faced with social isolation in the covid-19 pandemic, resulting from changes and restrictions, directly affecting services already traditionally instituted, it witnessed the feasibility of innumerable ways to innovate care and continue to establish reference networks. Such innovations required the elaboration of strategies that are now adequate for people's daily lives, both in their private and professional lives, in order to face isolation with creativity, flexibility and constant reorganization, generally exercising occupations that are very restricted to domestic functioning in order to interact with other people via ICT. Unique moment to incorporate, disseminate and strengthen Telehealth actions as an accessible practice for continuity of services and maintenance of links between professionals, informal caregivers, patients and their loved ones. Thus, the Cognitive Rehabilitation Service also faced challenges in restructuring itself in order not to interrupt its practices and innovate.

The MMSE is markedly chosen as the simplest and most indispensable instrument to provide initial cognitive screening of cases, enabling quick identification of cognitive alterations. Still in the dimension of social distancing, aspects of the intervention in Cognitive Rehabilitation were directly affected, notably the need to ensure an always calm and controlled environment, free of distracting stimuli, which provides the expected level of attention for the interviewee to complete the assessment as faithfully as possible - was the main concern when proposing this adaptation so that patient screening continued to be carried out safely and efficiently.

Cognitive Rehabilitation involves complex stimulation of perceptual abilities, specific cognitive functions and also executive functions, in an incessant interaction with the individuals that it proposes to receive and treat. This dynamic became, at a first moment of the pandemic, directly unfeasible due to the suspension of routine face-to-face assistance. Specifically, in telecalls, professionals when in the role of interviewer will not be able to guarantee full control of that ideal evaluation environment, in which the interviewed patient is inserted. It was considered inadequacy to apply the MMSE directly in telecalls, so it was decided to adapt it, giving a close correspondence to the original purposes of the instrument, but now addressed in informal conversations possible in the present adaptation, achieving an effective resource not to interrupt the triage of new patients.

The present adaptation of the MMSE was not developed as a standard assessment resource that uses simple traditional commands, as Occupational Cognitive Performance occupational therapists commonly use them to assess all procedural steps from perception to execution in structured assessment activities, but that the based on this adaptation, they could provide an effective resource for investigating possible losses that their patients would report about themselves.

This adaptation can be applied by other professionals in the area, so that they can introduce it in their future teleservices, so that it facilitates the identification of cognitive-functional alterations relevant to the different practices and widespread services of Cognitive Rehabilitation. It may also receive other technical-scientific developments, such as a review by a committee of experts to improve verification of the psychometric properties of the instrument, or even be validated for populations similar to those served here. A limitation of the proposed adaptation is admitted, which meets the contexts of the intervention of the present team, but which will require further investigations to generalize to other needs constituted by sectors and related professionals.

Innovating with resources that make it easier to adapt to changes, as sudden as almost total social isolation, is quite possible and necessary. Adapting such an important instrument required valuing what is indispensable in the Cognitive Rehabilitation service: always promoting interaction and enabling contacts between beings in the care relationship. Understanding that such action is mutual, it occurs from purposes, their integrative dynamics, behaviors and environments in which they occupy themselves.


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