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**“The underlying processes of episodic and autobiographical memories
impairments in schizophrenia”**

by

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I-ABSTRACT

Schizophrenia is a severe psychiatric disorder marked by profound cognitive deficits, among which episodic memory (EM) and autobiographical memory (AM) impairments are particularly debilitating and linked to social functioning. This thesis investigates the underlying memory processes implicated in EM and AM dysfunction in schizophrenia. Two studies were conducted. Study 1 explored the roles of recollection and familiarity in relational and self-referential memory encoding in a healthy adult population (N=54) using a modified version of the RISE and an original Self-Referential Memory (SRM) paradigm. Recognition performance was assessed through receiver-operating characteristic (ROC) analyses. Results showed higher recognition accuracy for single item stimuli compared to paired items and demonstrated that familiarity—rather than recollection—supported the self-reference memory effect. Study 2 employed a quasi-experimental design to compare individuals with schizophrenia (n=27) to healthy controls (n=27), matched by age, sex, and socioeconomic status. Patients exhibited deficits in both recognition accuracy and dual-process parameters (familiarity and recollection), with impairments most pronounced under relational encoding demands. Notably, recollection—but not familiarity—supported self-referential memory in both groups. Across the combined sample, EM performance, particularly under self-referential encoding, predicted AM retrieval beyond the contribution of diagnostic status.

These findings indicate that recollection and familiarity contribute differentially to self-referential memory across populations and suggest that impaired self-based encoding of episodic information may partially account for autobiographical memory dysfunction in

schizophrenia. The results highlight cognitive mechanisms with direct relevance for targeted remediation strategies and psychotherapeutic interventions aiming to strengthen memory and personal identity in schizophrenia.

II- INTRODUCTION

Schizophrenia (SZ) is a severe and chronic neurodevelopmental disorder affecting approximately 1% of the global population and ranking among the leading causes of disability worldwide (Velligan & Rao, 2023). It is associated with marked impairments in social functioning and increased rates of suicide and mortality, making it one of the psychiatric conditions with the most debilitating long-term outcomes (Chong et al., 2016; Holloway & Stein, 2007; Schaefer et al., 2013). Clinically, SZ involves a wide constellation of symptoms grouped into psychopathological domains: positive (e.g., hallucinations, delusions), negative (e.g., blunted affect, avolition), affective (e.g., anhedonia, depressed mood), social-cognitive (e.g., theory of mind deficits), and neurocognitive disturbances (e.g., impairments in attention and memory) (Liddle, 2007).

Among these domains, cognitive impairment is especially relevant because it is highly disabling, shows limited response to pharmacological treatment, and typically persists even when patients achieve clinical stabilization (Robbins, 2019; Schaefer et al., 2013). Consequently, numerous psychosocial interventions have been developed to target the broad range of cognitive deficits observed in SZ (National Institute for Health and Clinical Excellence, 2009).

Memory is one of the most consistently impaired cognitive domains in SZ. Working memory and episodic memory (EM) appear to be primarily affected, whereas semantic and procedural memory remain relatively preserved (Herold et al., 2023; Kraguljac et al., 2013). Individuals with SZ frequently experience difficulty recalling or recognizing information bound to a specific spatiotemporal context—core features of episodic memory. Beyond this, deficits extend to the recollection of complex personal experiences, such as autobiographical memories (AM), which are fundamental for maintaining a coherent sense of self (Kwok et al.,

2021; Dassing et al., 2020). AM enables individuals to mentally re-experience personal past events over prolonged time intervals, supporting the continuity of identity, social relationships, and future-oriented thinking (Kwok et al., 2021; D'Argembeau, 2012). These capacities are disrupted in SZ, underscoring the importance of elucidating the cognitive mechanisms underlying EM and AM impairments.

Importantly, EM and AM deficits are strong predictors of functional outcomes, even beyond clinical symptom severity and other primary cognitive deficits (Mehl et al., 2010). Thus, they represent crucial therapeutic targets. Since pharmacological treatment offers limited improvement in memory dysfunction, psychological interventions—particularly cognitive remediation—have become essential strategies to address these impairments (Wykes & Spaulding, 2011).

Furthermore, most psychotherapeutic approaches rely on the exploration of personal experiences and integrate autobiographical content as a therapeutic resource. Therefore, advancing the understanding of AM processes is vital for improving psychological interventions in SZ (Bech et al., 2015; Ragland et al., 2020). Despite the substantial literature on EM impairments in SZ, there is still limited knowledge about how specific memory subprocesses—particularly recollection and familiarity—and self-referential encoding contribute to AM dysfunction. Addressing this gap may clarify mechanisms through which SZ compromises personal identity and everyday functioning. Although EM and AM deficits in schizophrenia have been studied extensively, most research has been descriptive, focusing on *what* is impaired rather than *why*. To design more effective interventions, it is necessary to specify the mechanisms responsible for encoding and retrieving episodic information and how these mechanisms may support more complex memory systems such as AM.

Models in cognitive neuroscience have been particularly valuable for framing such mechanisms. EM formation depends on the integration of item-specific information with contextual features, supported by medial temporal lobe subregions that differentially contribute to recollection and familiarity processes. Autobiographical memories, in turn, emerge from the assembly of episodic details into coherent personal representations that are tightly linked to the self. In SZ, disruptions in binding operations may prevent episodic details from being integrated into a unified memory trace, leading to difficulties in retrieving contextual information. Such deficits may cascade into AM impairments, particularly in memories that require rich detail or personal significance. Understanding the extent to which recollection or familiarity processes are compromised may therefore reveal specific targets for intervention (Lepage et al., 2015; Ragland et al., 2020).

To address these issues, this thesis examines the episodic memory mechanisms that contribute to autobiographical memory functioning in schizophrenia, with a focus on recollection, familiarity, and self-referential processing. By examining both healthy adults and individuals with SZ, we aim to characterize normal mechanisms of episodic encoding and determine how their alteration may lead to autobiographical memory dysfunction.

**III-THEORETICAL AND EMPIRICAL BACKGROUND OF THE RESEARCH
PROBLEM**

Episodic and Autobiographical Memories

Human long-term declarative memory encompasses semantic memory, which is general knowledge about the world, and episodic memory (**EM**), which supports the conscious re-experiencing of personally lived events situated in a specific spatial and temporal context (Tulving, 1983; Squire, 2004). EM provides access to perceptual, affective, and contextual details from individual experiences, enabling mental time travel. Traditional research in EM has been developed along different dimensions, such as verbal versus abstract, spatial versus nonspatial, and item versus relational memory (Davachi, 2006). Item memory is related to the processes involved in encoding and retrieving a single piece of information. In contrast, relational memory refers to the processes by which people can form relationships between two or more pieces of information. In relational memory, we can bind multiple objects together (e.g., “I saw a neighbor with her dog”) or within a spatial or temporal context (e.g., “I saw a neighbor at the coffee shop in the morning”). However, item memory (e.g., “I saw a neighbor”) is a more discrete but necessary component of relational memory (Lepage et al., 2015).

A key question concerns the mechanisms that underlie the encoding and retrieval of episodic information. Dual-process theories propose that recognition may arise from two distinct processes: **recollection** (the recovery of contextual and qualitative details) and **familiarity** (a sense of memory strength without requiring contextual retrieval) (Yonelinas, 1994; Yonelinas et al., 2010). These processes support different aspects of EM and may contribute unequally depending on task demands. Additionally, encoding can be based on individual items—**item-specific processing**—or involve **relational memory (RM)**, in which

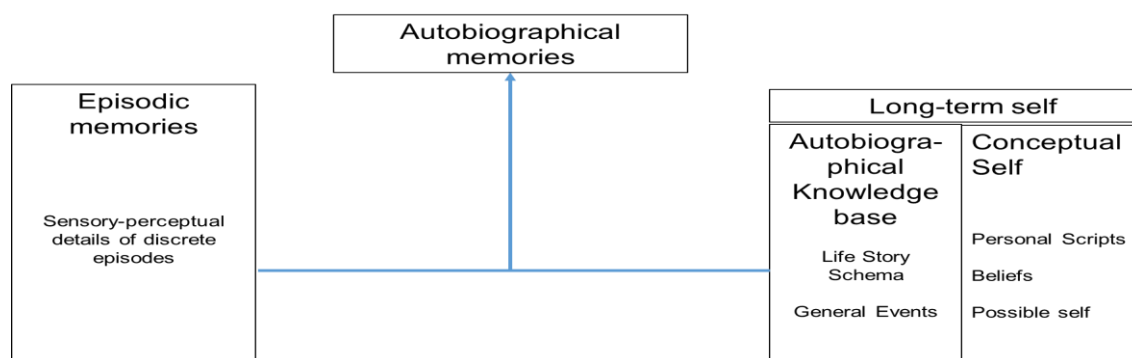
multiple elements need to be bound together within a contextual structure (Davachi, 2006). The Binding-of-Item-and-Context (BIC) model attributes relational binding primarily to the hippocampus, whereas cortical regions such as the perirhinal and parahippocampal cortices support familiarity- and context-based processing, respectively (Ranganath, 2010).

From a complementary line of research, self-referential memory (SRM) research demonstrates that encoding information in relation to oneself enhances later recognition—known as the **self-reference effect (SRE)** (Rogers et al., 1977). This effect reflects the privileged processing of self-related content within memory networks and has been linked to both familiarity- and recollection-based mechanisms depending on task structure (Serbun et al., 2011).

Finally, autobiographical memory (AM) builds upon EM by integrating episodic details into coherent narratives that are self-relevant and extended across the lifespan. Within the Self-Memory System (SMS) model, AM emerges from interactions among episodic traces, personal semantic knowledge, and self-related goals, helping maintain identity, continuity, and social connectedness (Conway & Pleydell-Pearce, 2000; D'Argembeau, 2012). The understanding of AM within the SMS model is represented in Figure 1.

Figure 1

Autobiographical Memories within Self Memory System



Note. Autobiographical Memories are transitory, dynamic mental constructions generated from an underlying knowledge base articulated with episodic memories. (Modified from Conway et al., 2004).

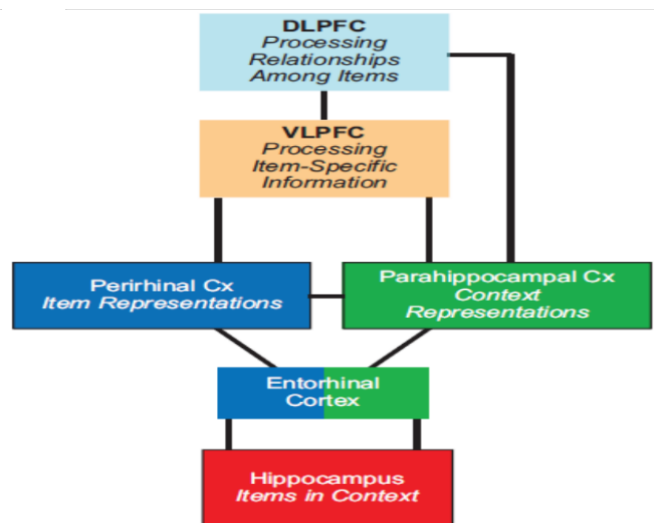
The knowledge about EM and AM formation relies, fundamentally, on research into the encoding and retrieval stages. First, the information must be acquired or encoded, and then it must be evoked when necessary (Melton, 1963). Traditional EM research has benefited from this segmentation; for instance, cognitive neuroscience researchers have employed various recognition paradigms, where individuals learn material during a study phase and are then probed to determine whether it is “old” or “new” during a test phase (Guo et al., 2019).

In the case of AM, researchers have adapted tasks traditionally used in EM. However, events remembered in AM are, generally, out of the experimenter’s control, so it has been challenging to elucidate the factors involved in the encoding stage. This situation contrasts with the preponderance of evidence acquired through the study of the retrieval stage in AM, from which most of the information on the possible factors involved has emerged (Robinson, 1976; Wagenaar, 1986). After introducing general concepts about EM and AM, their respective relationships, and the processes involved, we will present evidence regarding the impairments of these dimensions in Schizophrenia (SZ).

Different models have attempted to explain the involvement of various brain regions in the experience of EM. One model particularly relevant for this project is the Binding and Items Context (BIC) model. This model was developed as an extrapolation of the contribution that different subregions in the medial temporal lobe (MTL) make to EM (Ranganath, 2010). For instance, in the BIC model, the perirhinal cortex receives input from neocortical areas that process information about specific items, such as the ventrolateral prefrontal cortex (VLPFC) (Eichenbaum et al., 2007). On the other hand, the parahippocampal cortex receives input predominantly from the dorsolateral prefrontal cortex (DLPFC), which represents information about the context. Finally, the hippocampus is the region responsible for binding items in their respective contexts (see Figure 2; Eichenbaum et al., 2007).

Figure 2

Binding and Item Context Model



Note. Prefrontal and medial temporal lobe subregions contribute differentially to the processing of episodic memory. DLPFC: Dorsolateral prefrontal cortex. VLPFC: Ventrolateral prefrontal cortex (Retrieved from Ranganath, 2010).

In practical terms, the application of the BIC model in the research field of SZ brought, consequently, the formulation of the Relational and Item-Specific Encoding (RISE) task. A task designed to evaluate the contribution of different processes in the encoding and retrieval stages of EM in SZ (Ragland et al., 2012b). Manipulation in the encoding phase is performed by distinguishing between a "relational" encoding, which promotes memories for associations between items, and an "item-specific" encoding, which promotes memories for specific items.

For the retrieval stage, two types of recognition tests are distinguished. The first is a specific item recognition task, in which subjects are asked to recognize items previously presented alongside a series of new ones. The ability to discriminate is complemented by requesting to judge items as "old/new" together with confidence in their decision (low, medium, or high). These data are used to study the recollection and familiarity processes differentially. Additionally, during the paired recognition task, previously presented items are presented again in pairs, with some of them maintaining their original order and others being rearranged (Ragland et al., 2012b).¹

Episodic Memory Impairments in Schizophrenia

Individuals with schizophrenia (SZ) exhibit consistent deficits in EM that extend beyond medication and symptom fluctuations (Aleman et al., 1999; Robbins, 2019).

¹ More details about the Rise task are presented in the Data-collection section of this manuscript.

Recognition impairments are particularly pronounced under relational encoding demands, suggesting failures in hippocampal-based binding processes (Ragland et al., 2012). These impairments reduce access to contextual details required for accurate recollection. The role of familiarity remains more controversial: whereas some studies report preserved familiarity, others show impairments depending on task design and confidence measurement methods (Libby et al., 2013). Receiver-operating characteristic (ROC) methods emerge as a possible solution as they provide a more reliable dissociation than introspective judgments, highlighting methodological variability as a source of inconsistencies.

Recollection and Familiarity-Based Recognition in Schizophrenia

Several recent studies have investigated the role of recollection and familiarity processes in impairments of EM in SZ. There have been contradictory results, with most studies reporting consistent alterations in the recollection dimension but variable findings in the familiarity dimension (Libby et al., 2013). The Remember Know New (RKN) paradigm has been the most widely used (Tulving et al., 1985). In this paradigm, subjects are asked to respond with "remember" when they recollect qualitative information about the studied event and with "know" when an item is recognized solely based on familiarity. The evidence from these studies consistently shows impairments at the recollection level, while the results are heterogeneous for familiarity. Most of the research has shown no differences or even better performance for familiarity in the population with schizophrenia compared to healthy controls (Libby et al., 2013).

However, it is essential to consider that the RKN paradigm may not be the most optimal behavioral method for studying the cognitive subprocesses of recollection and familiarity (Yonelinas et al., 2010). For individuals to respond accurately in accordance with the instructions, they must fully understand the two response options. If this does not happen, individuals may make errors in their introspective reports based on a single decision. Consequently, controversies have arisen regarding whether Remember/Know reports can accurately reflect recollection and familiarity processes, or whether they merely reflect memory strength (Dunn, 2004).

More recently, studies have employed ROC curves to distinguish between retrieval processes. A behavioral method that provides a threshold-independent view of performance (Wichchukit & O'Mahony, 2010). Participants are asked to evaluate their subjective confidence (high, medium, low) that a particular item is new or old (e.g., RISE task). These confidence judgments are plotted in ROC curves, which can be analyzed to estimate the contributions of recollection and familiarity (Yonelinas, 1994).

This line of research has consistently reported findings of alterations in the population with SZ, particularly in recollection and familiarity processes (Libby et al., 2013). However, the pattern has not been consistent, with studies reporting a greater degree of alteration at the level of familiarity-based recognition compared to that of recollection-based (Ragland et al., 2012a). Additionally, other reports from the same group of researchers, but using different paradigms, reported worse performance for recollection compared to familiarity-based recognition (Ragland et al., 2012b). It is essential to clarify that the former study was conducted in the context of long-term EM and working memory tests, whereas the second study used the RISE task. The difference between procedures in these two reports is an

example of how methodological variability is probably at the base of contradictory results (Libby et al., 2013).

Consequently, this is not enough to unequivocally conclude the impairment pattern in schizophrenia (Libby et al., 2013). It is necessary to expand on the findings already described and adapt the analysis of ROC curves to other paradigms, thereby complementing the current evidence. In the next section, we will introduce another paradigm that will be useful to accomplish these objectives.

Self-Referential Memory Encoding and Its Application in Schizophrenia

Research

Self-referential memory (SRM) encoding refers to a broad concept that encompasses various experimental tasks, whose primary objective is to assess the self-referential effect (SRE) (Rogers et al., 1977). SRE refers to the improvement in memory test performance after self-referential encoding compared to encoding for other referents. The relevance of SRM for this project stems from emerging evidence supporting the relationship between self-referential processing and the development of AM (Mizrahi & Axelrod, 2023; Ross et al., 2020). Consequently, this antecedent raises the possibility of studying SRM as a possible predictor of AM performance in SZ.

In a typical SRE experiment, participants are exposed to adjectives (e.g., sympathetic, selfish, funny) that must be classified as either related or unrelated to themselves (Andrews et al., 2020; Lawrance & Chai, 2021). Other stimuli used for evaluating the SRE include pictures, which can be particularly useful for studying the SRE in populations that have

difficulty reading or understanding complex concepts (Kern et al., 2013; Lawrance & Chai, 2021). These findings have been applied to other memory dimensions; for instance, SRE has been examined in adjective recognition tasks and assessed its effect on recollection and familiarity (Conway & Dewhurst, 1995). Previous research on the SRE using the RKN paradigm has suggested that the SRE is related to recollection rather than familiarity and has been named the self-referential recollection effect (SRRE) (Conway et al., 2001). However, other research suggests that the SRE is implemented via both familiarity and recollective processes (Serbun et al., 2011).

SRE has also been examined in the context of binding recognition (i.e., paired recognition) (Andrews et al., 2020). In this study, the authors tested memory using an episodic paired paradigm combined with a self-versus other reference paradigm. They aimed to evaluate item-context binding processing using faces associated with different objects. For the *self-referential* encoding condition, they used a photograph of the subject's own face, and for the other-referential condition, photographs of other subjects. In the test stage, they displayed an object and a referent each time, and the subjects were asked to judge whether the display had been presented before. The inclusion of different trial types enabled the evaluation of three distinct discrimination scores (item, referent, and item-referent paired discrimination). Replicating and extending previous findings, they found self-reference advantages for item and for item-referent paired discrimination (Andrews et al., 2020).

In the context of schizophrenia, few studies have evaluated self-referential processing. Some studies support the presence of SRE in individuals with SZ, while others, conversely, fail to find this effect (Harvey et al., 2011; Pauly et al., 2014; Raffard et al., 2016). Regarding recollection and familiarity, attempts have been made to evaluate SRE in the context of RKN

tasks; however, these have failed to find an enhancement of SRE in recollection or familiarity (Compere et al., 2016). In conclusion, there is poor clarity about the indemnity of self-referential processing in people with schizophrenia, both at the effect's level and in the processes that support it. Consequently, we will evaluate the performance of SRM in people with schizophrenia and healthy subjects, their respective retrieval processes, and their relationship with AM performance.

Autobiographical Memory Impairments in Schizophrenia

AM impairments in schizophrenia have been reported consistently in different reports (Berna et al., 2016). However, the situation changes when the processes underlying these impairments are discussed. As previously introduced, mainly due to methodological difficulties associated with the concept of AM, the retrieval stage of AM impairments has been investigated almost exclusively in comparison to the encoding stage. The principal factor involved as a putative underlying process has been executive dysfunction, limiting the ability to initiate optimal cognitive strategies to access specific memories (Williams et al., 2007).

Nevertheless, evidence is sustained by contradictory results. For the supporting evidence of executive dysfunction, Potheegadoo et al. (2014) evaluated the effectiveness of a specific method of cues based on specific questions to improve the retrieval of AM in people with SZ. The results showed evidence in favor of the specific cueing method, which led the team of authors to consider this as a possible cause of the improvement in initiating appropriate strategies to retrieve specific details of memories. Better strategies in the generative retrieval of AM are thought to be a consequence of improved executive functions.

Hence, these results are in line with the involvement of executive dysfunction as an essential factor in AM impairments in SZ.

However, these results complement the situation that not all domains were improved in the same way after the intervention with the specific cueing method. The strategy successfully normalized the performance of details in cognitive and emotional categories but was ineffective in contextual and sensory-perceptual categories. The authors suggest that the information related to these categories may have been poorly encoded; therefore, the retrieval supported by the specific cueing strategy may not have achieved a sufficient effect to improve performance. Consequently, the group of researchers concludes that impairments at the retrieval stage do not account for the entire phenomenon of AM impairment, which is why it is necessary to consider processes in the encoding stage that may be involved (Alle et al., 2021; Herold et al., 2015).

Suppose we consider the processes at the encoding level in SZ (e.g., relational memory, self-referential processing) and their respective relevance in integrating contextual information (Herold et al., 2015). It becomes valuable to try to understand the underlying processes of AM impairments in schizophrenia through the lens of EM encoding impairments. It is essential to recall that in the SMS model, EM is considered a foundational level that enables a more complex representation, such as AM. Therefore, one of the aims of this project will be to investigate the possibility that the performance of EM tasks under specific encoding conditions (RM and SRM paradigms) may, in part, explain AM retrieval performance (see Figure 3). These analyses could give supporting evidence to the SMS model and give a fine-grained idea of how the encoding stage could be involved in AM impairments in schizophrenia.

Figure 3

Conceptual Map Behind the Research Proposal



Note. Two relational processes in the context of episodic memory are hypothesized to be involved in the formation of more complex representations, such as autobiographical memories.

IV-AIMS AND HYPOTHESIS

This thesis comprises two empirical studies designed to investigate the cognitive mechanisms underlying episodic memory (**EM**) and autobiographical memory (**AM**) functioning in healthy adults and individuals with schizophrenia (**SZ**). Each study includes specific aims and associated hypotheses detailed below.

Study 1

Research Question

In healthy young adults, what cognitive processes support performance in relational memory (**RM**) and self-referential memory (**SRM**) tasks?

General Aim

To examine the contributions of recollection and familiarity processes to recognition under single-item and paired-item conditions, and to determine the memory mechanisms that underlie SRM in a healthy population.

Specific Aims

1. Describe and analyze the demographic, clinical, and neurocognitive characteristics of healthy young adults participating in the study.

2. Determine differences in behavioral performance between RM and SRM conditions using recognition accuracy (Pr).
3. Estimate the contributions of recollection- and familiarity-based recognition across RM and SRM tasks using ROC-based modeling.

Hypothesis 1

Building on evidence that single-item processing typically yields better recognition than relational processing—and that recollection contributes more strongly to item memory—we hypothesize that:

- (a) single-item recognition will outperform paired-item recognition, and
- (b) recollection estimates will be higher in single-item than paired conditions, with familiarity effects emerging across both.

Hypothesis 2

Consistent with the self-reference memory effect (SRE), we expect self-referentially encoded information to be better recognized than information encoded in reference to another person. Moreover, ROC-based estimates will allow us to dissociate mechanisms, and we hypothesize that SRM advantages will be supported by specific combinations of recollection and familiarity processes.

Study 2

Research Question

In individuals with SZ and healthy adults, what cognitive processes support performance in relational (RM), self-referential (SRM), and autobiographical memory (AM) functioning?

General Aim

To identify alterations in EM encoding and retrieval mechanisms (RM and SRM) in SZ, and to examine whether these episodic processes predict AM performance across groups.

Specific Aims

1. Compare recognition performance under RM and SRM encoding conditions between the SZ and healthy groups.
2. Examine group differences in recollection and familiarity-based recognition within RM and SRM paradigms.

3. Characterize impairment patterns in episodic subprocesses across relational and self-referential recognition conditions in SZ.
4. Evaluate whether RM and SRM recognition performance predict AM retrieval across groups, controlling for demographic and clinical variables.

Hypothesis 1

Given disruptions in associative encoding and retrieval in SZ, and evidence of recollection deficits, we hypothesize that SZ participants will show:

- (a) disproportionately reduced recollection and familiarity in paired recognition, and
- (b) greater impairments when self-based encoding demands are present.

Hypothesis 2

If EM processes provide input to AM representations, then RM and SRM performance will significantly predict AM measures beyond group status and age—that is, EM subprocesses will contribute unique variance in AM functioning across participants.

V-METHODS

General Design

This thesis includes two empirical studies using quantitative designs and recognition-based episodic memory (EM) paradigms. Study 1 is a descriptive-exploratory study in healthy young adults aimed at characterizing the mechanisms of relational memory (RM) and self-referential memory (SRM). Study 2 is a quasi-experimental comparative study evaluating these mechanisms in individuals with schizophrenia (SZ) and matched healthy controls. Both studies employed behavioral performance and dual-process signal detection ROC analyses to estimate the processes of recollection and familiarity.

Participants

Study 1 – Healthy Adults

Participants were healthy young adults aged 18–40 years, recruited from the community through public postings and social media announcements. Eligibility criteria included: no history of neurological or developmental disorders; normal or corrected-to-normal vision. If they had a history of psychiatric disorder, this had to be well stabilized. Exclusion criteria included a new diagnosis of a mental disorder according to the MINI interview or cognitive impairment based on the Montreal Cognitive Assessment (MoCA) cutoff score.

Demographic, clinical, and cognitive screening ensured that only participants who met all inclusion criteria proceeded with the experimental tasks. Screening included self-report questionnaires, structured interviews, and performance-based tests (described below).

Study 2 – Schizophrenia and Matched Controls

Study 2 included two groups: individuals with SZ and healthy control participants. Patients were recruited from mental health outpatient services and were required to meet a DSM-5 diagnosis of schizophrenia confirmed by a psychiatrist. They also needed to be clinically stable, receiving regular psychiatric treatment, and not currently hospitalized. Healthy controls were matched to SZ participants based on sex, age, and socioeconomic status (SES). Controls were recruited from the general community from the same territory as the SZ participants and underwent the same screening procedures as the patient group.

Sample Size and Power Considerations

Sample sizes were determined based on feasibility constraints and previous literature using similar RM and SRM paradigms with ROC-based analyses. The sample size was calculated using a power analysis performed with G*Power 3 (Faul et al., 2007). The analysis was based on the last study found in the literature, which provides data on the self-referential effect and recollection in healthy subjects (Boduroglu et al., 2015). Using this data, transformed into an effect size of $d_z = 0.42$, a 1-tailed alpha error of 0.05, and a power of 0.8, the sample size required for an analysis based on a paired samples t-test was $n = 37$. A 10% possible loss will be added to give a final size of $n = 41$.

For Study 1, the total recruited sample comprised a group of 57 young adults. Two of them completed half of the assessment, and another was excluded because their performance was below the 0.5 probability hit rate on any of the recognition tests. A final sample of 54 subjects was analyzed, with a mean age of 25.5 years and 38 females (see Table 1).

Table 1

Demographic and Clinical Characteristics of Participants in Study 1

Variable	Subjects ($n=54$)	
	Mean	SD
Age (y)	25.53	5.46
Treatment (% in treatment)	34.50	
Education (y)	17.47	2.47
Sex (%female)	70.90	
Handedness (% right)	80.00	
MoCA total	27.09	2.12
Memory Index Score	12.56	2.35
CORE-OM score	8.31	4.18

Note. MoCA, Montreal Cognitive Assessment. CORE-OM, Clinical Outcomes in Routine Evaluation Outcome Measure.

For Study 2, the sample consisted of two groups: a control group and a second group of SZ subjects. The definition of SZ was operationalized according to the criteria outlined in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) (American

Psychiatric Association, 2013). Both original samples were recruited from outpatient clinics of the Southern Metropolitan Service of Santiago. The inclusion criteria were both sexes, aged between 18 and 55 years, and native Spanish speakers. The selection was through convenience sampling due to its applicability and cost-effectiveness (Elfil & Negida, 2017). Flyers with the description of the study were distributed in three outpatient general health clinics and two mental health clinics in the southern metropolitan area of Santiago. Interested individuals were invited to register through an online form or by contacting the number listed in the flyer directly. They would subsequently be contacted by the main researcher to coordinate the first session at one of the participating centers. The entire selection process was carried out by the responsible researcher.

The sample size was calculated using a power analysis performed with G*Power 3 (Faul et al., 2007). First, we used the first two specific objectives, which sought to find differences in means between two independent groups. The sample size calculation was conducted based on a statistical test of the difference in means between two independent groups, using data from the original study of the RISE experimental test. This study compares a group of people with schizophrenia with a group of healthy subjects across various test measures. The one with the lowest effect size value was used, corresponding to the difference in the familiarity process in the relational condition between the two groups (*Cohen's d* = 0.82, $p < 0.001$). Using these data for the sample size calculation, with an effect size $d = 0.82$, an alpha error of 0.05, and a power of 0.8, the sample size for each group was determined to be $n = 20$, based on an analysis of the means of two independent groups.

As we had other specific objective which aimed to estimate an explanatory model between relational and self-referential memory variables as predictors of autobiographical

memory, the power analysis was based on the only study found in the literature, which provides data on the possibility of explaining performance in self-referential processing tests and autobiographical memory tests using a multiple regression model ($\Delta R^2=0.145$, $p<0.001$; Ross et al., 2019). Using these data to calculate the sample size, based on a multiple linear regression statistical test with a fixed model and an increase in R^2 , transformed to an effect size $f^2 = 0.197$, alpha error of 0.05, and power of 0.8, the total sample size resulted in $n = 53$, for an analysis based on multiple regression with 4 predictors. A possible loss of 10% will be added to give a final size of $n = 58$.

Following this last sample calculation, but now in the total sample made up of the group of people with schizophrenia and the group of healthy subjects, seeking to examine the relationship between the performance of relational and self-referential memory tasks with the autobiographical memory retrieval performance; the sample size was increased, following the pattern of the analysis that requests a larger sample size, leading to a sample size of $n = 58$, with a size per group of $n = 29$. In this case, the explanatory model aimed to study the explanation of autobiographical memory performance based on the prediction that the performance of relational and self-referential memory may extend beyond the predictors of the first steps of the hierarchical model, which include age and disease condition.

The exclusion criteria for both groups were the following: neurological diseases, visual disturbances, intellectual disability, autism spectrum disorders, history of drug abuse or dependence, clinical depression, PTSD, and mild neurocognitive disorder. For the SZ group, we will exclude subjects who have made changes to their dose regimen within the three months preceding the first evaluation. For the group of people with SZ, we will exclude

subjects with psychotic symptoms at the decompensation level, evaluated through the cut-off level of 58 through PANSS (Leucht et al., 2005).

The total recruited sample comprised a group of 36 subjects with schizophrenia. Nine subjects obtained a score of less than 23 points in the MoCA evaluation, which is the necessary cutoff score for mild neurocognitive disorder in the Chilean population (Delgado et al., 2017). Therefore, the final sample for the group with schizophrenia was 27 subjects with a mean age of 32.85 years and 7 females (see Table 2). Fortunately, we did not experience any losses in the groups, which allowed us to maintain the power analysis described earlier in this section.

Table 2*Demographic and Clinical Characteristics of Participants in Study 2*

Variable	Controls (n=27)		Sz Patients (n=27)		P Value
	Mean	SD	Mean	SD	
Age (y)	30.6	8.99	32.85	10.06	ns
Education (y)	15.54	2.47	13.26	2.46	0.001
Sex (%female)	29.63		25.92		ns
Handedness (% right)	96.29		85.19		ns
Functionality (Cf)	12.85	6.83	17.52	7.85	0.01
MoCA	26.60	2.31	23.78	3.50	0.01
MIS	12.74	2.12	10.11	3.20	0.01
MACs ep/sp	38.90	5.83	34.00	5.08	0.001
AMI total	81.74	9.20	71.46	13.01	0.001
PANSS total	—	—	34.70	14.34	
Chlorpromazine eq.	—	—	345.74	218	

Note. ns, not significant group difference at $P < .05$, 2 tailed. Cf, Clinical Outcomes in Routine Evaluation-Outcome Measure functionality subscale. MoCA, Montreal Cognitive Assessment. MIS, Memory Index Scale. AMI, Autobiographical Memory Interview. MACs ep/sp, Memory Assessment Clinics Self-Rating episodic and spatial subscale. PANSS, Positive and Negative Syndrome Scale.

For the control group, 18 subjects were recruited, comprising 11 females aged between 20 and 49 years, all of whom resided in the same geographical area as the SZ group. To complete the control group, 9 participants from the pilot group of 15 subjects were included, all of them with a similar sociodemographic profile. To select the 9 subjects for the control group, frequency matching was performed, considering the variables of sex, age, and socioeconomic level, to create a control group as similar as possible to the patient group (Parker & Berman, 2016). In this way, eight males and one female were selected, all of whom had a medium or low socioeconomic status, defined by the municipality of their residences. The final sample for the control group was of 27 subjects with a mean age of 30.6 years and 8 females (Table 2).

Ethical considerations

This project was approved by the Ethics Committee of the Pontificia Universidad Católica de Chile (UC-Chile) and the Southern Metropolitan Health Service of Santiago. For the first study, the sample consisted of a group of healthy young adults. They were invited through advertisements published on the Campus San Joaquín UC website. Interested individuals were invited to register through an online form and visit the Fondequip Laboratory of the School of Psychology at a mutually agreed-upon time. All participants were required to sign a consent form, in accordance with the Declaration of Helsinki, which outlines the principles for ethical research involving human subjects. For the second study, the procedure was similar, with the only difference being that the advertisements were published and the subjects were evaluated at their own community health centers.

Data-collection Instruments

To assess clinical, cognitive, and episodic memory (**EM**) functioning, both studies employed a standardized battery described below. Measures were administered in the same fixed order for all participants.

The Positive and Negative Syndrome Scale (PANSS) Spanish Version

The PANSS scale (Kay et al., 1987) assesses the symptomatic severity of patients with schizophrenia. The adapted version to Spanish will be used (Peralta & Cuesta, 1994). Regarding reliability, it presents Cronbach's Alpha of 0.73 for positive scale, 0.83 for negative scale, and 0.87 general psychopathology. About validity, comparisons with BPRS, SAPS, and SANS indicate reasonable rates of concurrent validity. We used this instrument for a general description of the patient group (Raffard et al., 2010).

Mini International Neuropsychiatric Interview (M.I.N.I.) Spanish version

This brief structural diagnostic interview (15-30 minutes) is validated for its application in Chile. It explores the leading psychiatric disorders of the DSM-IV Axis I and ICD-10 (Sheehan et al., 1998). Different studies have demonstrated that the MINI has high acceptability and validity, with positive predictive values exceeding 0.70, negative predictive values exceeding 0.90, and a complete diagnostic prediction in approximately two-thirds of

cases. Additionally, it has been demonstrated to be a highly reliable test-retest instrument (De Azevedo Marques & Zuardi, 2008). There are a translation and license to use this instrument in Chile (Sheehan et al., 2000).

Clinical Outcomes in Routine Evaluation - Outcome Measure (CORE-OM)

Spanish Version.

CORE-OM is a psychological instrument specially designed to evaluate the therapeutic progress of patients with various problems or pathologies (Trujillo et al., 2016). It is composed of 34 items, divided into four dimensions: Subjective well-being, Problems/Symptoms (P), General Functioning (F), and Risk (R). Regarding their psychometric properties, all dimensions demonstrated alpha coefficients between 0.75 and 0.90, indicating appropriate internal reliability. It also has adequate validity and excellent acceptance and sensitivity to therapeutic change (Trujillo et al., 2016).

Montreal Cognitive Assessment (MoCA) Spanish Version.

The MoCA is a rapid assessment tool used to evaluate general cognitive status. The MoCA test has good internal consistency, with a Cronbach alpha of 0.83, in its original version (Nasreddine et al., 2005). An adapted and validated version for the Chilean population will be used in this study, which presents good internal consistency with a Cronbach's alpha of

0.77 (Delgado et al., 2017). We used this instrument to exclude individuals with mild cognitive impairment and to describe the general cognitive performance of both groups.

The Memory Assessment Clinics Self-Rating Scale (MAC-S)

The MAC-S is a self-rate scale designed to evaluate subjective memory complaints (Crook & Larrabbe, 1990). The scale comprises 21 items assessing memory recall, 24 items evaluating the frequency of memory failures, and 4 global rating items assessing overall comparison to others, comparison to the best memory one has ever had, speed of recall, and concern or worry over memory function. For the study, we used two specific subscales (i.e., episodic and spatial subscales) to describe the subjective cognitive performance of the groups and evaluate their possible role as predictors of AM performance (Tarantini et al., 2021).

Relational Memory/ Relational and Item-Specific Encoding (RISE) Task

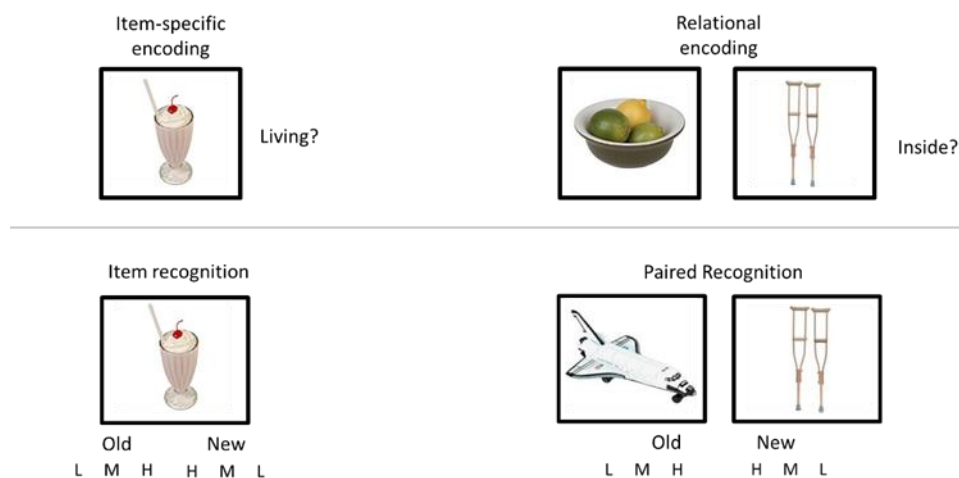
Modified Version

Experiment 1 consisted of a modified version of the relational item-specific encoding (RISE) task (Ragland et al., 2012). The stimuli were selected from a standardized corpus of images (<https://bradylab.ucsd.edu/stimuli.html>) (Brady et al., 2008). The task was programmed using the software Psychopy version 2023.1.2 (Peirce et al., 2019). The task consisted of two encoding conditions (see Figure 4): (a) Single item encoding: 60 stimuli were presented for 2 seconds each, with an inter-stimulus interval (ISI) of 1 second. In each

presentation, subjects provided a 2-button "yes/no" response indicating whether the objects were considered "alive". (b) Item pairs encoding: 60 pairs of objects were presented for 4 seconds, with an ISI of 1 second; subjects gave a 2-button yes/no answer indicating whether one item could fit inside the other. Encoding conditions alternated in a pseudo-randomized block design (three single-item blocks with 20 trials each and three item pairs blocks with 20 trials each). A three-second instruction display announced changes between experimental conditions.

Figure 4

Experiment 1. Modified Version of the Rise Task



Note. Illustration of the evaluation procedures of the single item and item pairs with their respective stimuli (modified from Ragland et al., 2012). (A) In the encoding phase, there were two conditions: single-item and item-pair. (B) In the single item recognition condition, participants had to indicate whether each item was "old" or "new", whereas in the item pair recognition condition, participants had to respond "old" if the items in each pair were presented

together in the previous encoding phase. In both conditions, participants had to give confidence estimates (low (L), medium (M), high (H)) associated with the judgment of "old" or "new". The single-item recognition example shows an "old" item. The item pair recognition example shows new/old stimuli, configuring a "new" pair.

As shown in Figure 4, after encoding, two recognition tasks were administered. Single-item recognition: The 60 single items presented were randomly mixed with 60 new, unstudied items. Participants had to indicate whether each item was "old" or "new". Item pair recognition: The 60 pairs of items presented (old/old) were randomly mixed with 60 new pairs (old/new) of stimuli composed of one item already presented and one novel item. Participants had to respond "old" if the items in each pair were presented together in the encoding phase. They also had to give confidence estimates (low, medium, high) associated with the judgment of "old" or "new". As mentioned earlier, research has utilized reorganized pairs of previously presented items, making it challenging to evaluate the role of item familiarity, as all stimuli have the same level of familiarity (since all stimuli were previously presented) (Yonelinas et al., 2010). Thus, to better study familiarity effects, we decided to include pairs in which both stimuli were previously presented (old/old: *old item* pairs), as well as pairs in which one of the stimuli was not previously presented (old/new: *new item* pairs).

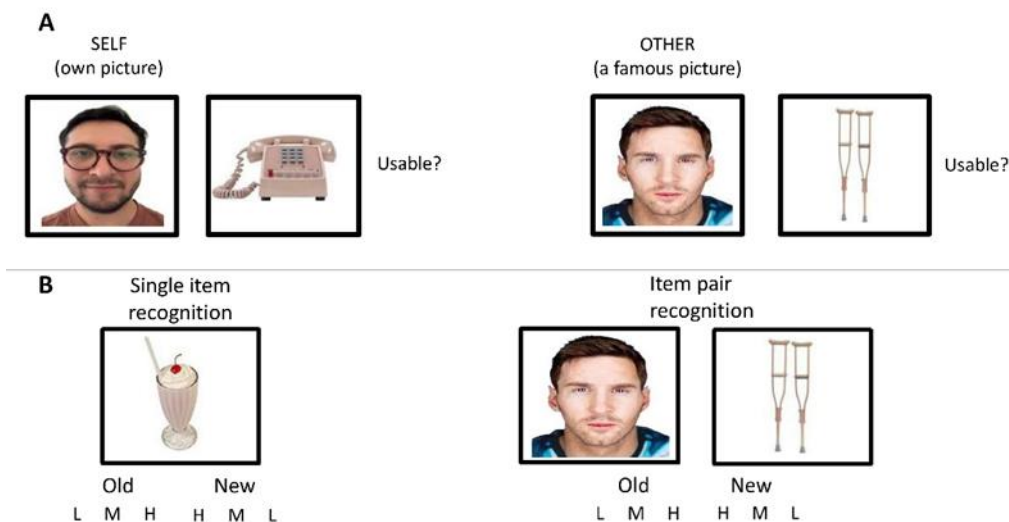
Self-Referential Memory Task

In the "self-referential" encoding condition, a photograph of each participant's face was used, along with an image of an object. In contrast, the "other-referential" encoding condition

involved a picture of a famous person. Both encoding conditions were presented using a pseudorandom block design. Additionally, the side of the face location was counterbalanced so that on half of the trials, it was on the left side and on the other half, on the right side.

Figure 5

Experiment 2 Self-Referential Task



Note. Illustration of the evaluation procedures for the encoding and recognition stages with their respective stimuli (modified from Ragland et al., 2012). (A) In the encoding phase, there were two conditions: self-referential and other-referential, each consisting of a face image and an object image. (B) In both single-item and item-pair recognition conditions, participants had to indicate whether the item or item pair was “old” or “new” and provide confidence judgments (low (L), medium (M), high (H)). For illustrative purposes, the face of the Chilean celebrity used in the original experiment was replaced with that of the world-famous footballer Lionel Messi.

The single-item recognition example shows a “new” item. The item pair recognition example shows old/old stimuli, configuring an “old” pair.

The stimuli consisted of 240 images of visual objects selected from a corpus of photographic images (<https://bradylab.ucsd.edu/stimuli.html>) (Brady et al., 2008). Participants performed an object encoding task either associated with their own face (*self-referential*) or the face of a celebrity, a famous Chilean TV presenter (*other-referential*). We decided to use the picture of a famous person with the rationale of controlling for familiarity effects. Both faces showed a neutral facial expression, set against a white background (see Figure 5). During the encoding phase, 60 items were shown together with the participant's own face (*self-reference* encoding), while another 60 items were presented with the face of a celebrity (*other-reference* encoding). Each pair of images was presented for 3 seconds each, with a 1-second ISI; participants were asked to respond "yes/no" if the target could be usable for the person corresponding to the face. After encoding, two recognition tasks were performed. The first task was a single-item recognition task, where 30 items were presented with the participant's face (old, self-reference) and 30 items were presented with the celebrity's face (old, other-reference). These items were then randomly intermixed with 60 other novel objects (*new*). Participants indicated whether each item was "old" or "new" with their respective confidence level. The second recognition task consisted of item-face pairs, with 30 item-self reference *old* pairs, 30 item-other reference *old* pairs, 30 item-self new pairs, and 30 item-other new pairs, randomly intermixed. As in the single-item recognition task, participants indicated whether each item pair was "old" or "new" with their respective confidence level (low, medium, high).

Autobiographical Memory Interview (AMI) Spanish Version.

The AMI is a structured interview where the interviewer asks the participants to recall three specific AM for each of three periods of their lives (childhood, early adulthood, and recent periods of life) (Kopelman et al., 1989). Likewise, they are asked to provide specific semantic details corresponding to each period (e.g., names of people and places related to the AM produced). All this is complemented with guided questions to collect as much detail as possible, which will finally be scored, granting a maximum of 90 points (Congleton & Berntsen, 2019). The original publication by Kopelman et al. (1989) reports an inter-rater reliability coefficient of $r = 0.83$. Salazar (2008), who translated and adapted the original version of AMI into Spanish, produced the Spanish version of AMI.

Procedure

The Ethical Committee for Clinical Research of the Pontificia Universidad Católica de Chile approved this project in October 2022. For the second study with subjects with schizophrenia, we had to present the project to a second Ethical Committee of the Southern Metropolitan Health Service, which was approved in December 2022. All participants signed an informed consent. The intervention and information-gathering sessions were held in a private and closed space that guaranteed confidentiality. The subsequent handling of the information adhered to strict ethical criteria and was managed by the doctoral candidate's

principal supervisor. Throughout the process, support was requested from the medical teams of the participating centers to implement possible mitigation measures in the event of adverse situations that may arise during the investigation. However, we did not have any adverse events during the entire research process.

For both studies, the procedure was conducted in two sessions separated by two weeks between evaluations. In the first session, informed consent was obtained, and sociodemographic and clinical data were collected using the Research Electronic Data Capture (REDCap) system (Harris et al., 2009). The questionnaires of the first session included: i) International Neuropsychiatric Interview MINI Spanish version (Sheehan et al., 2000). ii) Montreal Cognitive Assessment (MoCA; Delgado et al., 2017) Spanish version iii) Edinburgh Handedness Inventory Spanish version (Albayay et al., 2019) and the Clinical Outcomes in Routine Evaluation - Outcome Measure (CORE-OM, Trujillo et al., 2016) Spanish version to evaluate mental health and general functionality. The questionnaires of the second session included: i) The Memory Assessment Clinics Self-Rating Scale (MAC-S, Crook & Larrabee, 1990) and ii) The Autobiographical Memory Interview (AMI) Spanish version (Kopelman et al., 1989).

Following the questionnaires at sessions 1 and 2, participants performed either Experiment 1 or Experiment 2, in a counterbalanced manner. The duration of each session was 75 minutes total, with 5-minute breaks every 20 minutes. However, this organization was adapted in the second study, as fatigue from each subject necessitated individualized time adjustments, with a total of 90 minutes not exceeding the evaluation time for any participant.

Data Analysis Procedure

In the first study, for specific aim (1), we used means and standard deviations to describe the cognitive performance and sociodemographic profile of the group. For specific aim (2) we used as an index of overall recognition accuracy in the experimental task the probability of recognition (Pr) scores obtained by subtracting the proportion of false alarms (i.e., new items incorrectly accepted as old) from the proportion of hits (i.e., old items correctly accepted as old) in each condition (Kamp et al., 2018). To compare Pr scores between single-item and paired conditions, we used either paired t-tests or the Wilcoxon signed-rank test when the data were not normally distributed (Rosner, 2015).

For specific aim (3), the familiarity and recollection estimates were computed using the confidence estimate (high, medium, and low) associated with the judgment of "old" or "new" to plot ROC curves that were fitted to the dual-process signal detection model for each participant's data (Yonelinas & Park, 2007). These curves were generated by plotting hits against false alarms as a function of response confidence. Recollection estimates were measured as the y-intercept, and familiarity was measured as the degree of curvilinearity of the function, which has been shown to be a robust index of these memory subprocesses (Yonelinas et al., 2010). These parameters were calculated using the ROC Toolbox, which is freely available as a MATLAB toolbox (Koen et al., 2017). Because some participants showed performance ceiling effects, which makes it difficult to compute the recollection and familiarity estimates, we excluded outlier measurements following the interquartile range (IQR) method (Kassambara, 2023). Thus, recollection scores between 0 and 1 and familiarity

scores above 0 were included in the analyses (Park & Yonelinas, 2015). All analyses, except those related to ROC curves and their respective parameters, were performed using R Statistical Software (version 4.1.2; R Core Team, 2021).

In the second study, regarding specific aim (1), we used means and standard deviations to describe the differences in demographic, clinical, neurocognitive, and autobiographical memory performance between both groups. To analyze the differences, we used Student t-tests for independent samples, except for the sex variable, for which we used the χ^2 test. Regarding specific aim (2), we employed mixed-effects ANOVA to analyze the recognition scores in both relational and self-referential contexts. A 2×2 repeated measures ANOVA was performed, with group as a between-subjects factor and encoding condition as a within-subjects factor, to compare groups on the Pr score. Regarding specific aim (3), familiarity and recollection-based recognition estimates were calculated by using the confidence judgment ratings of “old” or “new” answers to plot ROC curves. These curves were generated by plotting hits against false alarms as a function of response confidence. Recollection estimates will be measured as the y-intercept, and familiarity will be measured as the degree of curvilinearity of the function. With the recollection and familiarity estimates, we also used mixed ANOVA to analyze the differences between the groups in each parameter separately. As the between-subject factor, we used the group factor, and as the within-subject factor, we used the recognition condition (i.e., single vs paired condition). This analysis was initially performed for the relationally modified task and subsequently for the self-referential memory task. Post hoc comparisons using the Bonferroni correction are reported where appropriate.

Regarding specific aim (4) to examine the relationship between the performances of relational and self-referential memory performance with the characteristics of AMs retrieved

in people with schizophrenia and controls, correlations between AM subscales and different variables were conducted in the total sample. The variables included a) Memory Index Scale, b) CORE-OM functionality, c) Self-referential performance, d) Relational memory performance, e) AM performance f) Subjective memory performance. Finally, hierarchical regression analyses were conducted to examine the predictive value of the two interested predictors (RM performance and SRM performance) for AM performance, while controlling for possible confounding variables (age and group condition).

VI-RESULTS

STUDY 1

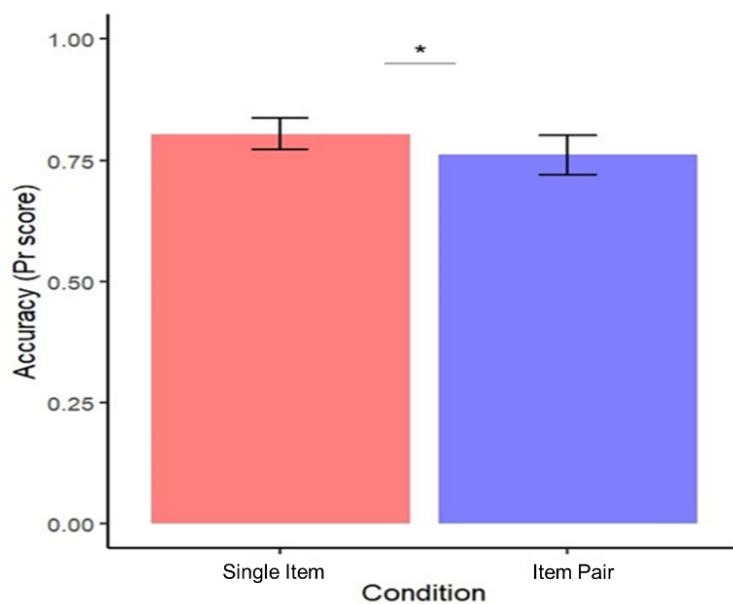
Experiment 1

General Recognition Accuracy (Pr)

As can be seen in Figure 6, recognition accuracy (Pr) was significantly higher for the single-item condition compared to the paired condition ($M_{\text{single}} = 0.80 \pm 0.12$; $M_{\text{paired}} = 0.76 \pm 0.15$; $t(53) = -2.6$; $p = 0.01$; CI 95% [-0.08 - -0.009]).

Figure 6

Experiment 1 Pr Scores



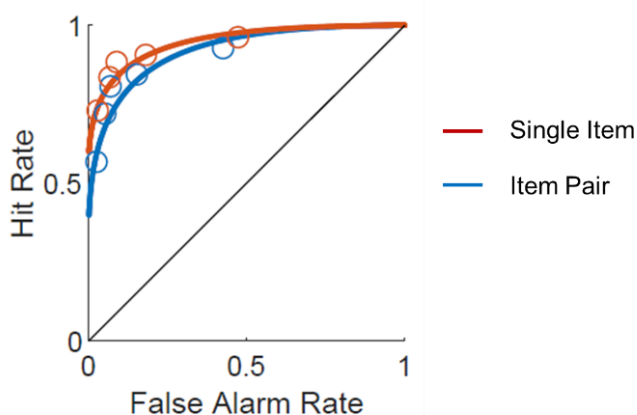
Note. Mean recognition accuracy (Pr score) was better for the single item (red) vs. paired stimuli (blue). Memory was better for the single-item condition. Error bars represent 95% confidence intervals. * $p < 0.05$.

Dual-Process Recognition Memory: Recollection and Familiarity

For this analysis, the examination of the parameter estimates showed 4 subjects with outlier values. These outliers were removed, leaving a final sample of 50 subjects. As shown in Figure 7, the cumulative ROC recognition curves for the single-item and paired conditions, plotted in probability space, illustrate better accuracy performance for the single-item condition.

Figure 7

Experiment 1 ROC curves



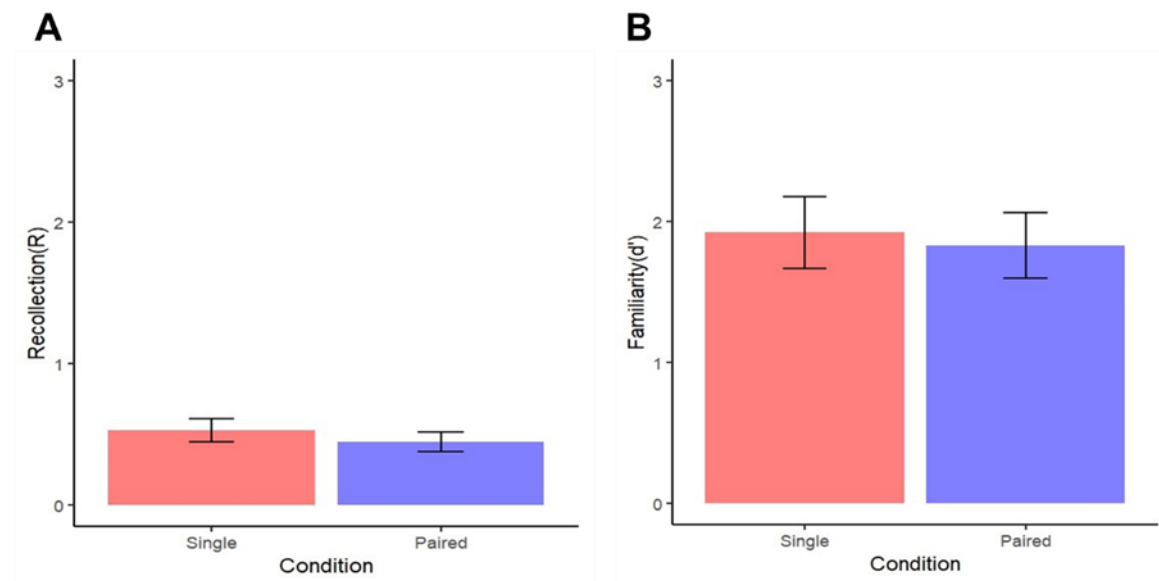
Note. Receiver operating characteristic (ROC) curves reveal better performance for the single-item condition (red) compared to the paired condition (blue).

As shown in Figure 8.A, recollection was higher for the single-item (0.53 ± 0.29) versus the paired condition (0.45 ± 0.25), but the statistical analysis showed no differences between them ($t(49) = -1.7, p = 0.09$; CI 95% [-0.18 - 0.015]). As shown in Figure 8.B, familiarity showed the same trend, being greater for the single-item (1.92 ± 0.90) versus the

paired condition (1.83 ± 0.83), but no statistical differences between them ($t(49) = -0.7, p = 0.5$; CI 95% [-0.36 - 0.18]).

Figure 8

Experiment 1 Parameters



Note. Mean recollection (A) and familiarity (B) for single-item (red) versus paired (blue) conditions. Error bars represent 95% confidence intervals. There was a higher recollection parameter estimate in the single-item versus the item-pair condition. However, there was no statistically significant difference between the conditions for each parameter.

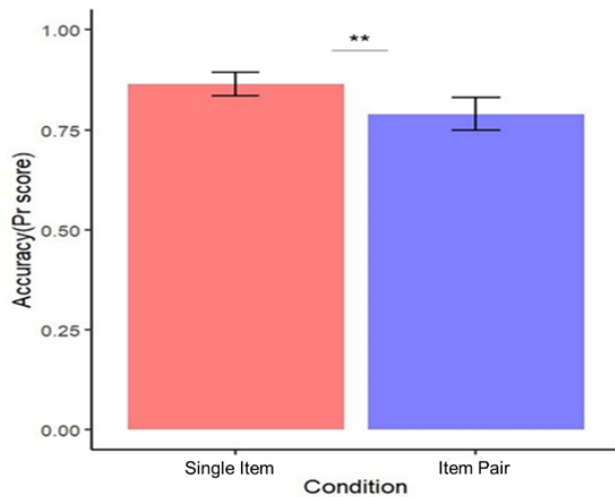
Experiment 2

General Recognition Accuracy (Pr)

As shown in Figure 9, performance in recognition accuracy (Pr) was higher for the single-item condition compared to the paired condition, with statistically significant differences between them (single-item = 0.88 ± 0.09 ; paired = 0.81 ± 0.12 ; $t(53) = 3.0$; $p < 0.01$; CI 95% [-0.02 - 0.12]).

Figure 9

Experiment 2 Combined Pr Scores



Note. Performance in recognition accuracy (Pr ; hit rate – false alarm rate) for the single-item condition (red) and the paired condition (blue). Performance was better for the single-item condition compared to the paired condition. Error bars represent 95% confidence intervals. ** $p < 0.01$.

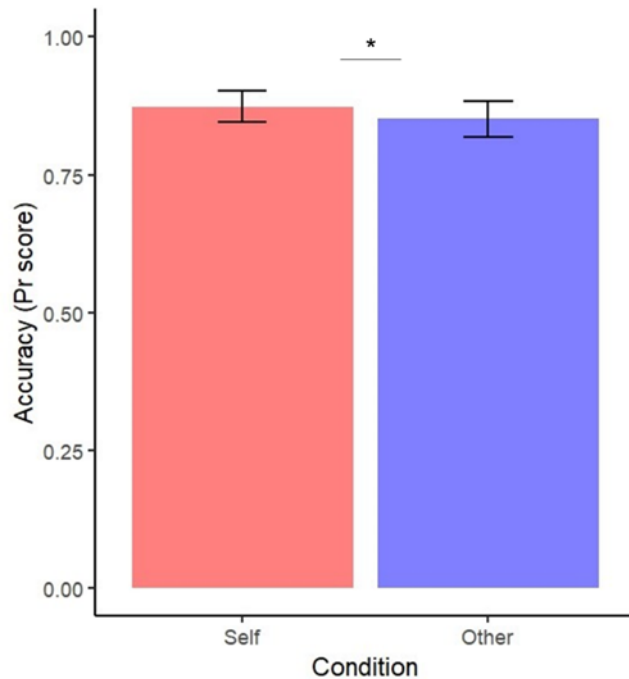
Self-referential Memory: Single-Item Condition General Recognition Accuracy

As can be seen in Figure 10, performance in recognition accuracy (Pr) was significantly greater for the self-referential condition (0.87 ± 0.11) compared to the other-

referential condition (0.85 ± 0.13 ; $t(53) = -2.2$, $p < 0.05$; CI 95% [-0.04 - 0.002]). Thus, these results replicate the well-known *self-reference effect on memory*.

Figure 10

Experiment 2 Single Item Pr Scores



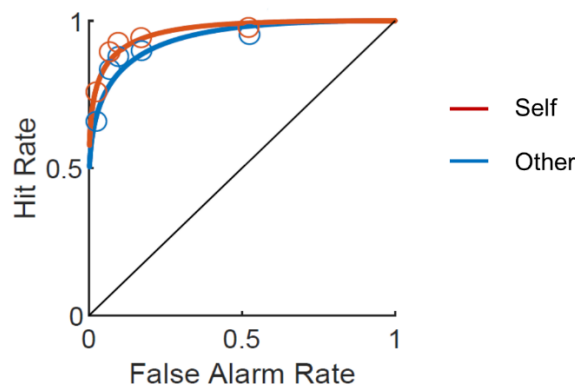
Note. Performance in recognition accuracy (Pr) for single-item stimuli, for self-referential (red) and other-referential (blue) conditions. Performance was better for the self-referential condition, i.e., the *self-reference effect*. Error bars represent 95% confidence intervals. * $p < 0.05$.

Self-Referential Memory: Single-Item Condition Recollection and Familiarity

In this section, the analysis of the parameter estimates revealed outlier values for 20 participants, resulting in a final sample of 34 subjects. As shown in Figure 11, the ROC analysis of the single-item condition data revealed better recognition memory for self-referential stimuli compared to other-referential stimuli, thereby replicating the well-known *self-reference effect*. Regarding recollection, there were no statistically significant differences between the self-referential condition (0.46 ± 0.35) and the other-referential condition (0.48 ± 0.32 ; $V = 188$, $p = 0.8$; Figure 12.A). On the other hand, familiarity was significantly higher for the self-referential condition (2.63 ± 1.37) compared to the other-referential condition (1.99 ± 0.87 ; $V = 126$, $p < 0.01$; Figure 12.B). Thus, these results suggest that the self-reference memory effect for single items relies on familiarity rather than on recollection.

Figure 11

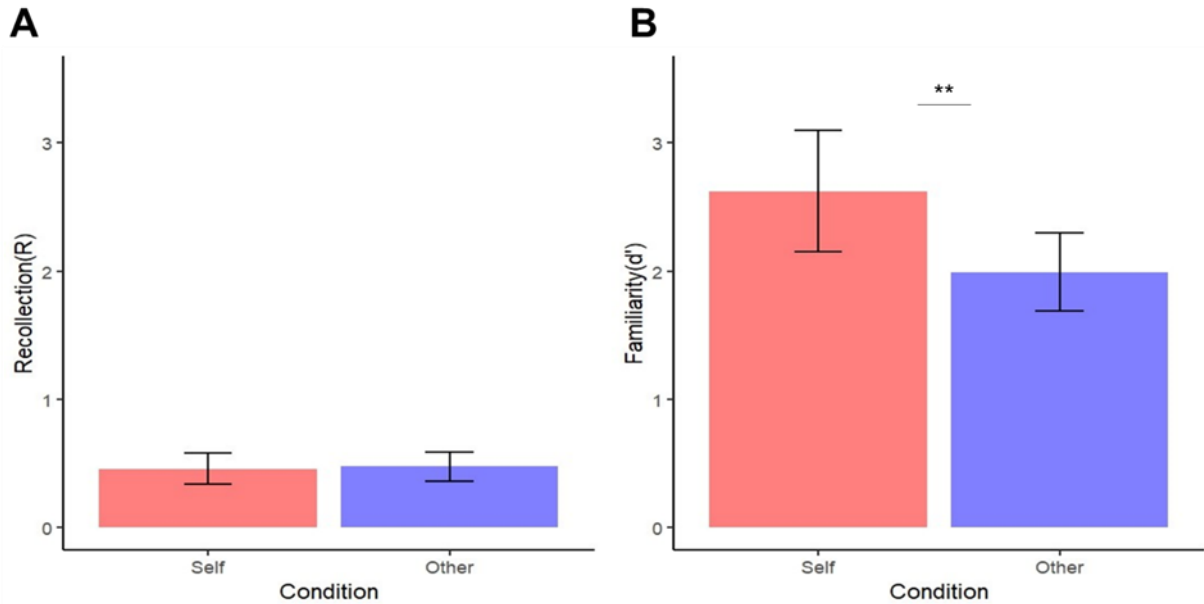
Experiment 2 Single Item ROC Curves



Note. Single-item recognition memory ROC curves for self-referential (red) and other-referential (blue) conditions. Performance was better for the self-referential condition, i.e., the *self-reference effect*.

Figure 12

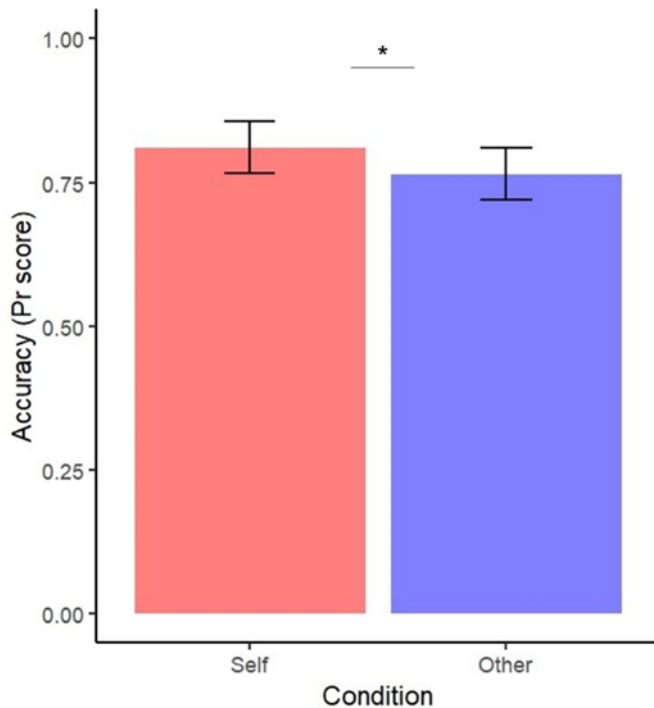
Experiment 2 Single Item Parameters



Note. Mean recollection (A) and familiarity (B) for self-referential (red) and other-referential (blue) conditions in the single item task. Familiarity was significantly greater for the self-referential condition compared to the other-referential condition, suggesting that the self-reference memory effect relies on familiarity rather than on recollection. Error bars represent 95% confidence intervals. ** $p < 0.01$.

Self-Referential Memory: Paired Condition General Recognition Accuracy

In the paired recognition context, performance was better for the self-referential condition (0.81 ± 0.17) compared to the other-referential condition (0.76 ± 0.17 ; $t(53) = -2.5$; $p < 0.05$; CI 95% [-0.08 - 0.009]; Figure 13). Thus, the *self-reference effect* was also present in the more complex paired recognition context.

Figure 13*Experiment 2 Item Pair Pr Scores*

Note. Performance in recognition accuracy (Pr) for paired stimuli, for self-referential (red) and other-referential (blue) conditions. Performance was better for the self-referential condition, i.e., the *self-reference effect*. Error bars represent 95% confidence intervals. * $p < 0.05$.

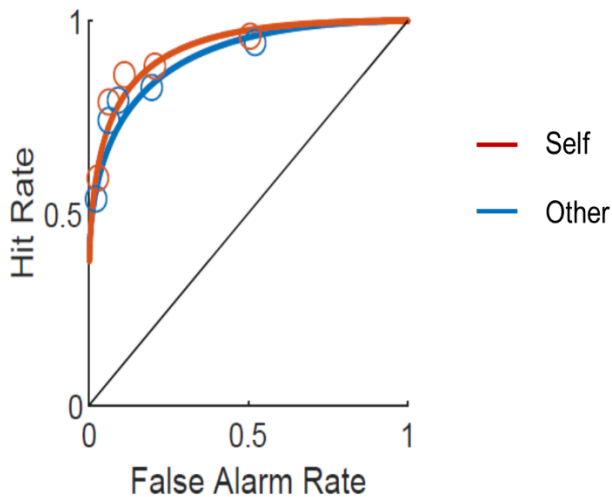
Self-Referential Memory: Paired Condition Recollection and Familiarity

The examination of the parameter estimates revealed outlier values for 10 subjects; thus, the data from 44 participants were included in the final analysis. As depicted in Figure 14, the ROC analysis of the paired condition data revealed better recognition memory for self-referential stimuli compared to other-referential stimuli, indicating the *self-reference effect* for

paired stimuli. There were no differences in recollection between the other-referential condition (0.41 ± 0.34) and the self-referential condition (0.41 ± 0.31 ; $t(43) = 0.06$; $p = 1$; CI 95% [-0.13 - 0.15]; Figure 15.A). Familiarity was significantly higher for the self-referential condition (2.00 ± 0.92) compared to the other-referential condition (1.58 ± 0.85 ; $t(43) = -2.7$; $p = 0.01$; CI 95% [-0.75 - 0.10]; Figure 15.B). Thus, in line with the results from the single-item condition, these results suggest that the self-reference effect relies on familiarity rather than on recollection.

Figure 14

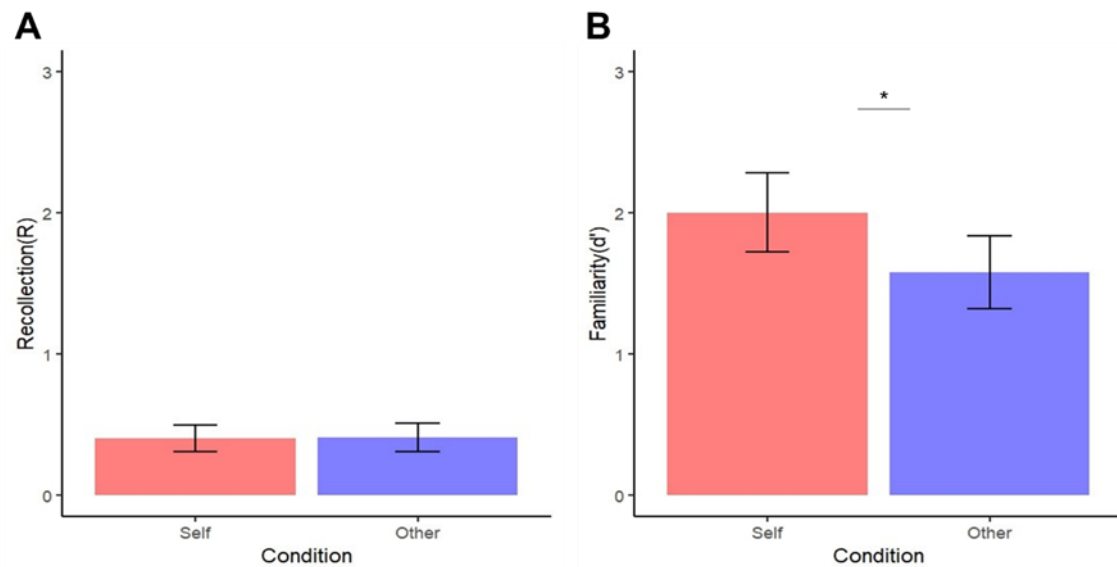
Experiment 2 Item Pair ROC Curves



Note. Recognition memory ROC curves for the paired context, self-referential (red) and other-referential conditions. Performance was better for the self-referential condition, i.e., the *self-reference effect*.

Figure 15

Experiment 2 Item Pair Parameters



Note. Mean recollection (A) and familiarity (B) for self-referential (red) and other-referential (blue) conditions in the paired stimuli task. Familiarity was significantly greater for the self-referential condition compared to the other-referential condition, suggesting that the self-reference memory effect relies on familiarity rather than on recollection. Error bars represent 95% confidence intervals. * $p < 0.05$.

Study 2

Experiment 1

Table 3 and Figure 16 show the behavioral results from Experiment 1.

Table 3*Means(±SD) of the Behavioral Data from the Test Phases of Experiment 1*

Measure	Experiment 1			
	Healthy Controls		SZ Patients	
	Single Item	Item Pair	Single Item	Item Pair
Pr score	0.72 (0.14)	0.65 (0.16)	0.52 (0.18)	0.37 (0.24)
Recollection(R)	0.41 (0.28)	0.37 (0.25)	0.29 (0.23)	0.18 (0.20)
Familiarity (d')	1.64 (0.52)	1.44 (0.55)	0.83 (0.40)	0.51 (0.43)

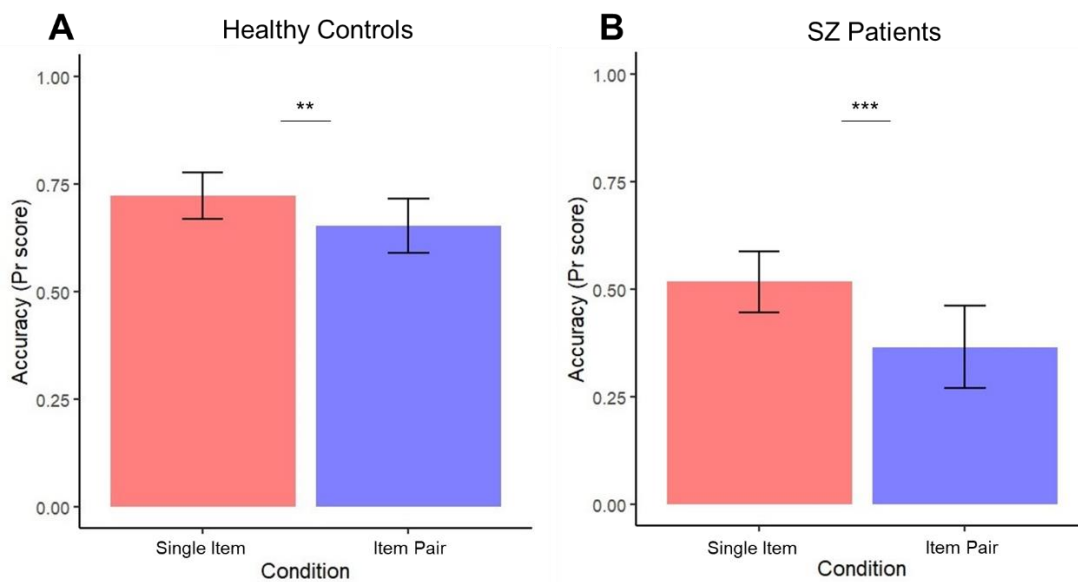
General Recognition Accuracy (Pr)

A 2×2 mixed-design ANOVA was conducted on recognition accuracy (Pr score), with condition (single vs paired) as a within-subjects factor and group (SZ vs controls) as the between-subjects factor. There was a significant main effect of group on recognition accuracy, $F(1, 52) = 28.91, p < 0.001, \eta^2 = 0.320$, indicating that controls outperformed patients overall. There was also a significant main effect of condition, $F(1, 52) = 32.11, p < 0.001, \eta^2 = 0.086$, with better performance in the single item condition than in the item pair condition. The interaction between group and condition was also significant, $F(1, 52) = 4.43, p = 0.040, \eta^2 = 0.013$.

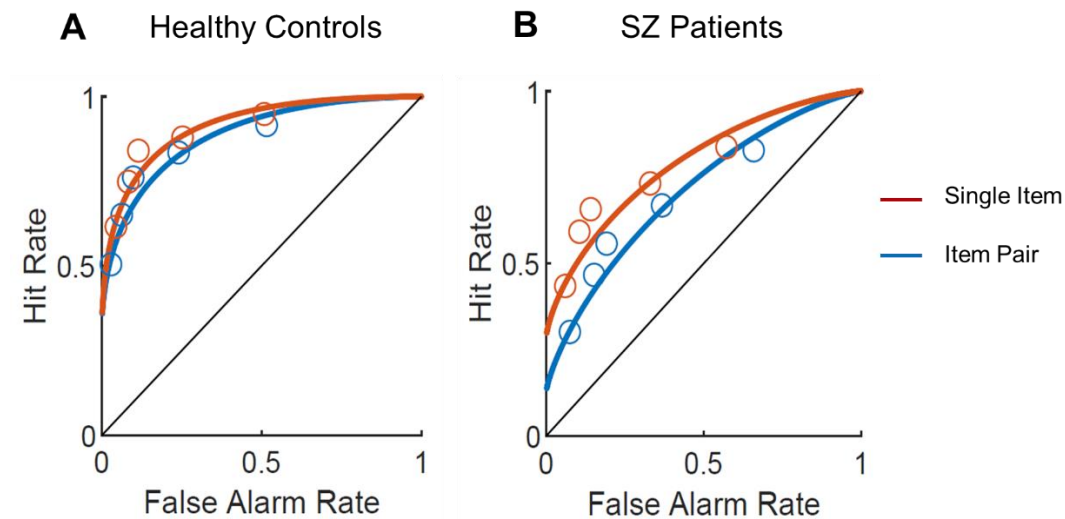
Post hoc comparisons using the Bonferroni correction indicated that controls outperformed patients both in the item pair condition ($M_{\text{controls}} = 0.653$, $SD = 0.159$; $M_{\text{patients}} = 0.366$, $SD = 0.240$), $F(1,52) = 26.8$, $p < 0.001$ and in the single item condition ($M_{\text{controls}} = 0.722$, $SD = 0.135$; $M_{\text{patients}} = 0.517$, $SD = 0.180$), $F(1,52) = 22.5$, $p < 0.001$. Additionally, within-group comparisons revealed that both patients and controls performed significantly better in the single-item condition than in the item-pair condition: $F(1,26) = 22.2$, $p < 0.001$ for patients, and $F(1,26) = 9.89$, $p = 0.003$ for controls.

Figure 16

Experiment 1 Pr Scores



Note. Mean recognition accuracy (Pr score) was better for healthy controls (panel A) compared to the SZ group (panel B). In both groups, performance was better for the single item stimuli (red) compared to the item pair stimuli (blue). Error bars represent 95% confidence intervals.

Figure 17*Experiment 1 ROC curves*

Note. Receiver operating characteristic (ROC) curves reveal better performance for healthy controls (panel A) compared to the SZ group (panel B). Furthermore, in both groups, the curves reveal better performance for the single-item condition (red) compared to the paired condition (blue). For illustrative purposes, the ROC curves have been generated at the group level.

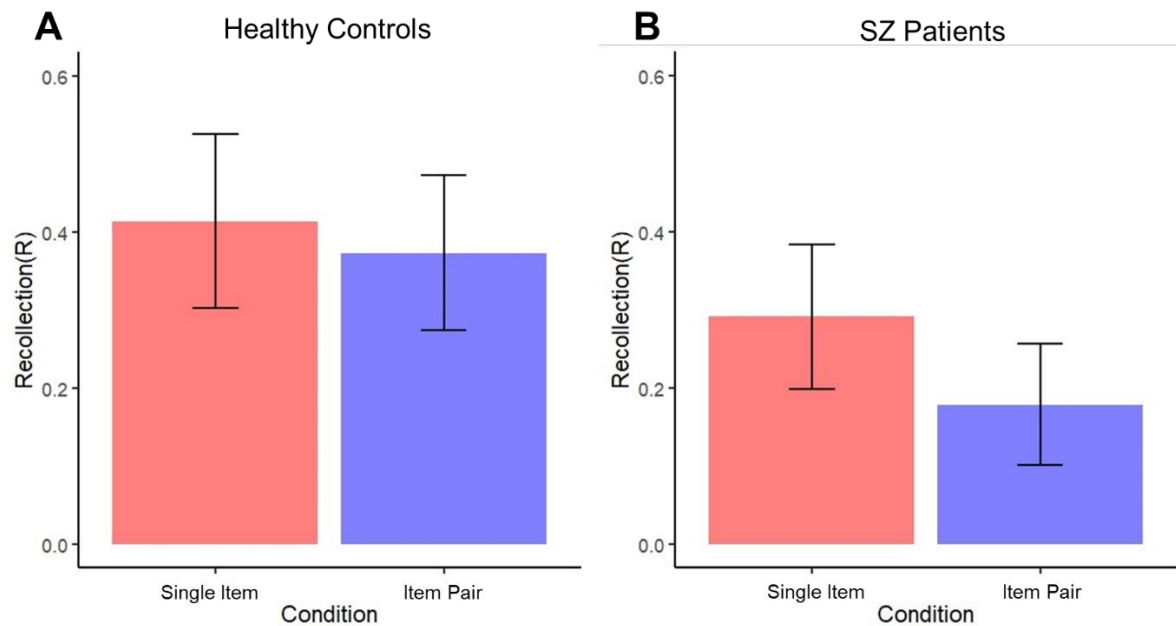
Dual-Process Recognition Memory: Recollection and Familiarity

A 2×2 mixed-design ANOVA was conducted on recollection scores with condition (single item vs item pair) as a within-subjects factor and group (SZ vs controls) as the between-subjects factor (Figure 18). The main effect of group was significant, $F(1, 52) = 9.22, p = 0.004, \eta^2 = 0.1$, indicating that controls had significantly higher recollection scores than patients, averaged across both conditions. The main effect of condition was not

statistically significant, $F(1, 52) = 3.65$, $p = 0.062$, $\eta^2 = 0.026$, although there was a trend toward higher scores in the single item condition compared to the item pair condition. The Group \times Condition interaction was not significant, $F(1, 52) = 0.81$, $p = 0.374$, $\eta^2 = 0.006$, indicating that the effect of group on recollection did not differ between conditions.

Figure 18

Experiment 1 Recollection Parameter



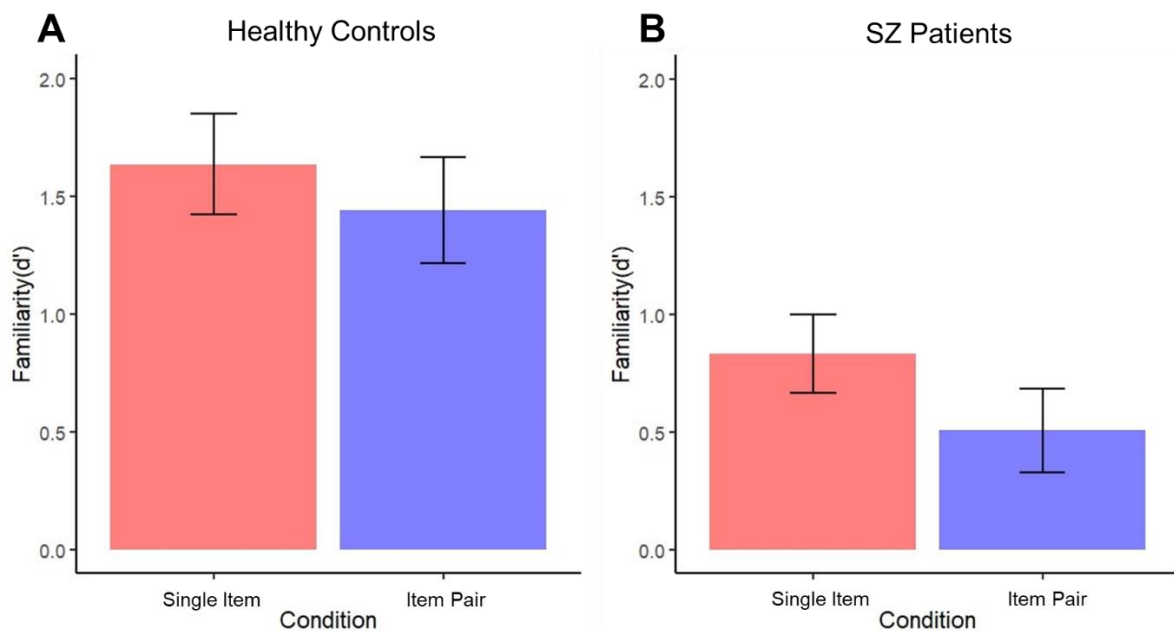
Note. Recollection scores were better for the controls (panel A) compared to the patients (panel B). In both groups, recollection was better for the single-item (red) stimuli compared to the item-pair stimuli (blue); however, this difference was not statistically significant. Error bars represent 95% confidence intervals.

For the familiarity parameter analysis (Figure 19), the examination of the parameter estimates showed 4 subjects with outlier values. These outliers were removed, leaving a final

sample of 50 subjects. A 2×2 mixed-design ANOVA was conducted on familiarity scores with condition (single item vs item pair) as a within-subjects factor and group (SZ vs controls) as the between-subjects factor. The analysis revealed a significant main effect of Group, $F(1, 48) = 55.94, p < 0.001, \eta^2 = 0.464$, indicating that controls had significantly higher familiarity scores than patients ($M = 0.67, SD = 0.415$) across both conditions. There was also a significant main effect of Condition, $F(1, 48) = 14.33, p < 0.001, \eta^2 = 0.072$, with higher familiarity scores in the single item condition than in the item pair condition. However, the Group \times Condition interaction was not significant, $F(1, 48) = 0.90, p = 0.347, \eta^2 = 0.005$, indicating that the effect of condition on familiarity did not differ between groups.

Figure 19

Experiment 1 Familiarity Parameter



Note. Familiarity scores were higher for controls (panel A) compared to patients (panel B). In both groups, familiarity was higher for the single item (red) compared to the item pair stimuli (blue). Error bars represent 95% confidence intervals.

Experiment 2

Table 4 and Figure 20 show the behavioral results from Experiment 2 in the single item context.

Self-Referential Memory: Single-Item Condition General Recognition Accuracy

Table 4

Means(\pm SD) of the Behavioral Data from the Single Items Test Phases of Experiment 2

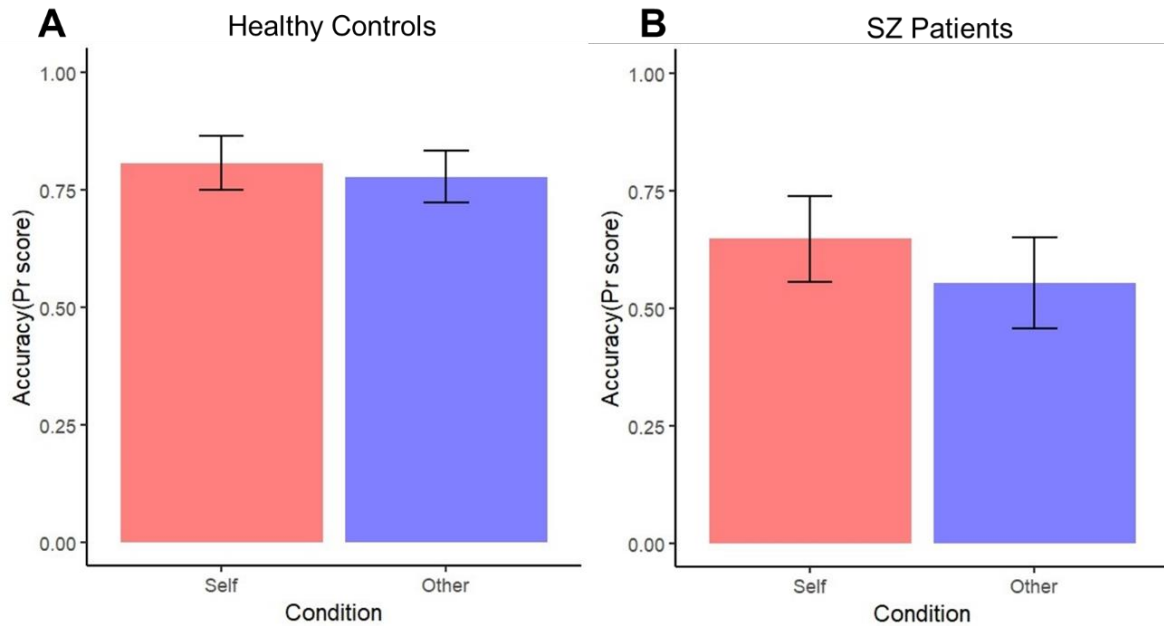
Measure	Experiment 2			
	Healthy Controls		SZ Patients	
	Self	Other	Self	Other
Pr score	0.81 (0.15)	0.79 (0.14)	0.70 (0.17)	0.67 (0.20)
Recollection(R)	0.40 (0.32)	0.27 (0.29)	0.37 (0.29)	0.31 (0.27)

Familiarity (d')	2.26 (1.36)	2.07 (0.84)	1.32 (0.73)	1.26 (0.91)
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For this analysis, the examination of the parameter estimates showed 3 subjects with outlier values. These outliers were removed, leaving a final sample of 51 subjects. A 2×2 mixed-design ANOVA was conducted on recognition accuracy (Pr score), with condition (self vs other) as a within-subjects factor and group (SZ vs controls) as the between-subjects. There was a significant main effect of Group, $F(1, 49) = 6.82, p = 0.012, \eta^2 = 0.107$, indicating that controls showed higher accuracy than patients across both conditions. The main effect of Condition was not significant, $F(1, 49) = 1.84, p = 0.181, \eta^2 = 0.006$, and neither was the Group \times Condition interaction, $F(1, 49) = 0.15, p = 0.700, \eta^2 = 0.0004$. This suggests that recognition accuracy did not differ significantly between the Self and Other conditions, nor did the difference between conditions vary by group.

Figure 20

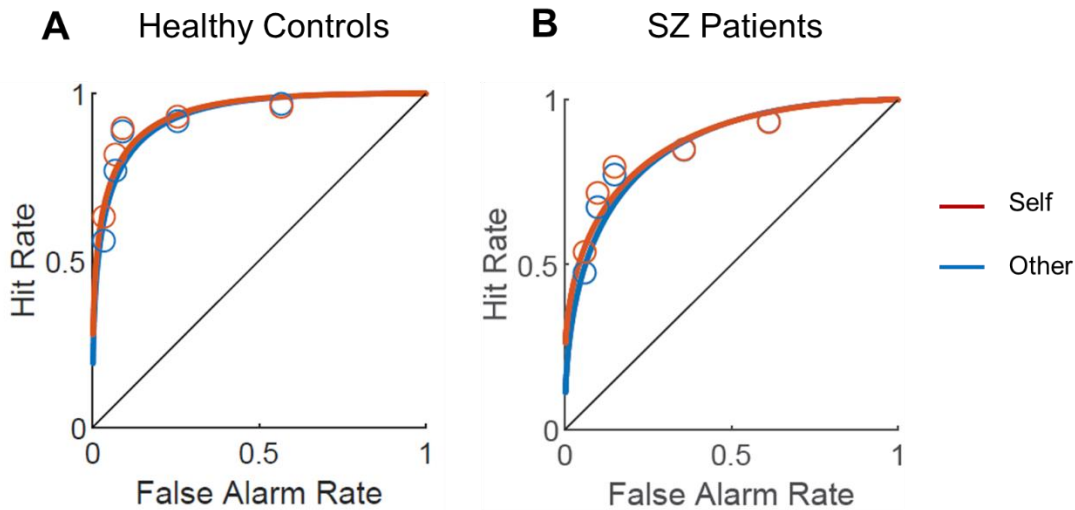
Experiment 2 Single Item Pr Scores



Note. Mean recognition accuracy (Pr score) was better for healthy controls (panel A) compared to the SZ group (panel B). In both groups, performance was better for the self (red) condition compared to the other (blue) condition; however, this difference was not statistically significant. Error bars represent 95% confidence intervals.

Figure 21

Experiment 2 Single Item ROC Curves



Note. Receiver operating characteristic (ROC) curves reveal better performance for controls versus patients, but do not reveal any difference between self and other conditions. For illustrative purposes, the ROC curves have been generated at the group level.

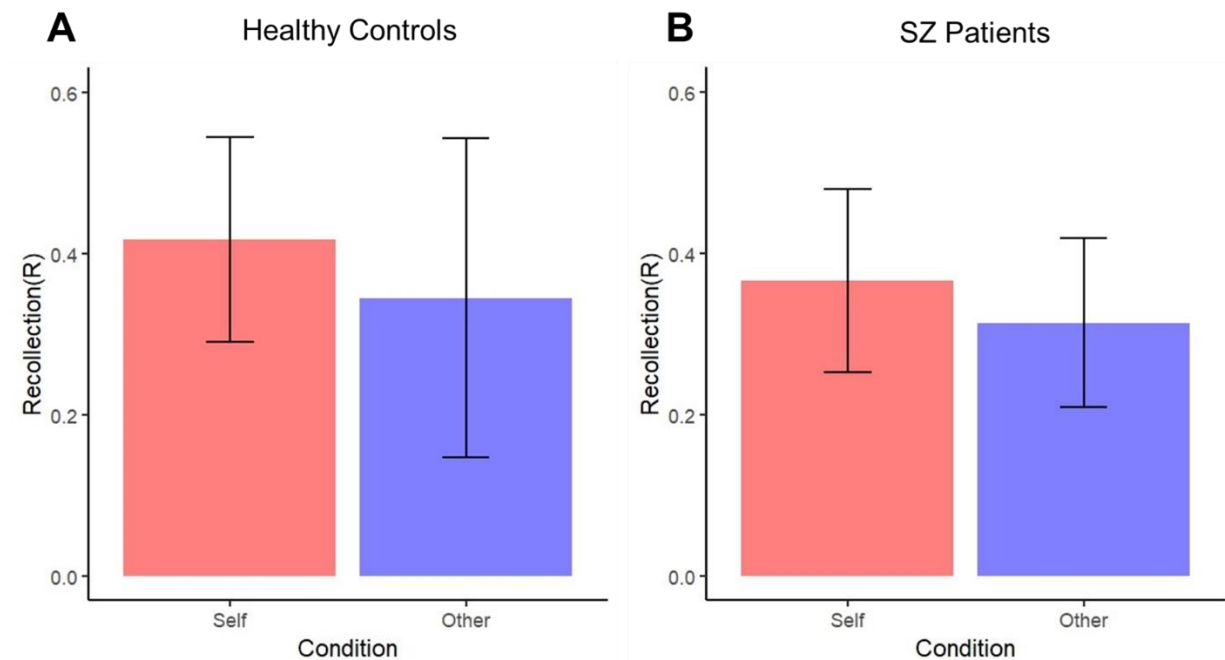
Dual-Process Recognition Memory: Recollection and Familiarity

For this analysis, the examination of the recollection parameter estimates showed 1 subject with outlier values (Figure 22). This outlier was removed, leaving a final sample of 53 subjects. A 2×2 mixed-design ANOVA was conducted on recollection scores with condition (self vs other) as a within-subjects factor and group (SZ vs controls) as the between-subjects factor. There was no significant main effect of Group, $F(1, 51) = 0.009$, $p = 0.927$, $\eta^2 < 0.001$, indicating that recollection did not differ significantly between patients and controls. A significant main effect of Condition was found, $F(1, 51) = 6.84$, $p = 0.012$, $\eta^2 = 0.027$, indicating that recollection was higher in the Self condition compared to the other condition. The Group \times Condition interaction was not significant, $F(1, 51) = 1.39$, $p = 0.244$, $\eta^2 = 0.006$,

indicating that the effect of condition on recollection did not differ significantly between groups.

Figure 22

Experiment 2 Single Item Recollection Parameter



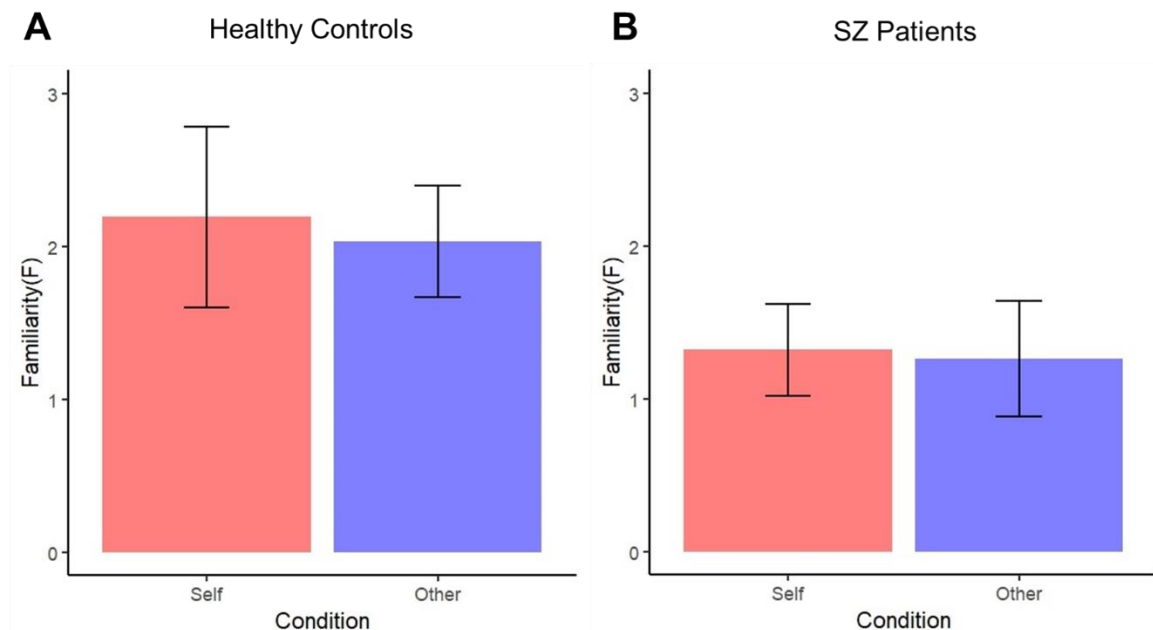
Note. Recollection scores didn't have any difference between controls (panel A) vs. patients (panel B). In both groups, recollection was better for the self (red) vs. the other (blue) condition. Error bars represent 95% confidence intervals.

For the familiarity analysis (Figure 23), the examination of the parameter estimates showed 7 subjects with outlier values. This outlier was removed, leaving a final sample of 47 subjects. A 2×2 mixed-design ANOVA was conducted on familiarity scores with condition (self vs other) as a within-subjects factor and group (SZ vs controls) as the between-subjects factor. The analysis revealed a significant main effect of Group, $F(1, 45) = 14.20, p < 0.001$,

$\eta^2 = 0.172$, indicating that controls reported significantly higher familiarity scores than patients overall. The main effect of Condition was not significant, $F(1, 45) = 0.54$, $p = 0.467$, $\eta^2 = 0.004$, suggesting no significant difference between the Self and Other conditions. The Group \times Condition interaction was also not significant, $F(1, 45) = 0.14$, $p = 0.711$, $\eta^2 = 0.001$, indicating that the effect of condition on familiarity did not differ significantly between groups.

Figure 23

Experiment 2 Single Item Familiarity Parameter



Note. Familiarity scores were higher for controls (panel A) compared to patients (panel B). In both groups, familiarity was better for the self (red) stimuli compared to the other condition (blue); however, this difference was not statistically significant. Error bars represent 95% confidence intervals.

Self-referential Memory: Item Pair Condition General Recognition Accuracy

Table 5 and Figure 24 show the behavioral results from Experiment 2 in the item pair context.

Table 5

Means (\pm SD) of the Behavioral Data from the Items Pair Test Phases of Experiment 2

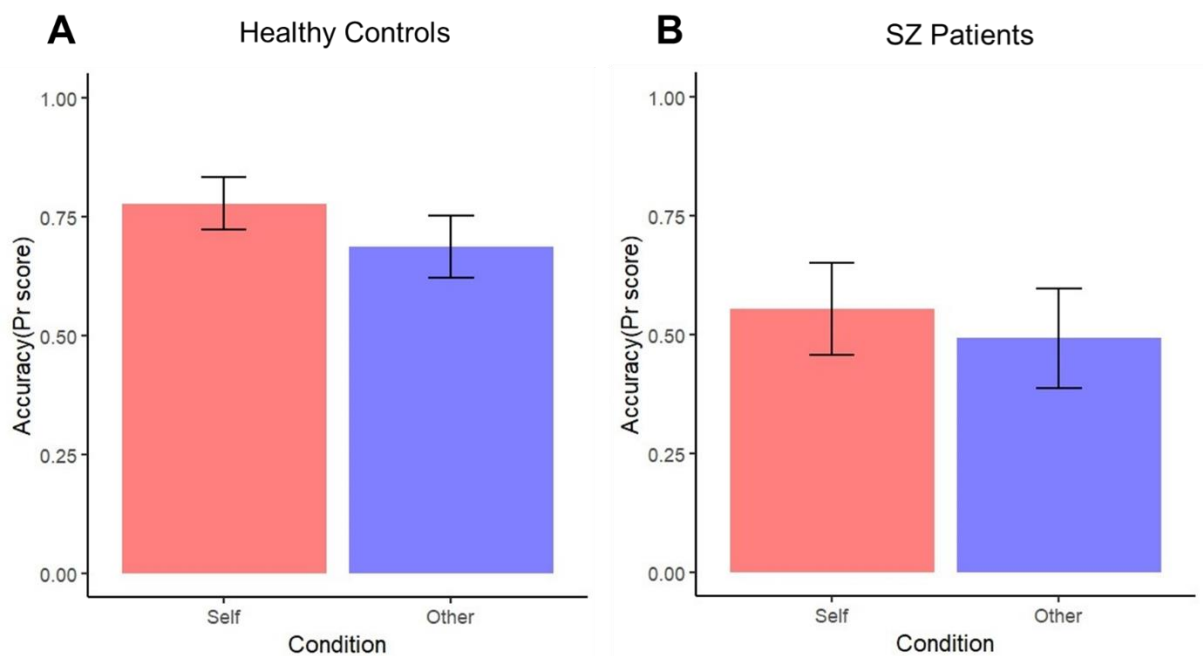
Measure	Experiment 2			
	Healthy Controls		SZ Patients	
	Self	Other	Self	Other
Pr score	0.72 (0.14)	0.69 (0.16)	0.55 (0.24)	0.49 (0.26)
Recollection(R)	0.34 (0.30)	0.20 (0.20)	0.25 (0.18)	0.23 (0.20)
Familiarity (d')	1.84 (0.80)	1.62 (0.57)	1.11 (0.56)	0.98 (0.70)

A 2×2 mixed-design ANOVA was conducted on recognition accuracy (Pr score), with condition (self vs other) as a within-subjects factor and group (SZ vs controls) as the between-subjects. The analysis revealed a significant main effect of Group, $F(1, 52) = 14.83$, $p < 0.001$, $\eta^2 = 0.205$, indicating that the controls outperformed the patients overall. There was also a significant main effect of Condition, $F(1, 52) = 18.85$, $p < 0.001$, $\eta^2 = 0.033$, indicating that recognition accuracy was higher in the Self condition than in the Other condition. The

Group \times Condition interaction was not significant, $F(1, 52) = 0.69$, $p = 0.410$, $\eta^2 = 0.001$, indicating that the effect of condition on recognition did not significantly differ between groups.

Figure 24

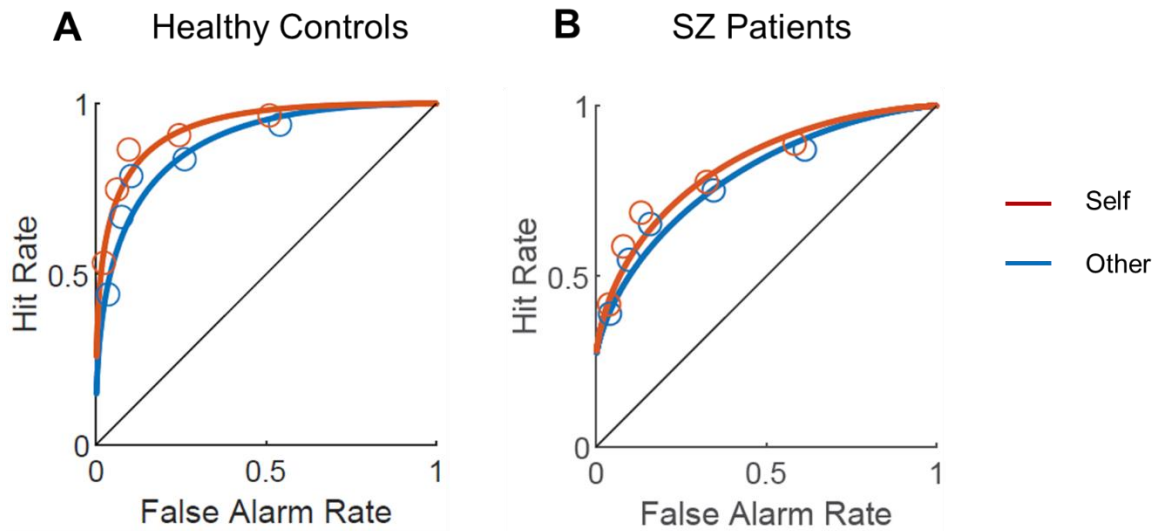
Experiment 2 Item Pair Pr Scores



Note. Mean recognition accuracy (Pr score) was better for healthy controls (panel A) compared to the SZ group (panel B). In both groups, performance was better in the self (red) condition compared to the other (blue) condition, reflecting the SRE. Error bars represent 95% confidence intervals.

Figure 25

Experiment 2 Item Pair ROC Curves



Note. ROC curves reveal better performance for controls (panel A) versus patients (panel B).

In both groups, the curves show better performance for the self versus the other condition. For illustrative purposes, the ROC curves have been generated at the group level.

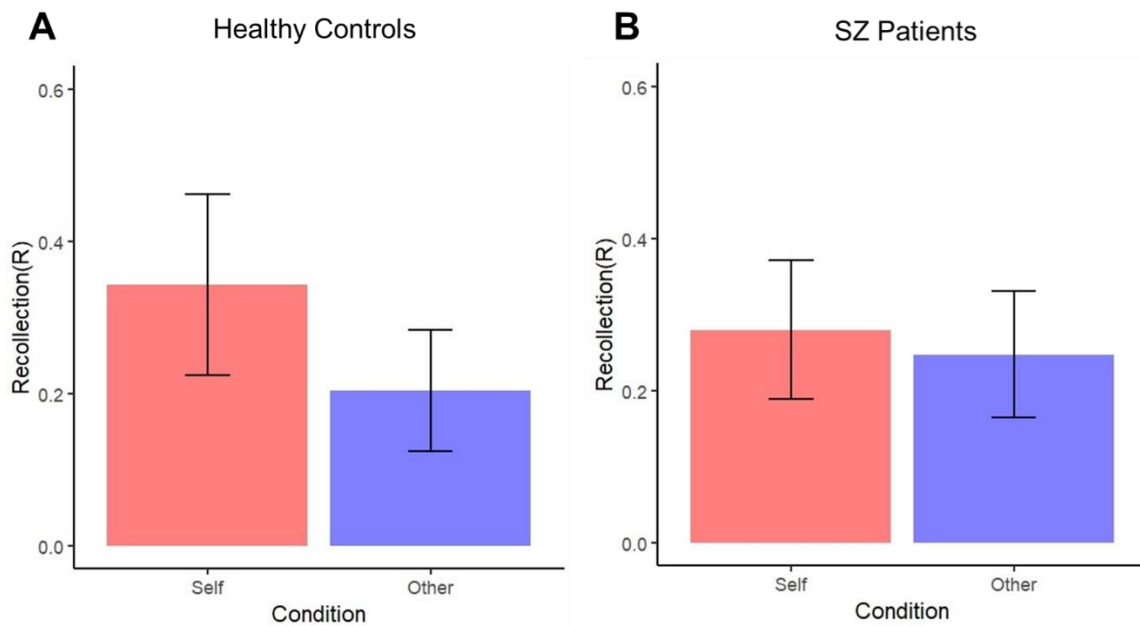
Dual-Process Recognition Memory: Recollection and Familiarity

For this analysis, the examination of the recollection parameter estimates (Figure 26) revealed three subjects with outlier values. This outlier was removed, leaving a final sample of 51 subjects. A 2×2 mixed-design ANOVA was conducted on recollection scores with condition (self vs other) as a within-subjects factor and group (SZ vs controls) as the between-subjects factor. The main effect of Group was not significant, $F(1, 49) = 0.44, p = 0.512, \eta^2 = 0.005$, indicating no overall difference in recollection between patients and controls. The main effect of Condition was not significant, $F(1, 49) = 3.48, p = 0.068, \eta^2 = 0.032$, suggesting only a trend toward higher recollection scores in the Self condition than in the Other condition.

The Group \times Condition interaction was not significant, $F(1, 49) = 2.02$, $p = 0.162$, $\eta^2 = 0.019$, indicating that the effect of condition on recollection did not differ between groups.

Figure 26

Experiment 2 Item Pair Recollection Parameter



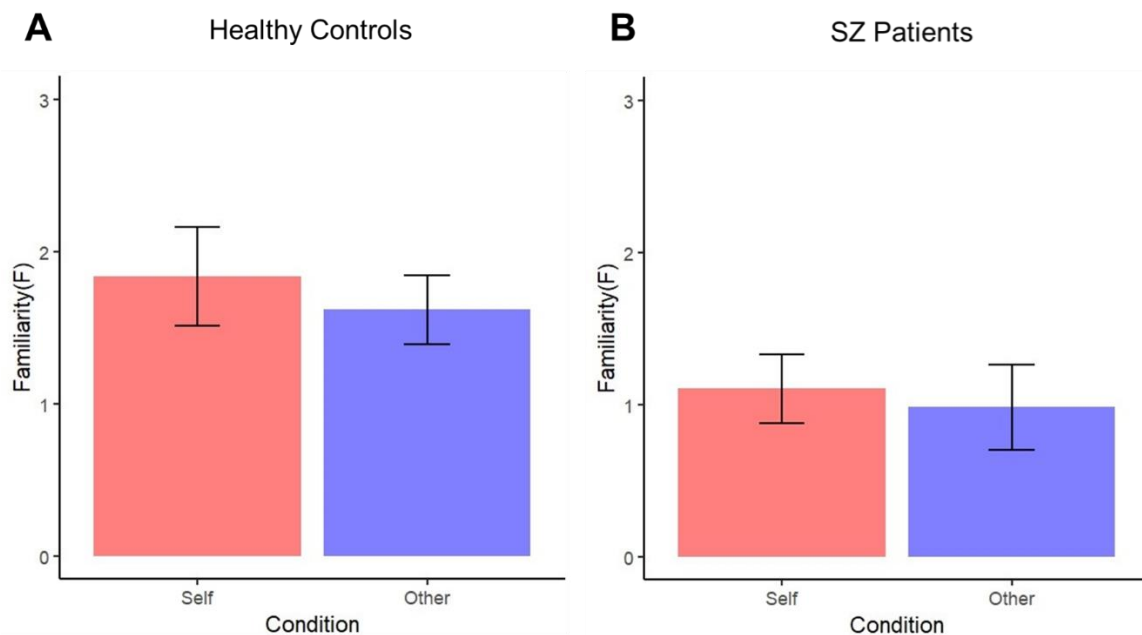
Note. Recollection scores were higher for the self condition in the healthy controls group; however, this was not statistically significant. In both groups, recollection was better for the self (red) than for the other (blue) condition; however, this difference was not statistically significant. Error bars represent 95% confidence intervals.

For the familiarity analysis (Figure 27), the examination of the parameter estimates showed 3 subjects with outlier values. This outlier was removed, leaving a final sample of 51 subjects. A 2×2 mixed-design ANOVA was conducted on familiarity scores with condition (self vs other) as a within-subjects factor and group (SZ vs controls) as the between-subjects

factor. There was a significant main effect of Group, $F(1, 50) = 18.82, p < 0.001, \eta^2 = 0.217$, indicating that controls reported significantly higher familiarity than patients overall. The main effect of Condition was not significant, $F(1, 50) = 3.27, p = 0.077, \eta^2 = 0.017$, suggesting only a trend toward higher familiarity in the Self condition ($M = 1.48, SD = 0.695$) compared to the Other condition ($M = 1.30, SD = 0.660$). The Group \times Condition interaction was not significant, $F(1, 50) = 0.27, p = 0.606, \eta^2 = 0.001$, indicating that the difference in familiarity between the two conditions did not vary significantly across groups.

Figure 27

Experiment 2 Item Pair Familiarity Parameter



Note. Familiarity scores were higher for controls (panel A) compared to patients (panel B). In both groups, familiarity was better for the self (red) stimuli compared to the other condition (blue); however, this difference was not statistically significant. Error bars represent 95% confidence intervals.

Regression Models

Table 6 presents a correlation matrix for all measurements conducted in the combined sample ($N = 54$). The following section provides a more detailed account of the most relevant correlations. The correlations between the AMI episodic component and the experimental memory measures relevant to our hypotheses are illustrated in Figure 28.

As shown in Table 6, a significant negative correlation was found between psychological distress (CORE-OM total) and the episodic/specific subscale of the MACs, $r = -.43, p < .01$, suggesting that higher scores in the MACs episodic/specific subscale (higher scores imply less subjective memory complaints) are associated with lower distress levels.

Autobiographical memory for episodic events (AMIEp total) was significantly and positively correlated with memory-based performance scores, including Single Pr score ($r = 0.39, p < 0.01$), Paired Pr score ($r = 0.44, p < 0.01$), and Self-referential Pr score ($r = 0.46, p < 0.001$). These results suggest that improved autobiographical episodic memory retrieval is associated with more accurate memory performance across various memory tasks.

In addition, the Paired Pr score was strongly associated with the Single Pr score ($r = 0.81, p < 0.001$) and the Self-projection Pr score ($r = 0.74, p < 0.001$), indicating a high degree of consistency across memory task conditions. The Self-projection Pr score was also significantly correlated with the Single Pr score, $r = 0.77, p < 0.001$.

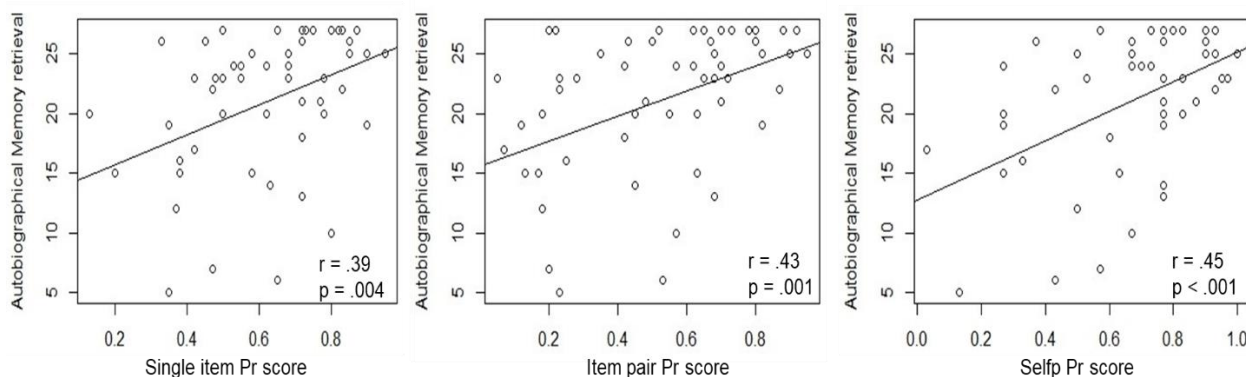
No significant associations were found between CORE-OM total scores and memory performance scores, suggesting that psychological distress levels did not directly relate to memory task accuracy in this sample.

Table 6*Correlation Matrix-Combined Groups (n=54)*

	1	2	3	4	5	6	7
1. Cf							
2. MACs ep/sp	-0.43**						
3. AMIep total	-0.16	0.21					
4. MIS	-0.1	0.15	0.18				
5. Single item Pr score	-0.02	0.06	0.39**	0.43**			
6. Item pair Pr score	-0.15	0.14	0.44**	0.39**	0.81***		
7. Selfp Pr score	-0.09	0.15	0.46***	0.22	0.77***	0.74***	

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$. Cf, Clinical Outcomes in Routine Evaluation-Outcome Measure functionality subscale. MACs ep/sp, Memory Assessment Clinics Self-Rating episodic and spatial subscale. AMIep total, Autobiographical Memory Interview episodic component. MIS, Memory Index Scale. Selfp, Self-referential item pair Pr score.

Figure 28*Scatterplots of Autobiographical Memory Predictors*



Note. Autobiographical Memory retrieval is predicted by measures of Single item, Item pair, and Selfp Pr score.

Hierarchical Linear Regression Models

Hierarchical linear regression was used to test our specific predictions regarding the relationship between AM retrieval and experimental memory measures.

Item Pair Recognition Accuracy as a Predictor of Autobiographical Memory Retrieval

A hierarchical linear regression was conducted to examine whether Item Pair recognition performance predicts autobiographical memory retrieval beyond age and diagnostic group (schizophrenia vs. control) (see Table 7). In Step 1, age and group were entered, explaining a significant proportion of variance in autobiographical memory retrieval, $R^2 = 0.18$. The group variable was a significant predictor, $\beta = 0.59$, $p < 0.001$, whereas age was not, $\beta = 0.05$, $p = \text{not significant (ns)}$.

In Step 2, Item Pair recognition was added to the model, resulting in a small, non-significant increase in explained variance, $\Delta R^2 = 0.03$, with a total R^2 of 0.21. In this final model, neither age ($\beta = 0.06$, $p = ns$) nor group ($\beta = 3.64$, $SE = 1.83$, $p = ns$) was a significant predictor, although Item Pair recognition approached significance ($\beta = 6.65$, $SE = 3.63$, $p = 0.075$). These results suggest a trend-level association between Item Pair recognition memory and autobiographical memory retrieval when age and group status are considered in explaining the variance.

Table 7

Item Pair Recognition as a Predictor of Autobiographical Memory Retrieval

Variable	β (SE)	R^2 Change	R^2 Total
Step 1		.18**	.18***
Age	.05(.08)		
Group1(Sz)	.59(1.52)***		
Step 2		.03	.21***
Age	.06(.07)		
Group1(Sz)	3.64(1.83)		
Item pair Pr score	6.65(3.63)		

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$. Group 1 (Sz), Group of schizophrenic patients.

Hierarchical regression models with different predictors of interest. SE = standard error.

Self-referential Recognition Accuracy as a Predictor of Autobiographical Memory

Retrieval

In a second hierarchical regression, self-referential recognition performance was included as a predictor (see Table 8). Step 1 included age and group, accounting for 18% of the variance ($R^2 = 0.18$). The group significantly predicted autobiographical memory retrieval ($\beta = 0.59, p < 0.001$), whereas age was not a significant predictor ($\beta = 0.05, p = \text{ns}$).

In Step 2, the addition of self-referential recognition significantly improved the model, with $\Delta R^2 = 0.05$ and a total R^2 of 0.23. In this final model, self-referential recognition emerged as a significant predictor ($\beta = 8.25, SE = 3.84, p < 0.05$), while group also remained significant ($\beta = 3.66, SE = 1.72, p < 0.05$), and age did not ($\beta = 0.01, p = \text{ns}$). These findings suggest that improved self-referential memory performance is associated with enhanced autobiographical memory retrieval, regardless of age or group status.

Table 8*Self-referential Recognition Accuracy as a Predictor of Autobiographical Memory Retrieval*

Variable	β (SE)	R ² Change	R ² Total
Step 1		.18**	.18***
Age	.05(.08)		
Group1(Sz)	.59(1.52)***		
Step 2		.05*	.23***
Age	.01(.08)		
Group1(Sz)	3.66(1.72)*		
Selfp Pr score	8.25(3.84)*		

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$. Group 1 (Sz), Group of schizophrenic patients. Self Pr score, Self-referential item pair Pr score. Hierarchical regression models with different predictors of interest. SE = standard error.

VII-DISCUSSION

Study 1

The present study revealed four key findings: i) recognition memory is better for single-item than for item pairs; ii) single-item recognition rely on recollection rather than on familiarity; iii) it is feasible to study the self-reference effect (SRE) using single and pairs of stimuli at the recognition phase; and iv) the SRE in the single item and the item pair conditions depends on familiarity rather than on recollection.

Our results indicate that the familiarity process underlies the performance improvement characteristic of the self-referential effect, suggesting that recollection may not be the only relevant recognition process in self-referential memory. It is well described in the literature that it is easier to recognize one's own face than that of others; this phenomenon has been termed the self-face advantage (Alzuet et al., 2019). Some authors explain this advantage based on a simple familiarity effect due to experience (Bortolon et al., 2018). This raises the possibility that in our task, the self-face advantage has enhanced the self-referential effect through a familiarity effect provided by one's own face. However, in the literature, there is no consensus regarding the self-face advantage, with some research showing no self-referential improvement (Bortolon & Raffard, 2018).

Another possibility to consider is the overall ease of our self-reference task in the single item and item pairs context. It is possible that the task was solved using only familiarity, with this process being sufficient to achieve the discriminations in our test, without the need for recruiting recollection (Bastin & Van der Linden, 2003).

Our results add to the large body of evidence that item recognition tasks are easier to perform than tasks that probe memory for associations between items or between items and

context features, replicating and extending research using different types of tasks (e.g. spatial location, item pairings, words, pictures) (Hockley & Cristi, 1996; Old & Naveh-Benjamin, 2008; Ratcliff & McKoon, 2015; Voorman et al., 2021). Our study demonstrates that it is feasible to investigate the self-referential effect using an experimental task involving faces and visual objects. A limited number of studies have used visual objects to evaluate the self-referential effect (Andrews et al., 2020; Cunningham et al., 2014; Lawrence & Chai, 2021). Only one of them has related objects to faces, with the photograph of oneself serving as the self-referential condition and that of another person serving as the other-referential condition (Andrews et al., 2020). In the latter, the population studied was children from 4 to 6 years of age. Therefore, to our knowledge, the present study is the first to study the self-referential effect via faces and object images in healthy young adults.

The evidence is even scarcer regarding the contribution of recollection and familiarity to self-referential processing tasks with visual objects. As mentioned before, prior research has focused on the RKN paradigm to study the SRE, with the typical finding showing that the SRE relies on recollection rather than familiarity (Lawrence & Chai, 2021; Conway et al., 2001). In a study comparing self-versus other encoding conditions using auditory stimuli (voices), Leynes et al. (2017) performed ROC analysis based on the DPSD model, concluding that recollection was involved in the SRE effect (Leynes et al., 2017). However, our study does not support the view that self-referential memory benefit is based on recollection. Instead, our results suggest that familiarity is the primary underlying process of the self-referential effect. One reason that can account for this finding is methodological and is related to the use of ROC analysis instead of the RKN paradigm for exploring recollection and familiarity processes. The RKN paradigm has been repeatedly criticized because it cannot

precisely separate the contributions of recollection and familiarity in recognition memory tasks, as it is challenging to ensure that participants understand and correctly use "remember" and "know" judgments for their responses (Yonelinas et al., 2010). On the other hand, the paradigm based on ROC curves is a methodology that has been empirically validated in various settings, including clinical conditions such as patients with amnesia and brain lesions. Thus, the ROC analysis has been proven to be a robust method, with the advantage of being less prone to response bias (Yonelinas et al., 2010; Ragland et al., 2012b).

One way to solve the controversy and to improve the understanding of the mechanisms involved in recognition memory and the contribution of recollection and familiarity to the SRE is to complement the behavioral measures with neurophysiological or imaging techniques that allow the study of recollection and familiarity processes with more precision (Mecklinger & Bader, 2020; Ranganath, 2010). For example, there is robust evidence of the usefulness of event-related potentials (ERPs) to study the neural underpinnings of episodic memory. Specifically, in old/new recognition tests, recollection has a unique ERP signature, i.e., the left parietal old/new effect, whereas familiarity is associated with an earlier old/new effect, most pronounced at frontal recoding sites, also called FN400 or mid-frontal old/new effect (see Rugg & Curran, 2007 or Mecklinger & Bader 2020 for reviews).

In this line, Leynes et al. (2017) compared auditory stimuli (male or female voices) under self-focus and other-focus encoding conditions. The examination of behavioral measures and ERPs suggested that a focus on encoding alters the amount of recollection. The self-focus condition was characterized by positive encoding ERPs, higher old-new recognition, and a larger LPC (ERP related to recollection). Additionally, they decided to conduct a ROC curve study within a DPSD framework, looking for convergence between the

models. They found, for source judgments, a pattern like the one reported by us, in which familiarity is higher for the self-focus condition compared to the other-focus condition (Leynes et al., 2017)

The pattern reported by Leynes and colleagues (2017) becomes interesting for our purposes due to the limitations of our work. Performance was very high and produced ROCs that may have been impacted by ceiling effects. This situation may raise certain doubts regarding possible biases that the parameter analysis in the context of the DPSD model could entail. However, given previous findings in which other authors, using different tasks in terms of manipulation during encoding and variable definition in the recognition phase, find a similar parameter pattern for the condition related to the self, we can propose that, despite the doubts that the limitations of our study might raise, our results are successfully sustained within the context of the DPSD model.

However, the mechanisms by which the SRE is implemented, both at the cognitive and neural levels, are far from being fully understood. Future research may shed light on the mechanisms of the SRE and its implications for normal cognition and for mental health-related conditions.

Study 2

The present study aimed to elucidate the underlying processes of episodic and autobiographical memory (AM) impairments in schizophrenia (SZ), focusing on the roles of recollection and familiarity during relational and self-referential encoding. Our results, derived from two experimental studies involving both healthy participants and individuals with SZ,

provide several novel insights into the memory dysfunctions characteristic of SZ and their relation to autobiographical retrieval.

In line with previous literature (Yonelinas et al., 2010; Ragland et al., 2012b), our findings confirmed that healthy participants exhibit superior recognition accuracy in the single item condition compared to the item pair condition. However, this performance was supported by familiarity and probably recollection processes, both of which presented a similar pattern in both conditions. We believe that since our item pair condition was constructed with old-new pairs instead of rearranged pairs, familiarity exhibited a similar pattern in relation to recollection in both conditions, with a slight difference in favor of the single item condition, primarily due to the greater ease of the condition.

However, in the SZ group, a significant reduction in recognition accuracy was observed across both conditions, with more pronounced impairments in the paired context. Additionally, we found alterations in recollection in both the single and paired conditions, which adds evidence to the previous literature, where alterations in recollection had only been found in the single item context (Ragland et al., 2012b).

Regarding familiarity, we found alterations in both contexts, replicating and deepening previous findings, where ROC curve analysis and the DPSD model were able to more precisely distinguish the contribution of both processes to memory impairment in schizophrenia (Ragland et al. 2012b).

These findings support the notion that relational memory deficits in SZ may stem not only from hippocampal dysfunctions but also from impaired encoding and binding mechanisms (Ranganath, 2010; Eichenbaum et al., 2007). Furthermore, the disproportionate decline in familiarity-based recognition in SZ, especially during relational encoding,

challenges the long-standing assumption that familiarity remains relatively preserved in this population (Libby et al., 2013) and aligns with recent ROC-based evidence showing broad impairments in both memory processes (Guo et al., 2019).

Regarding Self-referential memory, the current results extend existing work on the self-reference effect by showing that healthy participants display improved recognition accuracy in self-referential encoding compared to other-referential encoding, a benefit driven by recollection and probably also by familiarity.

This is particularly relevant given that prior research using the RKN paradigm had emphasized recollection as the main mechanism behind SRE (Conway et al., 2001; Serbun et al., 2011). Our use of ROC analysis provides a more sensitive dissociation of memory processes, suggesting that in healthy adults, both processes are relevant in enhancing memory performance under self-referential encoding.

In a complementary manner, individuals with SZ exhibited a similar SRE pattern across recognition contexts compared to healthy subjects. This evidence challenges numerous previous studies that have shown people with SZ present alterations in the benefit provided by the SRE (Harvey et al., 2011; Kern et al., 2013; Pauly et al., 2011). However, there is opposing evidence that suggests the alteration of the SRE in SZ may be related to methodological strategies applied during tasks. For example, Raffard et al. (2016) provide evidence that supports the possibility of a preserved SRE in people with SZ using a self-imagination strategy when encoding information. Likewise, there are criticisms about the way in which various experimental paradigms are transferred from healthy populations to populations with schizophrenia (Kern et al., 2013). This would be particularly complex when

using written material, which is what we sought to find alternatives to in our experimental tasks.

The SZ group exhibited general impairments in both self- and other-referential conditions, with consistent impairments in familiarity. These results contribute to the mixed findings in the literature (Compère et al., 2016; Raffard et al., 2016) and suggest that disrupted memory processes in SZ affect self- and other-referential encoded elements in a similar manner, independent of the recognition context. Another issue worth highlighting is the involvement of the familiarity process in this alteration and the relative preservation of the recollection process, a finding we were likely able to find due to the use of ROC analysis. We also reinforce and extend the findings reported in previous sections, which already showed disproportionate alterations in familiarity-based recognition (Ragland et al., 2012a).

Finally, the performance of participants in the AM Interview revealed that individuals with SZ recalled fewer episodic details across all life periods, in agreement with prior reports (Berna et al., 2016; Herold et al., 2015). Importantly, hierarchical regression models indicated that self-referential memory performance predicted AMI scores beyond the variance explained by diagnosis and demographic factors. This supports the Self-Memory System (SMS) model proposed by Conway and Pleydell-Pearce (2000), which conceptualizes AM as emerging from interactions among episodic details and self-related knowledge structures. Our findings provide empirical support for this theoretical framework by showing that impairments in encoding mechanisms—particularly those linked to self-processing and associative binding—can directly constrain the richness of autobiographical recall in SZ.

Despite the strengths of this study, including the use of advanced behavioral paradigms and ROC-based modeling, several limitations warrant consideration. First, our sample size,

while statistically powered for the main effects, may limit the generalizability of interaction effects, especially for more nuanced differences between recollection and familiarity. Second, although we controlled cognitive status using MoCA, other neurocognitive domains (e.g., working memory or executive functioning) may interact with episodic retrieval in SZ and were not fully explored in the current models.

Future research should incorporate neuroimaging techniques to link behavioral indices with neural correlates of encoding and retrieval. Additionally, longitudinal studies examining how memory processes evolve with treatment or psychosocial interventions may clarify the clinical implications of our findings, especially regarding the design of cognitive remediation and psychotherapeutic strategies targeting AM deficits in SZ

VIII-CONCLUSIONS

The present thesis provides converging evidence that episodic memory impairments in schizophrenia (SZ) are not merely general cognitive deficits but instead reflect specific disruptions in recollection and familiarity-based recognition processing. Across two experimental conditions, individuals with SZ consistently demonstrated impaired familiarity and, in some conditions, impaired recollection, suggesting that their recognition memory relies on fluency-based processes and contextual integration.

Crucially, this thesis shows that the self plays a mechanistic role in memory performance. In healthy adults, self-referential encoding enhanced recognition accuracy, mainly through familiarity mechanisms, highlighting the self as a salient and efficient cognitive organizer. In SZ, the self-reference effect (SRE) persisted but failed to enhance familiarity, indicating that self-processing in the disorder is present but functionally weakened. These findings bridge dual-process memory theory with the contemporary understanding of self-disturbance in SZ.

Furthermore, self-based episodic encoding emerged as the strongest predictor of autobiographical memory specificity, beyond diagnostic status. This demonstrates that episodic memory supports the continuity of identity, and that impairments in recollection and familiarity may contribute to the fragmented sense of self that is characteristic of the disorder. The cognitive signature identified here—recollection↓ + familiarity↓ —helps explain why individuals with SZ may recognize events yet struggle to experience them as their own.

Taken together, the results position the dual-process framework as a valuable tool for investigating the cognitive foundations of personal identity. They also identify targetable mechanisms for clinical intervention: strengthening meaningful self-involvement during

memory encoding may support fuller autobiographical processing and, ultimately, foster a more coherent sense of self.

Study 1: Recollection and Familiarity in Episodic Memory in Healthy Adults

The first study of this thesis aimed to investigate the contribution of recollection and familiarity to episodic recognition memory under two encoding contexts—relational memory (RM) and self-referential memory (SRM)—in healthy young adults. The results confirmed that single-item recognition was more accurate than paired-item recognition, which is consistent with previous literature suggesting that relational encoding imposes a higher cognitive demand than item-specific encoding. Furthermore, when analyzed through the lens of receiver operating characteristic (ROC) curves, both recollection and familiarity estimates seemed to be relevant, supporting recognition memory in single and item pair contexts. However, there was a statistically significant difference in recollection in favor of the item single condition. This suggests that behavioral accuracy is sensitive to encoding complexity, favoring performance in the single item versus the item pair condition, supported mainly by recollection processes.

In the SRM task, a consistent self-reference memory effect (SRE) was observed, both in single and paired recognition contexts. Notably, this effect was primarily supported by enhanced familiarity rather than recollection, contradicting earlier assumptions that self-referential processing primarily boosts recollection. These findings suggest that the self may enhance memory accessibility even through familiarity-based processes, aligning with models that emphasize the affective and semantic richness of self-related encoding.

Altogether, Study 1 provides a refined understanding of episodic memory subprocesses, highlighting the nuanced roles of recollection and familiarity across different encoding strategies. These results also reinforce the need for memory paradigms that go beyond traditional item recognition and consider relational and self-referential encoding conditions, which may more closely resemble the complexity of memory processing in everyday life.

Study 2: Episodic and Autobiographical Memory Processes in Schizophrenia

Study 2 extended the experimental framework of Study 1 to a clinical population, comparing individuals with schizophrenia (SZ) and matched healthy controls in terms of recognition performance under single item, item pair, and self-referential encoding, and exploring how these processes relate to autobiographical memory (AM). Consistent with previous findings, SZ participants exhibited global impairments in episodic memory, characterized by significantly lower accuracy and reduced parameter estimates for both recollection and familiarity across tasks. Interestingly, the degree of impairment was more pronounced for familiarity in the relational memory task, while recollection deficits did not show statistically significant differences between the conditions. This contradicts the common assumption that recollection is disproportionately impaired in SZ, suggesting that both processes may be compromised depending on task demands.

In the SRM task, healthy controls showed an SRE supported by recollection, which is contradictory to the results of Study 1, where familiarity was the main process involved. One explanation for this difference relates to the sociodemographic characteristics of the control

group compared to the schizophrenia group, as subjects were matched by sex, age, and social status in this case. Chile is a country with significant problems of social inequality and inequity, making it plausible to find notable differences in cognitive performance between groups belonging to different social classes. In the case of the two studies discussed, the first study involved a young group with university studies who presented ceiling effects in their performance in several subjects. In contrast, the control group in the second study exhibited greater heterogeneity, with only a few individuals presenting ceiling effects. This difference likely determined the difference in the patterns underlying the SRE.

In contrast, while patients with SZ exhibited reduced accuracy, they still demonstrated a self-reference benefit in some conditions, supported by recollection and likely also by familiarity, with better performance in recollection compared to a stable impairment in familiarity between groups. This finding raises questions about the integrity of self-related processing in schizophrenia and suggests a possible dissociation between subjective enhancement and cognitive retrieval mechanisms. Furthermore, we propose that self-referential impairment in schizophrenia depends on the context in which it is assessed. This proposal explores the potential for innovative therapeutic approaches in cognitive remediation strategies that utilize self-referential coding methods.

Importantly, regression analyses revealed that performance in SRM tasks was predictive of autobiographical memory retrieval, beyond the mere diagnostic status. This finding supports the Self-Memory System (SMS) model, which posits that the construction of autobiographical memory relies on the integrity of episodic encoding processes. In the context of SZ, disruptions in relational and self-referential episodic memory encoding may directly

contribute to autobiographical memory deficits, which are linked to identity disturbances and reduced social functioning.

In conclusion, Study 2 confirms that both recollection and familiarity are disrupted in schizophrenia, with significant consequences for the construction of autobiographical memory. These findings support a translational model in which cognitive remediation and psychotherapy could benefit from targeting specific encoding strategies—particularly those involving self-relevant and relational processing—as a pathway to enhance memory, identity coherence, and therapeutic engagement in individuals with Sz.

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APPENDIX A

Evaluation Instruments in REDCap

Investigacion sobre memoria episodica y autobiografica Page 1

Por favor completar la encuesta de abajo.

Gracias!

PRESENTACIÓN DEL ESTUDIO Y CONSENTIMIENTO INFORMADO

Usted ha sido invitado a participar en el estudio "Procesos subyacentes de alteraciones de memorias episódicas y autobiográficas en esquizofrenia" a cargo del investigador Emmanuel Méndez Hernández, Médico Psiquiatra y Doctorando en Psicoterapia de la Pontificia Universidad Católica de Chile. Este estudio está siendo financiado por ANID, Beca de Doctorado Nacional. El objeto de este documento es ayudarlo a tomar la decisión de participar en la presente investigación.

Tome el tiempo que necesite para decidirse, lea cuidadosamente este documento y hágale las preguntas que desee al médico o al personal del estudio.

¿De qué se trata la investigación científica a la que se lo invita a participar?

El propósito de este estudio es estudiar la capacidad para recordar episodios de nuestras vidas, llamada también memoria episódica. Este proyecto estudiará diversas facetas de la memoria episódica en personas con diagnóstico de esquizofrenia y personas sin diagnóstico de trastornos psiquiátricos. En la primera fase del proyecto, se evaluará a personas jóvenes, correspondientes a estudiantes universitarios entre 18-35 años, sin trastornos psiquiátricos que equivalen a un grupo de 64 individuos. En la segunda fase del estudio, se estudiará a un grupo de 32 personas con diagnóstico de esquizofrenia, los cuales serán comparados a un grupo de 32 personas sin diagnóstico de trastornos psiquiátricos, equiparados en edad, sexo y años de estudio.

¿Cuál es el propósito concretamente de su participación en esta investigación?

Usted ha sido convocado porque pertenece a uno de los grupos de personas descritos previamente.

¿En qué consiste su participación?

El siguiente estudio tiene contemplado contestar cuestionarios de datos generales, síntomas psiquiátricos y capacidad cognitiva en formato electrónico online. En caso de que usted tenga puntaje sugerente de alguna condición de salud mental como depresión, trastorno de ansiedad o postraumático, esta situación le será informada y se sugerirá consultar a algún/a profesional de salud mental. El estudio consiste en dos tipos de experimentos evaluados en 2 sesiones distintas. Se espera que usted participe en ambos.

Las tareas experimentales se realizan en un computador a través de la presentación de imágenes, que posteriormente se tendrán que reconocer. Cada sesión de evaluación tiene una duración aproximada de 75-90 minutos cada una de ellas, con descansos de 5 minutos cada 20-25 minutos, por lo que en total serían 3 bloques de 20-25 minutos de evaluación con 3 espacios de descanso de 5 minutos cada uno.

En la primera sesión, se firmará el consentimiento informado, se recopilarán los datos sociodemográficos confirmando criterios de inclusión/exclusión y se realizará la primera tarea experimental. En la segunda sesión, se continuarán con encuestas, entrevistas y la segunda tarea experimental.

1. La primera tarea experimental consistirá en dos fases: 1) codificación; 2) reconocimiento. En la fase de codificación se presentarán imágenes de diversos objetos en la pantalla de un computador. En la fase de reconocimiento se presentarán las mismas imágenes junto a nuevas para que usted las pueda reconocer agregando un juicio de confianza con respecto a su decisión.

2. El segundo experimento presenta una estructura similar a la primera tarea con algunas diferencias:

- En la fase de codificación los objetos serán presentados de forma asociada a una foto de usted mismo y otros a una foto de un personaje famoso.
- En la fase de reconocimiento se presentarán los pares de imágenes previamente presentados, junto a nuevos pares reorganizados y otros pares asociados a imágenes nuevas.

Todos los datos recopilados se almacenarán de forma anónima en un sistema digital seguro llamado REDCap, siendo el responsable del almacenamiento el tutor académico del investigador responsable. Usted debe saber que en el caso de que decida no participar, esto no implicará ningún cambio en su tratamiento habitual.

¿Cuánto durará su participación?

La evaluación se realizará en 2 sesiones, cada una de ellas con un tiempo de 90 minutos máximo y separadas temporalmente por un período máximo de 2 semanas. Por lo tanto, el tiempo de participación en el estudio no excederá el mes de evaluación.

¿Qué beneficios puede obtener de su participación?

Los potenciales beneficios de este estudio son su contribución al conocimiento en el área del aprendizaje de la memoria episódica y autobiográfica, lo cual ayudará a mejorar la comprensión de los procesos implicados en las alteraciones de estas facultades. Usted recibirá apoyo económico para los traslados al centro a través del pago en efectivo de 5000 pesos para ser utilizado en locomoción colectiva. Asimismo, luego de finalizar su participación en el estudio será invitado a un taller de prevención del deterioro cognitivo, lo cual será una ayuda para su bienestar en el futuro y el de sus cercanos.

¿Qué riesgos corre al participar?

Esta investigación, al carecer de intervenciones invasivas, no presenta mayores riesgos para su salud. En el caso de que recuerde algún episodio complejo de su vida, existe la posibilidad de que este recuerdo le cause malestar emocional, lo que será contenido verbalmente por el investigador responsable, médico psiquiatra con 10 años de experiencia en el tratamiento de personas con trastornos psiquiátricos graves, e informado a su equipo tratante, en el caso de encontrarse en tratamiento. Aunque es poco probable, ya que usted debe estar compensado al momento de ingreso al estudio, en el caso de que el malestar se incremente y no logre controlarse en una primera instancia, las medidas específicas serán las correspondientes al siguiente protocolo de contención.

1. Detener sesión de evaluación.
2. Intervención en crisis en box de atención según modelo trifásico de Judith Herman (1997).
3. Aviso a coordinación clínica de centro especializado.
4. Continuidad de cuidados en base a protocolo de manejo en crisis propio de cada centro de atención.
5. Salida del protocolo de investigación.
6. Seguimiento telefónico a las 24 horas y a los 7 días posterior al evento.

¿Cómo se protege la información y datos que usted entregue?

Todos los datos de información personal serán estrictamente confidenciales. La información se codificará y anonimizará en una base de datos. Si bien los resultados conductuales y clínicos serán publicados en artículos científicos, no será posible determinar la identidad de la persona de quien los datos fueron obtenidos. Los datos permanecerán resguardados por un tiempo indefinido y podrían ser usados en el contexto de estudios posteriores.

¿Es obligación participar? ¿Puede arrepentirse una vez iniciada su participación?

Usted NO está obligado de ninguna manera a participar en este estudio. Si accede a participar, puede dejar de hacerlo en cualquier momento sin repercusión negativa alguna para usted.

¿Qué uso se va a dar a la información que yo entregue?

Los resultados conductuales y clínicos serán publicados en artículos científicos y presentados en congresos y seminarios científicos.

¿A quién puede contactar para saber más de este estudio o si le surgen dudas?

Si tiene cualquier pregunta acerca de esta investigación, puede contactar a Dr. Emmanuel Méndez, Investigador Responsable del estudio, al teléfono móvil: 9873 75448 o email: eomendez@uc.cl.

En caso de que usted obtenga puntajes clínicamente significativos para sospecha de diagnóstico psiquiátrico, se recomendará consultar con especialista en salud mental. En caso de que usted sea estudiante de la UC, se sugerirá consulta en la Unidad de Salud Mental estudiantil UC (<http://saludestudiantil.uc.cl/>).

Si tiene preguntas acerca de sus derechos como participante en una investigación médica, usted puede llamar a la Sra. Ivonne Vargas Celis, Presidente subrogante del Comité Ético Científico en Ciencias de la Salud de la Pontificia Universidad Católica de Chile, al teléfono 223542397-223548173, o enviar un correo electrónico a: eticadeinvestigacion@uc.cl

HE TENIDO LA OPORTUNIDAD DE LEER ESTA DECLARACIÓN DE CONSENTIMIENTO INFORMADO, HACER PREGUNTAS ACERCA DEL PROYECTO DE INVESTIGACIÓN, Y ACEPTO PARTICIPAR EN ESTE PROYECTO.

- Sí, acepto participar
 NO, no acepto participar

Nombre participante

Firma participante

Fecha

Nombre Investigador/a

Firma Investigador/a

Fecha

nombre Director/a institución o Delegado/a

Firma Director/a institucion o Delegado/a

Fecha

Datos del/la participante

Nombre

Apellido

Por favor ingrese su RUT

E-mail

Datos demográficos y antecedentes clínicos

ID participante

Número de teléfono de contacto

Fecha de nacimiento

Edad (años)

Sexo

- Femenino
 Masculino

¿Cuál es su escolaridad?

- Educacion basica incompleta
 Educacion basica completa
 Educacion media incompleta
 Educacion media completa
 Educacion tecnica o universitaria de pregrado incompleta
 Educacion tecnica o universitaria de pregrado completa
 Educacion de postgrado incompleta
 Educacion de postgrado completa

¿Cuántos años de estudio tiene en total?

¿Actualmente esta en tratamiento por algun cuadro psicologico o psiquiatrico?

- No
 Si

Si su respuesta es si, por favor especifique el diagnostico, tipo de tratamiento y tiempo que lleva en tratamiento

¿Actualmente esta en tratamiento con algun psicofarmaco? Por ejemplo:

1. Ansioliticos o hipnoticos (clonazepam, clotiazepam, zopiclona, zolpidem, etc)
 2. Antidepresivos (sertralina, paroxetina, citalopram, etc)
 3. Tranquilizantes o antipsicoticos (quetiapina, olanzapina, etc)
 4. No estoy en tratamiento con ningun psicofarmaco

En caso de haber respondido afirmativamente la pregunta anterior, por favor especifique el nombre del/los psicofarmaco(s) y la dosis diaria

Tabla de conversión de dosis equivalentes de antipsicóticos.

Generic	Brand	Dose Equivalent
First Generation Antipsychotics		
Chlorpromazine	Thorazine [®]	100 mg
Fluphenazine	Prolixin [®]	2 mg
Haloperidol	Haldol [®]	2 mg
Second Generation Antipsychotics		
Aripiprazole	Abilify [®]	7.5 mg
Clozapine	Clozaril [®]	100 mg
Olanzapine	Zyprexa [®]	5 mg
Paliperidone	Invega [®]	2 mg ¹
Quetiapine	Seroquel [®]	75 mg
Risperidone	Risperdal [®]	1 mg
Ziprasidone	Geodon [®]	60 mg

Por favor indique dosis ajustada de clorpromazina

¿Tiene problemas de visión cromática, como por ejemplo discromatopsia (daltonismo)?

- No
 Si

¿Tiene algún problema de audición que interfiera con su capacidad de percibir sonidos de baja intensidad?, por ejemplo, tinnitus, hipoacusia, etc.

- No
 Si

Test de lateralidad de Edimburgo

Questionario de dominancia manual de Edimburgo

¿Que mano utiliza para?

++ solo la mano derecha + solo la mano derecha manos izquierda y derecha + solo la mano izquierda ++ solo la mano izquierda

Escribir	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dibujar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lanzar un objeto	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lavarse los dientes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utilizar un cuchillo (sin tenedor)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cortar con tijeras	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comer con la cuchara	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Barrer (la mano que coloca arriba de la escoba)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prender un fósforo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Levantar la tapa de una caja	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

calc_edimb_1r

calc_edimb_1l

calc_edimb_2r

calc_edimb_2l

calc_edimb_3r

calc_edimb_3l

calc_edimb_4r

calc_edimb_4l

calc_edimb_5r

calc_edimb_5l

calc_edimb_6r

calc_edimb_6l

calc_edimb_7r

calc_edimb_7l

calc_edimb_8r

calc_edimb_8l

calc_edimb_9r

calc_edimb_9l

calc_edimb_10r

calc_edimb_10l

edimb_der

 edimb_izq

 numerador_edimb

 denominador_edimb

 indice_lateralidad_edimburgo

CORE-OM

A continuación encontrará 34 frases. Lea cada frase y piense con qué frecuencia usted se ha sentido así durante los últimos siete días. Después marque la casilla que mejor lo refleje.

Durante los últimos siete días...

	Nunca	Muy pocas veces	Algunas veces	Muchas veces	Siempre o casi siempre
1. Me he sentido muy solo/a y aislado/a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Me he sentido tenso/a, ansioso/a o nervioso/a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. He sentido que tenía a alguien en quien apoyarme cuando lo he necesitado	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Me he sentido bien conmigo mismo/a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Me he sentido totalmente sin energía ni entusiasmo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. He sido violento/a físicamente hacia los demás	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Me he sentido capaz de afrontar las cosas cuando han ido mal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. He tenido molestias, dolores y otros problemas físicos	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. He pensado en hacerme daño a mí mismo/a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Me ha costado mucho hablar con la gente	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. La tensión y la ansiedad me han impedido hacer cosas importantes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Me he sentido satisfecho/a con las cosas que he hecho	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Me han inquietado pensamientos y sentimientos no deseados	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. He tenido ganas de llorar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. He sentido pánico o terror	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. He hecho planes para acabar con mi vida	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Me he sentido agobiado/a por mis problemas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. He tenido dificultad para conciliar el sueño o permanecer dormido/a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. He sentido afecto o cariño por alguien	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Me ha sido imposible dejar a un lado mis problemas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. He sido capaz de hacer la mayoría de las cosas que tenía que hacer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. He amenazado o intimidado a otra persona	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Me he sentido desesperado/a o sin esperanza	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. He pensado que sería mejor que estuviera muerto/a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Me he sentido criticado/a por los demás	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. He pensado que no tengo amigos/as	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. Me he sentido infeliz	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. Me han angustiado imágenes o recuerdos no deseados	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

29. Me he sentido irritable cuando estaba con otras personas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. He pensado que yo tengo la culpa de mis problemas y dificultades	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. Me he sentido optimista sobre mi futuro	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. He conseguido las cosas que quería	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. Me he sentido humillado/a o avergonzado/a por otras personas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. Me he hecho daño físicamente o he puesto en peligro mi salud	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Coreom_w

Coreom_p

Coreom_f

Coreom_r

Coreom_Total

MINI Tamizaje

	No	Si
1. ¿Se ha sentido depresivo/a o decaído/a, o ha sentido pena, vacío o desesperanza, la mayor parte del día, casi todos los días, durante las últimas dos semanas?	<input type="radio"/>	<input type="radio"/>

2. En las últimas dos semanas, estuvo mucho menos interesado en la mayoría de cosas o estuvo mucho menos hábil para disfrutar las cosas que usted usualmente disfruta la mayor parte del tiempo?
3. En el último mes pensó que usted podría estar mejor muerto o deseó que estuviera muerto?
4. En el último mes ha pensado en quitarse la vida o querido estar muerto, o planificado su propia Muerte o hecho algo que usted esperará que causara su muerte?
5. Ha tenido usted un período de tiempo en el que se sintiera "arriba" o "alto" o "super" o tan lleno de energía que se haya metido en problemas, o que la gente haya pensado que usted no era el mismo de antes? (no considere tiempo en los que haya consumido sustancias)
6. Ha sido alguna vez persistentemente irritable por muchos días, tal que usted tuvo discusiones verbales o peleas físicas o le gritó a personas fuera de su familia? Alguna vez usted u otros han notado que esté más irritable o que sobrereaccionado, a pesar de que haya sentido que era justificado?

7. Alguna vez o en más de una ocasión, ha presentado crisis cuando se ha sentido repentinamente ansioso, muy asustado, incómodo o intranquilo, incluso en situaciones en donde la mayoría de las personas no se sintieran de esa manera? Sucedió que las crisis llegaran a un máximo, dentro de los 10 minutos del comienzo?

8. Alguna vez sucedió que estas crisis sucedieras de forma inesperada o sin gatillantes?

9. ¿Se siente ansioso o intranquilo en lugares o situaciones donde posiblemente no pueda ser ayudado o pueda escapar con dificultad, como por ejemplo en una muchedumbre o lugares cerrados, esperando en una fila, cuando esta fuera de su casa o solo en su casa, o cruzando un puente, viajando en busca, tren o auto?

10. En el último mes ha presentado miedo persistente o ansiedad significativa al ser observado, ser el foco de atención o ser humillado o avergonzado o rechazado? Esto incluye cosas como hablar en publico, comer en lugares publicos u otros, escribir mientras alguien mira o estar en situaciones sociales.

11. En el último mes ha sido molestado/a por pensamientos, impulsos o imágenes recurrente que hayan sido no deseadas, molestas, inapropiadas, intrusivas o estresantes? (por ejemplo: ideas de suciedad, continación o tener germenos o miedo de contaminación por otros o miedo de dañar a alguien a pesar de no desearlo o miedo de actual en base a un impulso o miedo o supersticiones de que es responsable de que las cosas vaya mal u obsesiones de pensamientos, imágenes o impulsos sexuales u obsesiones religiosas)

12. En el ultimo mes, se ha sentido llevado a hacer algo repetidamente en respuesta a una regla ridiga u obsession, como lavarse las manos o limpiar excesivamente, contar o chequear cosas una y otra vez, o repetir o arreglar cosas, o rituales supersticiosos?

13. Alguna vez ha experimentado o visto o tenido que lidiar con un evento extremadamente traumático que incluyo el riesgo de Muerte o de lesiones severas o de violencia sexual a usted o alguien más? Ejemplos incluyen: accidentes graves, as as alto físico o sexual, ataque terrorista, ser captivo como rehen, secuestro, encontrar un cuerpo, Guerra o desastre natural, ser testigo de la Muerte violenta o repentina de alguien cercano o una enfermedad de riesgo vital.

14. Durante el ultimo mes, ha reexperimentado un evento en una forma estresante (tal como, son sueños, recuerdos intensos, imagenes repentinas o reacciones físicas)?
15. En los últimos 12 meses, ha consumido 3 o mas bebidas alcoholicas en un periodo de 3 horas en 3 o mas ocasiones?
16. Ahora le mostraré una lista de medicamentos o Drogas ilegales. En los ultimos 12 meses ha tomado alguna de estas drogas en más de una ocasión, para sentirse elevado/a, contento/a, relajado/a o para sentirse diferente de ánimo?: anfetaminas, cocaína/crack, heroína, LSD, mescalina, esteroides, morfina, metadona, fenilciclidina, extasis, MDMA, metanfetamina, ritalin, dexedrina, benzodiazepinas, opio, codeina, ketamina, cannabis, marihuana, hashisch, tusi, ayahuasca, San Pedro, hongos alucinógenos, inhalantes, solventes, tolueno
17. Ha creído que las persoans estuvieran espiandolo o que alguien estuviera tramando en contra suyo/a para dañarlo/a?
18. ¿Alguna vez ha escuchado cosas que otras personss no puedan escuchar, como voces?
19. ¿Alguna vez ha tenido visiones cuando esta despierto, o ha tenido visto cosas que otras personas no puedan ver?
20. En los últimos 3 meses, ha tenido atracones de comida o episodios en los que que como una muy grande cantidad de comida durante un período de 2 horas?

21. En los últimos 3 meses, durante estos atracones, se ha sentido que su alimentación ha estado fuera de control?

22. Ha estado excesivamente ansioso/a o preocupado/a acerca de diversas cosas rutinarias durante los últimos 6 meses?

¿Cual es su estatura?

¿Cuál es su peso mas bajo durante los últimos 3 meses?

¿Es el peso menor al limite inferior recomendado?

Altura (cms)	150	155	160	165	170	175	180	185	190
Peso (kgs.)	41	44	46	50	53	56	59	62	66

¿Es el peso menor al limite inferior recomendado?

- Sí
 No

PANSS**Escala para el Síndrome Positivo y Negativo de la Esquizofrenia (Positive and Negative Syndrome Scale, PANSS)****Escala positiva (PANSS-P)**

	Ausente	Minimo	Leve	Moderado	Moderada mente grave	Grave	Extremo
1. Delirios	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Desorganización conceptual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Alucinaciones	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Excitación	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Grandiosidad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Susplicia/perjuicio	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Hostilidad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Sum_panss_p

Escala negativa (PANSS-N)

	Ausente	Minimo	Leve	Moderado	Moderada mente grave	Grave	Extremo
1. Embotamiento afectivo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Retraimiento emocional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Contacto pobre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Retraimiento social	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Pensamiento abstracto	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Fluidez de la conversación	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Pensamiento estereotipado	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Sum_panss_n

Escala de síntomas generales (PANSS-SintsGen)

	Ausente	Minimo	Leve	Moderado	Moderada mente grave	Grave	Extremo
1. Preocupación somática	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Ansiedad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Sentimientos de culpa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Tensión motora	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Manierismos/posturas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Depresión	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Enlentecimiento motor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Falta de colaboración	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Pensamientos inusuales	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Desorientación	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Atención deficiente	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Ausencia de insight	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Trastornos de la volición	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Control deficiente de los impulsos	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Ensimismamiento	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Evitación social activa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Sum_panss_sintomas_generales

PANSS_Total

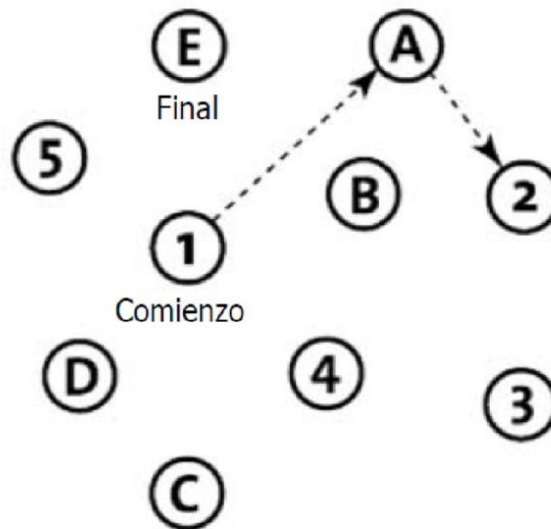
Montreal Cognitive Assessment [Evaluación Cognitiva Montreal] (MoCA)

La Evaluación Cognitiva Montreal (Montreal cognitive assessment / MoCA) ha sido concebida para evaluar las disfunciones cognitivas leves. Este instrumento examina las siguientes habilidades: atención, concentración, funciones ejecutivas (incluyendo la capacidad de abstracción), memoria, lenguaje, capacidades visuoconstructivas, cálculo y orientación. El tiempo de administración requerido es de aproximadamente diez minutos. El puntaje máximo es de 30; un puntaje igual o superior a 26 se considera normal.

¿Tiene 12 años o menos de escolaridad?

- Sí
 No

MOCA_1



moca1_respuesta

- Sí
 No

2. Capacidades visuoespaciales (Cubo):

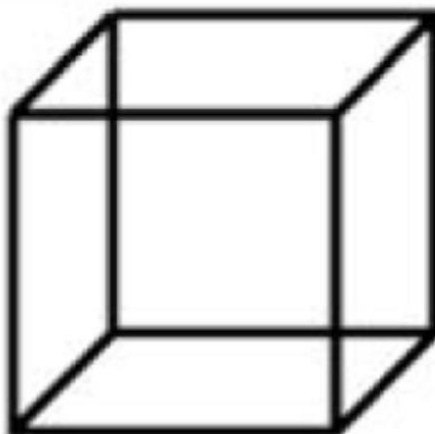
Administración: El examinador da las instrucciones siguientes, señalando el cubo: "Me gustaría que copie este dibujo de la manera más precisa posible".

Puntaje: Se asigna un punto si se realiza el dibujo correctamente.

- El dibujo debe ser tridimensional
- Todas las líneas están presentes
- No se añaden líneas
- Las líneas son relativamente paralelas y aproximadamente de la misma longitud (los prismas rectangulares son aceptables)

Se asigna CERO si no se han respetado TODOS los criterios anteriores.

MOCA_2



Copiar el
cubo

moca2_respuesta

- Sí
 No

3. Capacidades visuoespaciales (Reloj):

Administración: Señalando el espacio adecuado, el examinador da las siguientes instrucciones: "Ahora me gustaría que dibuje un reloj, que incluya todos los números, y que marque las 11 y 10".

Puntaje: Se asigna un punto por cada uno de los tres criterios siguientes:

- Contorno (1 pt.): El contorno debe ser un círculo con poca deformación. (p.ej. una leve deformación al cerrar el círculo)
- Números (1 pt.): Todos los números deben estar presentes, sin añadir ninguno; los números deben seguir el orden correcto y estar bien colocados; se aceptarán los números romanos, así como los números colocados fuera del contorno.
- Agujas (1 pt.): Las dos agujas deben indicar la hora correcta; la aguja de las horas debe ser claramente más pequeña que la aguja de los minutos. El punto de unión de las agujas debe estar cerca del centro del reloj.
- No se asignan puntos si no se han respetado los criterios anteriores.

MOCA_3

Dibujar un reloj (Once y diez)
(3 puntos)

[]
Contorno

[]
Números

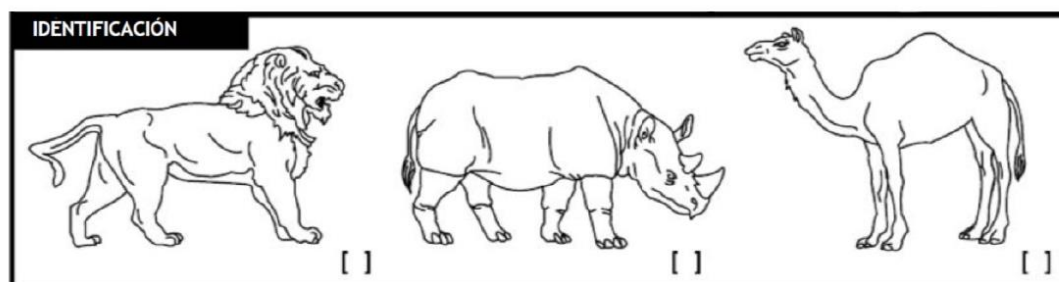
[]
Agujas

moca3_respuesta		
	Si	No
Contorno	<input type="radio"/>	<input type="radio"/>
Números	<input type="radio"/>	<input type="radio"/>
Agujas	<input type="radio"/>	<input type="radio"/>

4. Denominación:

Administración: El examinador pide a la persona nombre cada uno de los animales, de izquierda a derecha.
Puntaje: Se asigna un punto por la identificación correcta de cada uno de los dibujos: (1) camello o dromedario (2) león (3) rinoceronte.

MOCA_4

**moca4_respuesta**

	Si	No
Leon	<input type="radio"/>	<input type="radio"/>
Rinoceronte	<input type="radio"/>	<input type="radio"/>
Dromedario/Camello	<input type="radio"/>	<input type="radio"/>

5. Memoria:

Administración: El examinador lee una lista de 5 palabras a un ritmo de una palabra por segundo, luego de haber dado las siguientes instrucciones: "Ésta es una prueba de memoria. Le voy a leer una lista de palabras que debe recordar. Escuche con atención y, cuando yo termine, me gustaría que me diga todas las palabras que pueda recordar, en el orden que desee". El examinador lee la lista de palabras una primera vez y marca con una cruz (x), en el espacio reservado a dicho efecto, todas las palabras que el paciente repita. Cuando el paciente termine (se haya acordado de todas las palabras) o cuando no pueda acordarse de más palabras, el examinador vuelve a leer la lista de palabras luego de dar las siguientes instrucciones: "Ahora le voy a leer la misma lista de palabras una vez más. Intente acordarse del mayor número posible de palabras, incluyendo las que repitió en la primera ronda". El examinador marca con una cruz (x), en el espacio reservado a dicho efecto, todas las palabras que el paciente repita la segunda vez. Al final del segundo intento, el examinador informa al paciente que deberá recordar estas palabras, ya que tendrá que repetir las más tarde, al final de la prueba.

Puntaje: Esta sección no se coteja (no recibe puntos).

MOCA_5

MEMORIA	Lea la lista de palabras, el paciente debe repetirlas. Haga dos intentos. Recuérdese las 5 minutos más tarde.		ROSTRO	SEDA	IGLESIA	CLAVEL	ROJO
		1er intento					
		2º intento					

6. Atención:

Secuencia numérica:

Administración: El examinador lee una secuencia de cinco números a un ritmo de uno por segundo, luego de haber dado las siguientes instrucciones: "Le voy a leer una serie de números, y cuando haya terminado, me gustaría que repita estos números en el mismo orden en el que yo los he dicho".

Secuencia numérica inversa:

Administración: El examinador lee una secuencia de 3 cifras a un ritmo de una por segundo, luego de haber dado las siguientes instrucciones: "Le voy a leer una serie de números, y cuando haya terminado, me gustaría que repita los números en el orden inverso al que yo los he dado".

Puntaje: Se asigna un punto por cada una de las secuencias repetidas correctamente (N.B.: el orden exacto de la secuencia numérica inversa es 2-4-7).

MOCA_6

ATENCIÓN	Lea la serie de números (1 número/seg.)	El paciente debe repetirla. [] 2 1 8 5 4
		El paciente debe repetirla a la inversa. [] 7 4 2

moca6_respuesta		
	Si	No
1. Serie directa (2 1 8 5 4)	<input type="radio"/>	<input type="radio"/>
2. Serie inversa (2 4 7)	<input type="radio"/>	<input type="radio"/>

7. Concentración:

Administración: El examinador lee una serie de letras a un ritmo de una por segundo, luego de haber dado las instrucciones siguientes: "Voy a leerle una serie de letras. Cada vez que diga la letra 'A', dé un golpecito con la mano. Cuando diga una letra que no sea la A, no dé ningún golpecito".

Puntaje: No se asigna ningún punto si se comete más de un error (ej., la persona da el golpecito con una letra equivocada o no da el golpecito con la letra 'A').

MOCA_7

Lea la serie de letras. El paciente debe dar un golpecito con la mano cada vez que se diga la letra A. No se asignan puntos si ≥ 2 errores.

[] FBACMNAAJKLBAFAKDEAAAJAMOFAB

moca7_respuesta
¿Comete 2 o más errores?

- Sí
 No

8. Substracción en secuencia de 7:

Administración: El examinador da las instrucciones siguientes: "Ahora me gustaría que calcule 100 menos 7, y así sucesivamente: continúe restando 7 a la cifra de su respuesta anterior, hasta que le pida que pare". El examinador puede repetir las instrucciones una vez más si lo considera necesario.

Puntaje: Esta prueba obtiene tres puntos en total. No se asigna ningún punto si ninguna substracción es correcta. 1 punto por 1 substracción correcta. 2 puntos por 2 o 3 substracciones correctas. 3 puntos por 4 o 5 substracciones correctas. Cada sustracción se evalúa individualmente. Si el paciente comete un error en la substracción y da una cifra errónea, pero subtrae 7 correctamente de dicha cifra errónea, se asignan puntos, por ejemplo, $100 - 7 = 92 - 85 - 78 - 71 - 64$. "92" es incorrecto, pero todos los números siguientes son correctos. Dado que se trata de 4 respuestas correctas, el puntaje es de tres puntos.

MOCA_8

Restar de 7 en 7 empezando desde 100.

[] 93

[] 86

[] 79

[] 72

[] 65

4 o 5 sustracciones correctas: 3 puntos, 2 o 3 correctas: 2 puntos, 1 correcta: 1 punto, 0 correctas: 0 puntos.

moca8_respuesta

	Si	No
Substraccion 1	<input type="radio"/>	<input type="radio"/>
Substraccion 2	<input type="radio"/>	<input type="radio"/>
Substraccion 3	<input type="radio"/>	<input type="radio"/>
Substraccion 4	<input type="radio"/>	<input type="radio"/>
Substraccion 5	<input type="radio"/>	<input type="radio"/>

Repetición de frases:

Administración: El examinador da las instrucciones siguientes: "Ahora le voy a leer una frase y me gustaría que la repitiera a continuación: "El gato se esconde bajo el sofá cuando los perros entran en la sala".

Acto seguido, el examinador dice: "Ahora le voy a leer una segunda frase y usted la va a repetir a continuación: "Espero que él le entregue el mensaje una vez que ella se lo pida".

Puntaje: Se asigna un punto por cada frase repetida correctamente. La repetición debe ser exacta. El examinador debe prestar atención a los errores de omisión, sustitución o adición.

MOCA9

LENGUAJE

Repetir: El gato se esconde bajo el sofá cuando los perros entran en la sala. [] Espero que él le entregue el mensaje una vez que ella se lo pida. []

moca9_respuesta

	Si	No
1. El gato se esconde bajo el sofá cuando los perros entran en la sala.	<input type="radio"/>	<input type="radio"/>
2. Espero que él le entregue el mensaje una vez que ella se lo pida	<input type="radio"/>	<input type="radio"/>

Fluidez verbal:

Administración: El examinador da las instrucciones siguientes: "Me gustaría que me diga el mayor número posible de palabras que comiencen por la letra que le diga. Puede decir cualquier tipo de palabra, excepto nombres propios, números, conjugaciones verbales (p. ej. 'meto', 'metes', 'mete') y palabras de la misma familia (p.ej. 'manzana', 'manzano'). Le pediré que pare al minuto. Está preparado? Ahora, diga el mayor número posible de palabras que comiencen por la letra P".

Puntaje: Se asigna un punto si el sujeto dice 11 palabras o más en un minuto.

MOCA10

Fluidez del lenguaje. Decir el mayor número posible de palabras que comiencen por la letra "P" en 1 min. [] _____ (N > 11 palabras)

¿Dice mas de 11 palabras que comienzan con la letra "p" en un minuto?

- Sí
 No

Similitudes:

Administración: El examinador pide a la persona que le diga qué tienen en común dos objetos presentados, ilustrándolo con el ejemplo siguiente: "¿En qué se parecen una manzana y una naranja?" Si el paciente ofrece una respuesta concreta, el examinador lo repite sólo una vez más: "Dígame en qué otro aspecto se parecen una manzana y una naranja". Si el paciente no da la respuesta adecuada, diga: "Sí, y también en que las dos son frutas". No dé otras instrucciones o explicaciones.

Después de la prueba de ensayo, el examinador pregunta: "Ahora dígame en qué se parecen un tren y una bicicleta". No dé instrucciones o pistas suplementarias.

Puntaje: Se asigna un punto por cada uno de los dos últimos pares contestados correctamente. Se aceptan las siguientes respuestas: para tren/bicicleta - medios de transporte, medios de locomoción, para viajar; regla/reloj - instrumentos de medición, para medir. Respuestas no aceptables: para tren/bicicleta - tienen ruedas, ruedan; y para regla/reloj: tienen números

MOCA11

ABSTRACCIÓN

Similitud entre p. ej. manzana-naranja = fruta [] tren-bicicleta [] reloj-regla

moca11_respuesta

	Si	No
1. tren-bicicleta	<input type="radio"/>	<input type="radio"/>
2. reloj-regla	<input type="radio"/>	<input type="radio"/>

Recuerdo diferido

Administración: El examinador da las siguientes instrucciones: "Antes le leí una serie de palabras y le pedí que las recordase. Dígame ahora todas las palabras de las que se acuerde". El examinador marca las palabras que el paciente recuerde sin necesidad de pistas, por medio de una cruz (x) en el espacio reservado a dicho efecto.

Puntaje: Se asigna un punto por cada una de las palabras recordadas espontáneamente, sin pistas.

moca5_respuesta

	Si	No
1. Rostro	<input type="radio"/>	<input type="radio"/>
2. Seda	<input type="radio"/>	<input type="radio"/>
3. Iglesia	<input type="radio"/>	<input type="radio"/>
4. Clavel	<input type="radio"/>	<input type="radio"/>
5. Rojo	<input type="radio"/>	<input type="radio"/>

Orientación:

Administración: El examinador da las siguientes instrucciones: "Dígame en qué día estamos hoy". Si el paciente ofrece una respuesta incompleta, el examinador dice: "Dígame el año, el mes, el día del mes (fecha) y el día de la semana". A continuación, el examinador pregunta: "Dígame cómo se llama el lugar donde estamos ahora y en qué localidad nos encontramos".

Puntaje: Se asigna un punto por cada una de las respuestas correctas. El paciente debe decir la fecha exacta y el lugar exacto (hospital, clínica, oficina, etc.). No se asigna ningún punto si el paciente se equivoca por un día en el día del mes y de la semana.

MOCA12

ORIENTACIÓN	[]	Día del mes (fecha)	[]	Mes	[]	Año	[]	Día de la semana	[]	Lugar	[]	Localidad
-------------	-----	------------------------	-----	-----	-----	-----	-----	---------------------	-----	-------	-----	-----------

moca12_respuesta

	Si	No
1. Día del mes	<input type="radio"/>	<input type="radio"/>
2. Mes	<input type="radio"/>	<input type="radio"/>
3. Año	<input type="radio"/>	<input type="radio"/>
4. Día de la semana	<input type="radio"/>	<input type="radio"/>
5. Lugar	<input type="radio"/>	<input type="radio"/>
6. Localidad (comuna/ciudad)	<input type="radio"/>	<input type="radio"/>

TOTAL:

Sume todos los puntos obtenidos en el margen derecho de la hoja, con un máximo de 30 puntos. Añada un punto si el sujeto tiene 12 años o menos de estudios (si el MoCA es inferior a 30). Un puntaje igual o superior a 26 se considera normal.

MOCA_total

MAC-S**MAC-S Escala de quejas subjetivas de memoria parte 1****¿Qué tan bien recuerdas las siguientes cosas?**

	Muy mal	Mal	Ni mal ni bien	Bien	Muy bien
1. Regalos que hayas recibido en Navidad durante los últimos años	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Detalles de fiestas u ocasiones especiales de tu infancia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Orientación verbal a un lugar particular recibidas minutos antes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Detalles de eventos familiares que ocurrieron durante el ultimo año	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Cuál entrada ocupaste al entrar a un centro comercial , tienda grande, supermercado o mall.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Como llegar a una alguna locación geográfica que has visitado en alguna ocasión	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Con qué persona has ido a algún lugar semanas o meses atrás.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

MAC-S_parte1_sum

MAC-S Escala de quejas subjetivas de memoria parte 2**¿Qué tan frecuente te pasan las siguientes cosas?**

	Muy frecuente	Frecuente	Ni frecuente ni raro	En raras ocasiones	Muy raro
1. Olvidar con qué mozo ordenaste en un restaurant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Fallar en reconocer gente que te reconoce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Encontrarte con gente familiar, pero no recordar donde lo/a conociste	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

MAC-S_parte2-sum

MAC-S_total

AMI

Entrevista de Memoria Autobiográfica / Autobiographical Memory Interview (AMI)

Nota: Por favor siga las instrucciones que se brindan en el Manual para usar esta hoja de puntuación. Preste especial atención a las observaciones que se realizan en los apartados e ítems de la entrevista que han sido adaptados.

Para todas las preguntas sobre incidentes autobiográficos por favor refiérase a "Descripción de AMI", "Instrucciones para la administración de AMI" y Apéndice 1 del Manual para ver detalles de puntuaciones y ejemplos.

Encuadre:

"Esta es una entrevista en la que voy a hacerle algunas preguntas sobre su vida hasta ahora. Las preguntas son sobre sus días en la escuela, su vida cuando usted era un adulto joven y sus tiempos más recientes. Si usted está listo podemos comenzar."

Añadir: "En esta entrevista lo importante es que usted haga un esfuerzo por recordar detalles y eventos de su vida, pero también se quiere saber qué cosas recuerda usted bien y qué cosas no recuerda o recuerda con más dificultad. Por eso es muy importante que cuando usted no logre recordar algo que se le pregunte, usted conteste simplemente que no lo recuerda".

SECCIÓN A: INFANCIA

Parte 1: período antes de la escuela

Preguntas de semántica personal

1.1 Pregunte al sujeto por la dirección en donde él o ella vivían antes de ir a la escuela

Contexto urbano
2 puntos por la dirección completa
1 punto por la calle y el pueblo solamente
½ punto por la calle o el pueblo solamente

Contexto rural
2 puntos por el nombre del pueblo

- 0
- 0.5
- 1
- 1.5
- 2

1.2 Pregunte los nombres de tres amigos o vecinos del período anterior al inicio de la escuela.

1 punto por cada nombre completo
½ punto por cada nombre incompleto

- 0
- 0.5
- 1
- 1.5
- 2
- 2.5
- 3

Preguntas de incidentes autobiográficos

A1 Pida al sujeto evocar un incidente del período anterior al inicio de la escuela. "Un incidente o evento específico, tan específico como pueda recordarlo".

Claves: "¿Su primer recuerdo?", "¿Qué involucre a su hermano o hermana?"

Insistir al sujeto en que no tiene por qué ser un evento muy significativo o especial, lo que se quiere es ver si logra recordar un incidente específico que haya sucedido, puede ser algo que parezca sin importancia pero que lo recuerden claramente, mejor aún si se les "viene a la cabeza" una imagen mental del suceso.

(Se espera que los recuerdos de este período sean menos específicos que los recuerdos de períodos posteriores)
La puntuación es en términos de la riqueza descriptiva del recuento del incidente y su especificidad en tiempo y espacio.

0 puntos en ausencia de respuesta o respuesta basada en conocimiento general (semántico)

1 punto por recuerdo personal vago

2 puntos por recuerdo personal específico donde tiempo y espacio no se evocan o evento menos específico donde tiempo y espacio sí se evocan

3 puntos por recuerdo episódico específico en tiempo y espacio

- 0
- 1
- 2
- 3

Parte 2: Primera escuela (5-11 años)

Preguntas de semántica personal

2.1 Pregunte al sujeto por el nombre de la primera escuela a la que asistió

Contexto urbano

1 punto por el nombre de la escuela

Contexto rural

1 punto si refieren el nombre por el que se conocía a la escuela, por ejemplo, el nombre de la maestra

- 0
- 1

2.2 Pregunte por la localización de esta escuela (pueblo o ciudad es suficiente)

1 punto por el pueblo o ciudad

- 0
 1

2.3 Pregunte la edad del sujeto cuando comenzó en esta escuela

1 punto por la edad

Si el sujeto asistió a varias escuelas entre los 5-11 años, solo se requieren los detalles de la primera

- 0
 1

2.4 Pregunte al sujeto la dirección en la que él o ella vivía cuando comenzó en esta escuela

Si es la misma dirección ya señalada anteriormente, se pide al sujeto que la repita y se verifica. Contexto urbano

2 puntos por la dirección completa

1 punto por la calle y el pueblo solamente

½ punto por la calle o el pueblo solamente

Contexto rural

2 puntos por el nombre del pueblo

- 0
 0.5
 1
 1.5
 2

2.5 Pregunte los nombres de tres maestros(as) o amigos de esta escuela. Claves: "La/el maestra(o) principal", "Su maestro preferido", "Un amigo".

1 punto por cada nombre completo

½ punto por cada nombre incompleto

No pueden decirse los mismos nombres que antes, debe dar nueva información.

- 0
 0.5
 1
 1.5
 2
 2.5
 3

Preguntas de incidentes autobiográficos

A2 Pida al sujeto evocar un incidente que ocurriera mientras él o ella estaba en la escuela primaria o en la época de sus 5-11 años. "Un incidente o evento específico, tan específico como pueda recordarlo". Claves: "¿Qué involucrara a un maestro(a)?", "¿Qué involucrara a un amigo(a)?"
Insistir al sujeto en que no tiene por qué ser un evento muy significativo o especial, lo que se quiere es ver si logra recordar un incidente específico que haya sucedido, puede ser algo que parezca sin importancia pero que lo recuerden claramente, mejor aún si se les "viene a la cabeza" una imagen mental del suceso.

La puntuación es en términos de la riqueza descriptiva del recuento del incidente y su especificidad en tiempo y espacio.

0 puntos en ausencia de respuesta o respuesta basada en conocimiento general (semántico)

1 punto por recuerdo personal vago

2 puntos por recuerdo personal específico donde tiempo y espacio no se evocan o evento menos específico donde tiempo y espacio sí se evocan

3 puntos por recuerdo episódico específico en tiempo y espacio

- 0
 1
 2
 3

Parte 3: Período comprendido entre los 11-18 años

Preguntas de semántica personal

3.1 Pregunte al sujeto por el nombre de la escuela a la que asistía cuando tenía 13 años. Si el sujeto ya no asistía a la escuela, pregunte el nombre del lugar donde se encontraba en ese momento trabajando, el nombre del lugar donde trabajaba. Siempre que la información se repita se verifica.

1 punto por el nombre

- 0
 1

3.2 Pregunte por la localización de esta escuela o trabajo (pueblo o ciudad es suficiente)

1 punto por la localización correcta, el pueblo o ciudad

- 0
 1

3.3 Pregunte al sujeto si se graduó de la escuela. Si la respuesta es sí, pregunte por el año en que se graduó. Si la respuesta es no, pregunte por el año en que abandonó la escuela.

1 punto por el año correcto
Se acepta que digan la edad que tenían en ese momento

- 0
 1

3.4 Pregunte al sujeto la dirección en la que él o ella vivía cuando comenzó en esta escuela secundaria o trabajo (13 años, 11-18 años). Esta puede o no ser la misma respuesta dada en las anteriores preguntas y debe verificarse.

Contexto urbano
2 puntos por la dirección completa
1 punto por la calle y el pueblo solamente
½ punto por la calle o el pueblo solamente

Contexto rural
2 puntos por el nombre del pueblo

- 0
 0.5
 1
 1.5
 2

3.5 Pregunte los nombres de tres maestros(as) o amigos de esta escuela o trabajo. No es aceptable que repita los nombres de amigos dados previamente.
Claves: "La/el maestra(o) principal", "Su maestro preferido", "Un amigo".

1 punto por cada nombre completo
½ punto por cada nombre incompleto

- 0
 0.5
 1
 1.5
 2
 2.5
 3

Preguntas de incidentes autobiográficos

A3 Pida al sujeto evocar un incidente que ocurriera mientras él o ella estaba en la escuela secundaria o trabajo (11-18 años). "Un incidente o evento específico, tan específico como pueda recordarlo". Claves: "¿Qué involucrara a un maestro(a)?", "¿Qué involucrara a un amigo(a)?" Insistir al sujeto en que no tiene por qué ser un evento muy significativo o especial, lo que se quiere es ver si logra recordar un incidente específico que haya sucedido, puede ser algo que parezca sin importancia pero que lo recuerden claramente, mejor aún si se les "viene a la cabeza" una imagen mental del suceso.

La puntuación es en términos de la riqueza descriptiva del recuento del incidente y su especificidad en tiempo y espacio.

0 puntos en ausencia de respuesta o respuesta basada en conocimiento general (semántico)

1 punto por recuerdo personal vago

2 puntos por recuerdo personal específico donde tiempo y espacio no se evocan o evento menos específico donde tiempo y espacio sí se evocan

3 puntos por recuerdo episódico específico en tiempo y espacio

0

1

2

3

Infancia semantico

Infancia Incidentes Autobiográficos

Puntaje Infancia

SECCIÓN B: ADULTOS JÓVENES

Parte 4: Profesión (mayor de 18 años y década de los veinte)

Preguntas de semántica personal

4.1 Pregunte al sujeto si obtuvo alguna otra formación/calificación después de dejar la escuela (se acepta formación militar).

1 punto por formaciones correctamente evocadas o "no formación adicional"

0 puntos por "No sé" o respuestas imprecisas

0

1

4.2 Cualquiera de:

4.2.a.

Si el sujeto sí obtuvo una formación pregunte el tipo de formación, nombre del curso y la institución.

4.2.b

Si el sujeto no obtuvo formación adicional, pregunte por su trabajo cuando él tenía 18 años y el nombre de la organización o lugar donde trabajaba.

4.2.a

1 punto por el nombre del curso o tipo de formación

1 punto por el nombre de la institución o lugar

4.2.b

1 punto por la descripción de su primer trabajo

1 punto por el nombre de la organización

- 0
 1
 2

4.3 Pregunte al sujeto la dirección en la que él o ella vivía cuando obtuvo esta formación o comenzó en este trabajo. Una dirección repetida debe corroborarse en su exactitud.

Contexto urbano

2 puntos por la dirección completa

1 punto por la calle y el pueblo solamente

½ punto por la calle o el pueblo solamente

Contexto rural

2 puntos por el nombre del pueblo

- 0
 0.5
 1
 1.5
 2

4.4 Pregunte los nombres de tres maestros(as) o amigos de esta escuela o trabajo. No se acepta que el sujeto repita los nombres de amigos dados previamente.

Claves: "El director" o "El jefe", "La/el tutor/supervisor/maestra(o)", "el capataz", "Compañeros de clase", "Compañeros de trabajo".

1 punto por cada nombre completo

½ punto por cada nombre incompleto

- 0
 0.5
 1
 1.5
 2
 2.5
 3

Preguntas de incidentes autobiográficos

A4 Pida al sujeto evocar un incidente de su período de formación o de su trabajo cuando tenía alrededor de 18 años. "Un incidente o evento específico, tan específico como pueda recordarlo". Claves: "¿Su primer día en el trabajo o en ese lugar de formación?", "¿Un incidente con un amigo?" Si el sujeto nunca ha trabajado o ha tenido entrenamiento formal, debe preguntársele por un incidente de los primeros años de su adultez.

Insistir al sujeto en que no tiene por qué ser un evento muy significativo o especial, lo que se quiere es ver si logra recordar un incidente específico que haya sucedido, puede ser algo que parezca sin importancia pero que lo recuerden claramente, mejor aún si se les "viene a la cabeza" una imagen mental del suceso.

La puntuación es en términos de la riqueza descriptiva del recuento del incidente y su especificidad en tiempo y espacio.

0 puntos en ausencia de respuesta o respuesta basada en conocimiento general (semántico)

1 punto por recuerdo personal vago

2 puntos por recuerdo personal específico donde tiempo y espacio no se evocan o evento menos específico donde tiempo y espacio sí se evocan

3 puntos por recuerdo episódico específico en tiempo y espacio

- 0
 1
 2
 3

Parte 5: Boda

Preguntas de semántica personal

5.1.

Si el sujeto se casó cuando tenía 18-19 años, en la década de sus veinte años o inicios de sus treinta años, pregunte por la fecha de su matrimonio y pregunte por el lugar en donde se celebró la boda (pueblo o ciudad es suficiente)

Si el sujeto no se casó en este período de tiempo, pregunte por el nombre de otra persona a cuya boda asistió el sujeto en la década de sus veinte años y pregunte por el lugar en donde esta boda se celebró (pueblo o ciudad es suficiente).

5.1.a

1 punto por la fecha correcta del matrimonio

½ punto solo por el año

1 punto por el lugar correcto de la boda (pueblo o ciudad)

5.1.b

1 punto por el nombre correcto de la persona

1 punto por el lugar correcto de la boda

- 0
 0.5
 1
 1.5
 2

5.2 Pregunte al sujeto la dirección en la que él o ella vivía antes de la boda.

Contexto urbano

2 puntos por la dirección completa

1 punto por la calle y el pueblo solamente

½ punto por la calle o el pueblo solamente

Contexto rural

2 puntos por el nombre del pueblo

- 0
 0.5
 1
 1.5
 2

5.3 Pregunte al sujeto la dirección en la que él o ella vivía inmediatamente después de la boda. Si el sujeto repite la dirección dada en 5.2, el entrevistador debe corroborar que la dirección dada no tenga cambios.

Contexto urbano
2 puntos por la dirección completa
1 punto por la calle y el pueblo solamente
½ punto por la calle o el pueblo solamente

Contexto rural
2 puntos por el nombre del pueblo

- 0
- 0.5
- 1
- 1.5
- 2

5.4 Pregunte al sujeto el nombre del padrino de esta boda (si no hubo padrino, el nombre de un invitado es suficiente).

1 punto por el nombre completo
½ punto por el nombre incompleto

- 0
- 0.5
- 1

5.5 Pregunte al sujeto el nombre de la madrina de esta boda (si no hubo madrina, el nombre de un invitado es suficiente).

1 punto por el nombre completo
½ punto por el nombre incompleto

- 0
- 0.5
- 1

5.6 Pregunte al sujeto el nombre de la madre del novio/novia.

1 punto por el nombre correcto
½ punto por el nombre incompleto

- 0
 0.5
 1

Preguntas de incidentes autobiográficos

A5 Pida al sujeto evocar un incidente de su boda o bien cualquier boda a la que el sujeto asistiera en la década de sus veinte años. "Un incidente o evento específico, tan específico como pueda recordarlo". Claves: "¿Un incidente involucrando un invitado de la boda?", "¿Un incidente en la fiesta?"
Insistir al sujeto en que no tiene por qué ser un evento muy significativo o especial, lo que se quiere es ver si logra recordar un incidente específico que haya sucedido, puede ser algo que parezca sin importancia pero que lo recuerden claramente, mejor aún si se les "viene a la cabeza" una imagen mental del suceso.

La puntuación es en términos de la riqueza descriptiva del recuento del incidente y su especificidad en tiempo y espacio.

0 puntos en ausencia de respuesta o respuesta basada en conocimiento general (semántico)

1 punto por recuerdo personal vago

2 puntos por recuerdo personal específico donde tiempo y espacio no se evocan o evento menos específico donde tiempo y espacio sí se evocan

3 puntos por recuerdo episódico específico en tiempo y espacio

- 0
 1
 2
 3

Parte 6: Hijos o conocer a una persona especial/importante en la década de los veinte años

Preguntas de semántica personal

6.1 Pregunte al sujeto el nombre de su primer hijo/a (o sobrino, sobrina o hijo de un amigo cercano)

1 punto por el nombre correcto

- 0
 1

6.2 Pregunte por la fecha de nacimiento de este niño/a (el año es suficiente) (o edad de sobrino, sobrina, hijo de un amigo cercano).

½ punto por año de nacimiento correcto

- 0
 0.5

6.3 Pregunte por el lugar de nacimiento de este niño/a (pueblo o ciudad es suficiente).

½ punto por el lugar de nacimiento correcto

- 0
 0.5

6.4 Pregunte al sujeto el nombre de su segundo hijo/a (u otro sobrino, sobrina o hijo de un amigo cercano)

1 punto por el nombre correcto

- 0
 1

6.5 Pregunte por la fecha de nacimiento de este niño/a (el año es suficiente).

½ punto por año de nacimiento correcto

- 0
 0.5

6.6 Pregunte por el lugar de nacimiento de este niño/a (pueblo o ciudad es suficiente).

½ punto por el lugar de nacimiento correcto

- 0
 0.5

Preguntas de incidentes autobiográficos

A6 Pida al sujeto evocar el primer encuentro con alguien especial o importante que haya conocido en la década de sus veinte años. El primer encuentro con el/la esposo/a es aceptable. "Un incidente o evento específico, tan específico como pueda recordarlo".

Claves: "¿Conocer a alguien en una entrevista o trabajo?", "¿Conocer a alguien en un día festivo?"

Insistir al sujeto en que no tiene por qué ser un evento muy significativo o especial, lo que se quiere es ver si logra recordar un incidente específico que haya sucedido, puede ser algo que parezca sin importancia pero que lo recuerden claramente, mejor aún si se les "viene a la cabeza" una imagen mental del suceso.

La puntuación es en términos de la riqueza descriptiva del recuento del incidente y su especificidad en tiempo y espacio.

0 puntos en ausencia de respuesta o respuesta basada en conocimiento general (semántico)

1 punto por recuerdo personal vago

2 puntos por recuerdo personal específico donde tiempo y espacio no se evocan o evento menos específico donde tiempo y espacio sí se evocan

3 puntos por recuerdo episódico específico en tiempo y espacio

0

1

2

3

Adulter Joven Semantico

Adulter Joven Autobiográfico

Puntaje Adulter Joven

SECCIÓN C: VIDA RECIENTE

Parte 7: Hospital o institución presente

Preguntas de semántica personal

7.1 Pregunte al sujeto por el nombre del hospital o lugar (institución, residencia, taller o club) donde se le está viendo actualmente.

1 punto por el nombre correcto del hospital o institución

0

1

7.2 Pregunte al sujeto por la ubicación del hospital o institución (pueblo o ciudad es suficiente).

1 punto por la ubicación correcto

0

1

7.3 Pregunte al sujeto por el año o mes cuando llegó (o se mudó o inició) al hospital o institución. Si el sujeto no vive en una residencia, no está ingresado en una institución ni asiste a un taller o club, solicitar que diga cuándo fue su última cita médica.

1 punto por el mes o año correcto

- 0
 1

7.4 Pregunte al sujeto por la dirección en la que él o ella vive actualmente.

Contexto urbano
2 puntos por la dirección completa
1 punto por la calle y el pueblo solamente
½ punto por la calle o el pueblo solamente

Contexto rural
2 puntos por el nombre del pueblo

- 0
 0.5
 1
 1.5
 2

7.5 Pregunte los nombres de tres miembros del personal o compañeros pacientes del hospital o institución. Si esto no es apropiado, pregunte por el nombre de tres vecinos o colegas actuales.

1 punto por cada nombre completo
½ punto por cada nombre incompleto

- 0
 0.5
 1
 1.5
 2
 2.5
 3

Preguntas de incidentes autobiográficos

A7 Pida al sujeto evocar un incidente que haya ocurrido en el presente hospital o institución. Si es necesario, es permisible para el sujeto evocar un incidente de alguna visita externa previa al hospital o al médico. "Un incidente o evento específico, tan específico como pueda recordarlo". Claves: "¿Involucrando a otros pacientes?", "¿Qué tenga que ver con los doctores o enfermeras?"

O si el sujeto está siendo visto en otro tipo de institución, dos claves apropiadas deben usarse, por ejemplo: "¿Involucrando al guardián/celador?", "¿Involucrando al personal de cuidado diario?", "¿Involucrando al trabajador social?", "¿Involucrando al psicólogo?"

Insistir al sujeto en que no tiene por qué ser un evento muy significativo o especial, lo que se quiere es ver si logra recordar un incidente específico que haya sucedido, puede ser algo que parezca sin importancia pero que lo recuerden claramente, mejor aún si se les "viene a la cabeza" una imagen mental del suceso.

La puntuación es en términos de la riqueza descriptiva del recuento del incidente y su especificidad en tiempo y espacio.

0 puntos en ausencia de respuesta o respuesta basada en conocimiento general (semántico)

1 punto por recuerdo personal vago

2 puntos por recuerdo personal específico donde tiempo y espacio no se evocan o evento menos específico donde tiempo y espacio sí se evocan

3 puntos por recuerdo episódico específico en tiempo y espacio

- 0
 1
 2
 3

Parte 8: Hospitalizaciones o instituciones previas (en los últimos 5 años)

Preguntas de semántica personal

8.1 Pregunte al sujeto por el nombre del último (previo) hospital o lugar (institución) a donde asistía (debe ser de los últimos 5 años). ¿Le veían antes en otro hospital?

1 punto por el nombre correcto del hospital o institución

- 0
 1

8.2 Pregunte al sujeto por la ubicación del hospital o institución o médico al que visitó (pueblo o ciudad es suficiente).

1 punto por la ubicación correcto

- 0
 1

8.3 Pregunte al sujeto por el año o mes cuando llegó al hospital o institución, o hizo su visita.

1 punto por el mes o año correcto

El mes si fue dentro de los últimos 12 meses. Sino, el año es suficiente

- 0
 1

8.4 Pregunte al sujeto por la dirección en la que él o ella vivía cuando atendía o visitaba este hospital, institución o médico. Si repite la dirección anterior, corroborarla.

Contexto urbano
 2 puntos por la dirección completa
 1 punto por la calle y el pueblo solamente
 ½ punto por la calle o el pueblo solamente

Contexto rural
 2 puntos por el nombre del pueblo

- 0
 0.5
 1
 1.5
 2

8.5 Pregunte los nombres de tres amigos, colegas o conocidos conectados con este hospital o institución. Si esto no es apropiado, pregunte por el nombre de tres personas que han visitado al sujeto en el último año.

1 punto por cada nombre completo
 ½ punto por cada nombre incompleto

- 0
 0.5
 1
 1.5
 2
 2.5
 3

Preguntas de incidentes autobiográficos

A8 Pida al sujeto evocar un incidente que involucre a un familiar o visitante en el último año. Una visita al hogar del sujeto es aceptable. "Un incidente o evento específico, tan específico como pueda recordarlo". Claves: "¿Una visita a o por un familiar?", "¿Qué involucre algunas noticias sobre un familiar?"
 Insistir al sujeto en que no tiene por qué ser un evento muy significativo o especial, lo que se quiere es ver si logra recordar un incidente específico que haya sucedido, puede ser algo que parezca sin importancia pero que lo recuerden claramente, mejor aún si se les "viene a la cabeza" una imagen mental del suceso.

La puntuación es en términos de la riqueza descriptiva del recuento del incidente y su especificidad en tiempo y espacio.

0 puntos en ausencia de respuesta o respuesta basada en conocimiento general (semántico)
 1 punto por recuerdo personal vago
 2 puntos por recuerdo personal específico donde tiempo y espacio no se evocan o evento menos específico donde tiempo y espacio sí se evocan
 3 puntos por recuerdo episódico específico en tiempo y espacio

- 0
 1
 2
 3

Parte 9: Última navidad o fiesta de Reyes

Preguntas de semántica personal
 9.1 Pregunte al sujeto dónde pasó su última navidad

1 punto por el lugar correcto

- 0
 1

9.2 Pregunte por el nombre de la persona con quien pasó su última navidad

1 punto por el nombre completo
½ punto por el nombre incompleto

- 0
 0.5
 1

Parte 10: Día festivo/vacaciones o viaje

Preguntas de semántica personal

10.1 Pida al sujeto que nombre el lugar que visitó en un día festivo/vacaciones o en un viaje en el último año. De ser necesario, un lugar visitado en los últimos cinco años es aceptable. (El nombre del pueblo o ciudad es suficiente).

1 punto por el lugar donde pasó el día festivo o que el sujeto visitó

- 0
 1

10.2 Pregunte cuándo ocurrió este día festivo/vacaciones o viaje. Si ocurrió en el último año, el mes es requerido. Si ocurrió en los últimos cinco años, el año o número de años desde entonces es suficiente.

1 punto por el mes o año correcto

- 0
 1

10.3 Pregunte por el nombre de la persona que acompañó al sujeto en su día festivo/vacaciones o viaje. Cualquier persona que haya acompañado al sujeto en el día festivo/vacaciones o viaje es aceptable.

1 punto por el nombre completo
½ punto por el nombre incompleto

- 0
 0.5
 1

 Preguntas de incidentes autobiográficos

A10 Pida al sujeto evocar un incidente que haya ocurrido mientras estaba en su día festivo/vacaciones o viaje en el último año (o últimos cinco años de ser necesario). "Un incidente o evento específico, tan específico como pueda recordarlo".

Claves: "En el lugar que visitó", "¿Involucrando a alguien que conoció?"

Insistir al sujeto en que no tiene por qué ser un evento muy significativo o especial, lo que se quiere es ver si logra recordar un incidente específico que haya sucedido, puede ser algo que parezca sin importancia pero que lo recuerden claramente, mejor aún si se les "viene a la cabeza" una imagen mental del suceso.

La puntuación es en términos de la riqueza descriptiva del recuento del incidente y su especificidad en tiempo y espacio.

0 puntos en ausencia de respuesta o respuesta basada en conocimiento general (semántico)

1 punto por recuerdo personal vago

2 puntos por recuerdo personal específico donde tiempo y espacio no se evocan o evento menos específico donde tiempo y espacio sí se evocan

3 puntos por recuerdo episódico específico en tiempo y espacio

- 0
 1
 2
 3

 Vida Reciente Semántico

 Vida Reciente Autobiográfico

 Puntaje Vida Reciente

 Total semantico

 Total incidentes autobiograficos

 AMI_Total

APPENDIX B

Health Sciences Ethics Committee Approval



ACTA DE RESOLUCIÓN
COMITÉ ÉTICO CIENTÍFICO DE CIENCIAS DE LA SALUD UC
Re-acreditado por SEREMI de Salud
Resolución Exenta N° 012793 del 27 de octubre de 2021

NUEVO ESTUDIO

Fecha y N° de Sesión: 03 de noviembre de 2022; Sesión Ordinaria N°19

Investigador Responsable: Emmanuel Joshua Méndez Hernández

ID Protocolo: 220813001

Título del Proyecto: Procesos subyacentes de alteraciones de memorias episódicas y autobiográficas en esquizofrenia

Facultad/Unidad Académica: Facultad de Ciencias Sociales, Pontificia Universidad Católica de Chile

Académico Responsable: Felix Bacigalupo Izquierdo

Sitio de realización: Pontificia Universidad Católica de Chile, COSAM El Bosque, Hospital El Pino.

Financiamiento: ANID Doctorado Becas Chile

Miembros del Comité que participaron en la aprobación del estudio:

Mg. Ivonne Vargas Celis, Presidente subrogante

Mg. Mónica Vergara Quezada, Secretaria ejecutiva

Sr. Jorge Muñoz Castillo, Abogado miembro externo

Srta. Alyssa Garay Navea, Representante de la comunidad



EU Mónica Cifuentes Soro, miembro externo

Dra. Colomba Cofré D., Departamento de Gastroenterología y Nutrición Pediátrica

Dr. Diego García-Huidobro, Departamento Medicina Familiar

Dr. Juan Francisco Miquel, Departamento de Gastroenterología

Dr. Jorge Jalil, Departamento de Enfermedades Cardiovasculares

Klgo. Nicolás Quintanilla, Unidad de ética y seguridad en investigación PUC

Dra. Marisa Torres Hidalgo, Departamento de Salud Pública

Dr. Luis Villarroel Del Pino, Departamento de Salud Pública

Documentos recibidos por el Comité:

- Carta Presentación Investigador Responsable
- Carta Apoyo Jefe de Departamento
- Responsabilidad del Investigador
- Declaración Simple del Investigador Responsable

Documentos revisados y aprobados por el Comité:

- Consentimiento Informado General Adultos- 220813001
- Formulario solicitud revisión ética-220813001



Considerando que:

- 1- Los investigadores referidos cuentan con la experiencia necesaria para la conducción y el desarrollo de este tipo de estudio;
- 2- La metodología descrita es apropiada para el cumplimiento de los objetivos del estudio, de acuerdo con los estándares internacionales de rigor científico;
- 3- Durante la conducción del estudio se garantiza un balance riesgo/beneficio favorable para los participantes, por cuanto sólo se realizan procedimientos de bajo riesgo;
- 4- La población por estudiar no es considerada vulnerable / Pese a considerar la población vulnerable, el protocolo resguarda la seguridad y bienestar de los participantes;
- 5- Se ha contemplado el resguardo de la confidencialidad de la información sensible e identificable en la difusión de los resultados, por lo que no introduce un riesgo de menoscabo para la intimidad de los participantes; y
- 6- Los participantes ingresarán voluntariamente luego de ser adecuadamente informados sobre los aspectos esenciales del estudio, sus deberes y derechos, y los plazos estipulados para el cumplimiento de los objetivos de la investigación.



Constatado que el texto del documento de Consentimiento Informado contiene:

- 1- La descripción general de los objetivos de la investigación;
- 2- El detalle de los procedimientos que involucra la participación en este estudio;
- 3- Los antecedentes sobre el uso que se dará a la información obtenida a partir de cada procedimiento de la investigación;
- 4- El compromiso respecto a la utilización actual y futura de la información, la que sólo se realizará dentro de los marcos del presente estudio y para el logro de dichos objetivos;
- 5- El resguardo de la confidencialidad y el anonimato de la información recogida, según corresponde a cada procedimiento del estudio;
- 6- El detalle respecto del costo en tiempo que significa la participación en el estudio;
- 7- La información sobre los beneficios y derechos por la participación en la investigación; y
- 8- La voluntariedad de la participación y la garantía para cada participante de hacer abandono del estudio, sin repercusión alguna.

Resolución CEC-Salud UC:

Este proyecto cuenta con la opinión favorable del Comité con fecha **03 de noviembre de 2022**, en la **sesión ordinaria N°19**, la que tiene vigencia de un año.



El Investigador Responsable deberá solicitar la renovación anual de la presente aprobación ética con 30 días de anticipación al vencimiento de la fecha de aprobación original, si desea continuar con el estudio. Si no ha recibido la respuesta oficial a su solicitud, el investigador deberá detener las actividades del proyecto, no podrá enrolar a ningún nuevo participante y no podrá proceder con el análisis de los datos.

Para iniciar el proceso de consentimiento y de reclutamiento se debe disponer previamente de la última versión aprobada y timbrada del documento de Consentimiento Informado. De este modo, el Investigador Responsable velará por la realización de estos procedimientos, utilizando la copia de la versión original (timbrada, fechada y firmada por el CEC-Salud UC). Asimismo, debido a la contingencia actual de pandemia, y en virtud del resguardo del balance riesgo beneficio favorable a los participantes, el CEC-Salud UC indica al Investigador Responsable tomar los resguardos en el proceso y firma de acta del consentimiento informado para evitar posible contagio asociado a este procedimiento y a cualquier otra actividad del estudio

En la eventualidad de requerir cualquier modificación al estudio o a los documentos aprobados originalmente, el investigador deberá notificarlo al Comité por medio de una



enmienda (a través de plataforma) para la evaluación y emisión de una nueva acta de resolución ética. (ID: 220813001)

MG. Mónica Vergara Quezada.
Secretaria Ejecutiva
CEC-Salud UC



MG. Ivonne Vargas Celis
Presidenta (S)
CEC-Salud UC

Santiago, 15 de noviembre de 2022

EN CASO DE CUALQUIER DUDA SE LE SOLICITA CONTACTARSE CON EL CEC-Salud UC

Se certifica que la información contenida en el presente documento es correcta y que refleja el Acta del Comité Ético Científico de Ciencias de la Salud UC (CEC-Salud UC). Este Comité adhiere a los principios éticos de la Pontificia Universidad Católica de Chile, que considera como eje fundamental el respeto a la dignidad de la persona humana en cualquier condición. Este Comité cumple además con las Guías de buena práctica clínica definidas por la Conferencia Internacional de Armonización (GCP-ICH); y con las leyes chilenas 19.628; 20.120; 20.584 y 20.850 que modifica el Código Sanitario

Health Sciences Ethics Committee Amendment



**ACTA DE RESOLUCIÓN
COMITÉ ÉTICO CIENTÍFICO DE CIENCIAS DE LA SALUD UC
Re-acreditado por SEREMI de Salud
Resolución Exenta N° 012793 del 27 de octubre de 2021**

NUEVA DOCUMENTACIÓN/ENMIENDA

Fecha y N° de Sesión: 09 de marzo de 2023; Sesión Ordinaria N°03

Investigador Responsable: Emmanuel Joshua Méndez Hernández

ID Protocolo: 220813001

Título del Proyecto: Procesos subyacentes de alteraciones de memorias episódicas y autobiográficas en esquizofrenia

Facultad/Unidad Académica: Facultad de Ciencias Sociales, Pontificia Universidad Católica de Chile

Académico Responsable: Felix Bacigalupo Izquierdo

Sitio de realización: Pontificia Universidad Católica de Chile, COSAM El Bosque, Hospital El Pino.

Financiamiento: ANID Doctorado Becas Chile

Miembros del Comité que participaron en la aprobación del estudio:

Mg. Ivonne Vargas Celis, Presidente

Dr. Francisco Acevedo Claros, Vice-presidente

Mg. Mónica Vergara Quezada, Secretaria Ejecutiva

Klgo. Nicolás Quintanilla Rojas, Profesional de apoyo UESI

Sr. Jorge Muñoz Castillo, Abogado miembro externo

Srta. Alyssa Garay Navea, Representante de los intereses de la comunidad



EU. Mónica Cifuentes Soro, miembro externo

Dra. Colomba Cofré Dougnac, Departamento de Gastroenterología y Nutrición Pediátrica

EU Víctor Contreras Ibacache, Departamento de Anestesiología

Dr. Jorge Jalil Milad, Departamento de Enfermedades Cardiovasculares

Dr. Juan Francisco Miquel Poblete, Departamento de Gastroenterología

Sra. Ximena Ortega Fuenzalida, Ingeniero Agrónomo, miembro externo

Dr. Luis Villarroel del Pino, Departamento de Salud Pública

Srta. Constanza Richards, miembro externo

Documentos recibidos por el Comité:

Carta del Investigador Responsable solicitando la revisión y aprobación de la enmienda por medio de la presentación de nueva documentación del estudio de la referencia, de fecha 23 de diciembre de 2022.

Documentos revisados y aprobados por el Comité:

- Consentimiento_informado_220813001_22_diciembre_2022.docx
- Sistema de recogida REDCAP

**Considerando que:**

- 1- El presente protocolo de investigación contó con la opinión favorable de un comité ético científico (CEC) antes de iniciar su ejecución, según consta en el **Acta de Resolución Oficial** del 03 de noviembre de 2022;
- 2- Al estudio se le realizará la modificación que fue debidamente señalada, justificada al Comité y respaldada por los documentos correspondientes; y
- 3- En lo demás, el estudio se continuará desarrollando en los mismos términos aprobados originalmente.

Resolución CEC-Salud UC:

La solicitud de enmienda al protocolo de la referencia ha sido revisada junto a la nueva documentación presentada y cuenta con la opinión favorable del Comité con fecha **09 de marzo de 2023**, en la **sesión ordinaria N°03**.

Para iniciar el proceso de consentimiento y de reclutamiento se debe disponer previamente de la última versión aprobada y timbrada del documento de Consentimiento Informado. De este modo, el Investigador Responsable velará por la realización de estos procedimientos, utilizando la copia de la versión original (timbrada, fechada y firmada por



el CEC-Salud UC).

En la eventualidad de requerir cualquier modificación al estudio o a los documentos aprobados originalmente, el investigador deberá notificarlo al Comité por medio de una enmienda (a través de plataforma) para la evaluación y emisión de una nueva acta de resolución ética. **(ID: 220813001)**

MG. Mónica Vergara Quezada.
Secretaria Ejecutiva
CEC-Salud UC



MG. Ivonne Vargas Celis
Presidenta
CEC-Salud UC

Santiago, 22 de marzo de 2023

EN CASO DE CUALQUIER DUDA SE LE SOLICITA CONTACTARSE CON EL CEC-Salud UC

Se certifica que la información contenida en el presente documento es correcta y que refleja el Acta del Comité Ético Científico de Ciencias de la Salud UC (CEC-Salud UC). Este Comité adhiere a los principios éticos de la Pontificia Universidad Católica de Chile, que considera como eje fundamental el respeto a la dignidad de la persona humana en cualquier condición. Este Comité cumple además con las Guías de buena práctica clínica definidas por la Conferencia Internacional de Armonización (GCP-ICH); y con las leyes chilenas 19.628; 20.120; 20.584 y 20.850 que modifica el Código Sanitario

Southern Metropolitan Service Ethics Committee Approval



COMITÉ ÉTICO CIENTÍFICO
Q.F.VRS/cml

MEMORANDUM N°: 001/2023

MAT.: Resultado de evaluación de Protocolo código 125-07122022

Santiago, 5 de enero de 2023

DR. EMMANUEL MÉNDEZ HERNÁNDEZ
INVESTIGADOR PRINCIPAL
PROYECTO: "Procesos subyacentes de alteraciones en memorias episódicas y autobiográficas en esquizofrenia"
HOSPITAL EL PINO – COSAM EL BOSQUE
PRESENTE

Informamos a Ud. que el Comité Ético Científico (CEC) del Servicio de Salud Metropolitano Sur (SSMS), tomó conocimiento y evaluó los siguientes antecedentes del Proyecto "Procesos subyacentes de alteraciones en memorias episódicas y autobiográficas en esquizofrenia", recepcionado el 07/12/2022:

- I. **Antecedentes revisados y evaluados por el CEC SSMS, en sesiones del 13/12/2022 y 03/01/2023:** (se adjunta asistencia)
 1. Carta de intención, fechada 04/11/2022, dirigida a Pdta. CEC SSMS, firmada por Dr. Emmanuel Méndez Hernández, Médico Psiquiatra, Investigador Principal.
 2. Solicitud de liberación de arancel, fechada 15/11/2022, dirigida a Director (S) SSMS, Dr. Mariano Moreno Boza, firmado por Investigador Principal.
 3. Carta, fechada 22/11/2022, dirigida a Sr. Patricio Vera Mutizabal, Director Hospital El Pino, con pie de firma de Investigador Principal.
 4. Carta, fechada 25/11/2022, dirigida a Dr. Emmanuel Méndez Hernández, Investigador Principal, firmada por Sr. Patricio Vera Mutizabal, Director Hospital El Pino.
 5. Certificado de autorización, fechado 16/11/2022, firmado por Dr. Guillermo Vergara Harris, Jefe Servicio de Salud Mental, Hospital El Pino.
 6. Certificado, fechado 03/11/2022, firmado por Investigador Principal, informado que no ha participado de estudios con anterioridad.
 7. Certificado de Autorización, fechado 28/11/2022, firmado por Sra. Marta Martínez Lizana, Directora COSAM El Bosque.
 8. Acta de resolución, fechada 03/11/2022, firmada por MG. Mónica Vergara Quezada, Secretaria Ejecutiva y MG. Ivonne Vargas Celis, Presidenta (S), ambas del CEC-Salud UC, Pontificia Universidad Católica de Chile.
 9. **Formulario Solicitud de revisión ética para la investigación que involucre seres humanos o uso de muestras humanos.**
 10. **Documento de Consentimiento Informado, 26/10/2022.**
 11. **Consentimiento Informado Abreviado.**
 12. **Afiche ¿Quieres saber más sobre tu memoria?**
 13. **Escala de los síndromes positivo y negativo PANSS.**
 14. **Anexo 1. Organización de la entrevista de la PANSS.**
 15. **Anexo 2. Prototipos de preguntas para la entrevista de la PANSS.**
 16. **Anexo 3. Hoja de puntuación de la PANSS.**
 17. **Anexo 4. Tabla de conversión de las puntuaciones brutas de la PANSS en percentiles.**
 18. **CORE-OM**
 19. **Entrevista de Memoria Autobiográfica.**
 20. **MINI Entrevista Neuropsiquiátrica Internacional.**
 21. **Evaluación Cognitiva Montreal.**
 22. **Formulario Carta de Compromiso Investigador, fechado 15/11/22, firmado por Investigador Principal, Dr. Emmanuel Méndez Hernández.**
 23. **Formulario Carta de Compromiso, fechado 15/11/2022, firmado por Investigador Principal.**
 24. **Diploma de CITI Program de Dr. Emmanuel Méndez H.**
 25. **Curriculum Vitae de Dr. Emmanuel Méndez Hernández.**

- II. El proyecto y los documentos señalados en el Punto I han sido analizados según los postulados de la Declaración de Helsinki, de las Pautas Éticas Inter/nacionales para la Investigación Biomédica en Seres Humanos CIOMS 2016, de las Guías de Buenas Prácticas Clínicas de ICH 1996 y la Normativa Nacional, tales como la Norma N° 57 del año 2001, la Ley 20.120, Ley 20.584, lo que está contenido junto a otros lineamientos en nuestro Reglamento Interno del C.E.C. del S.S.M. Sur, versión N° 6 del 07/04/2020.
- III. Se recepcionan conforme las observaciones corregidas, de acuerdo a lo solicitado por el CEC mediante Memorandum N° 204 del 23/12/2022
- IV. Por lo anterior y sobre la base de esta información, el Comité Ético Científico (C.E.C.) del S.S.M.S. determina, con fecha **03/01/2023**, en base a los siguientes aspectos de este estudio:
- A) Carácter de la población a estudiar: Personas adultas con diagnóstico de esquizofrenia compensados bajo control en el COSAM El Bosque y el Servicio de Psiquiatría del Hospital El Pino.
- B) Utilidad del proyecto: Aportar en el conocimiento de los procesos en el área de la memoria episódica y autobiográfica en personas con esquizofrenia y personas sin trastornos psiquiátricos.
- C) Riesgos y beneficios: Riesgos: Existe la posibilidad de malestar emocional al recordar episodios complejos de la vida. Beneficios: contribuir al conocimiento en el área del aprendizaje de memoria episódica y autobiográfica. Además de participar en talleres de prevención del deterioro cognitivo.
- D) Protección de los participantes: Sí, existe el compromiso del investigador por el manejo anónimo de los datos y resguardo de la información. Además de disponer de procedimientos para manejar cualquier inconveniente o descompensación del paciente.
- E) Notificación oportuna de reacciones adversas: Sí.
- F) Compromiso del Investigador Responsable en la notificación de los resultados del estudio al finalizar el proyecto: Sí.
- G) Requiere seguimiento en terreno a través de visita del CEC: Se informa a la autoridad sanitaria de la evaluación bioética para que el investigador gestione la autorización correspondiente por tratarse de pacientes con esquizofrenia compensados.

Que éste no presenta reparos Éticos y lo aprueban por un año para el Hospital El Pino y COSAM El Bosque hasta el 03/01/2024.

Se remiten firmados, timbrados y fechados:

1. Documento de Consentimiento Informado, 26/10/2022.
2. Consentimiento Informado Abreviado.
3. Afiche ¿Quieres saber más sobre tu memoria?
4. Escala de los síndromes positivo y negativo PANSS.
5. Anexo 1. Organización de la entrevista de la PANSS.
6. Anexo 2. Prototipos de preguntas para la entrevista de la PANSS.
7. Anexo 3. Hoja de puntuación de la PANSS.
8. Anexo 4. Tabla de conversión de las puntuaciones brutas de la PANSS en percentiles.
9. CORE-OM
10. Entrevista de Memoria Autobiográfica.
11. MINI Entrevista Neuropsiquiátrica Internacional.
12. Evaluación Cognitiva Montreal

V. Además, se adjuntan los siguientes documentos:

- Asistencia de la Reunión del Comité Ético Científico del S.S.M.S.
- Declaración de Cumplimiento de las Buenas Prácticas Clínicas, Vigencia: Julio 2021 a Diciembre 2022.

Solicitamos a Ud. comunicar a este Comité:

1. El inicio de la ejecución del estudio.
2. Estado de avance y los eventos observados asociados y no asociados con el estudio.
3. Rechazo de participación de los sujetos.
4. Número de sujetos enrolados.
5. Cualquier antecedente importante que se observe durante la ejecución de la investigación.
6. Finalizado el estudio, remitir informe, cuyo plazo máximo es 03/01/2024.

Saludan atentamente,

SERVICIO DE SALUD
METROPOLITANO SUR
PRESIDENTA
D.F. VERÓNICA RIVERA SCIARAFFIA
PRESIDENTA
COMITÉ ÉTICO CIENTÍFICO
S.S.M.S.

DR. HECTOR JORQUERA VERGARA
SECRETARIO
COMITÉ ÉTICO CIENTÍFICO
S.S.M.S.

C./c.:

- Director Hospital El Pino
- Encargada de Investigaciones Hospital El Pino
- Jefe Depto. Técnico en Salud SSMS
- Archivo Memos C.E.C. S.S.M.S.
- Archivo Protocolo.

Comité Ético Científico S.S.M.S. re-acreditado según Resolución Exenta N° 009111 del 21/07/2020 del SEREMI de Salud.

Av. Santa Rosa N° 3453 - San Miguel - Santiago - Tel.: 225763637
Celular institucional Presidenta de CEC: 958582831 - correo: comiteeticocientifico@ssms.gob.cl

Security Ethics Committee Approval



COMITÉ INSTITUCIONAL DE SEGURIDAD EN INVESTIGACIÓN ACTA DE APROBACIÓN

Miembros del Comité

Sra. Ana María Guzmán Durán, Presidente, Facultad de Medicina.
 Sr. Rafael Medina Silva, Vicepresidente, Facultad de Medicina.
 Srta. Macarena Otto Medina, Secretaria Ejecutiva y Ministro de Fe del Comité (S).
 Sr. Alejandro Cabrera Oyarzún, Miembro externo.
 Sr. Carlos Miranda Molina, Departamento de Prevención de Riesgos.
 Sr. Carlos Troncoso Troncoso, Dirección de Infraestructura.
 Sr. César Saldías Barros, Facultad de Química.
 Sra. Clara Quiroga Lagos, Facultad de Medicina.
 Sr. Felipe Ibacache Reyes, Facultad de Química.
 Sr. Francisco Vera Gutiérrez, Facultad de Medicina.
 Sr. Gonzalo Recabarren, Facultad de Química.
 Sr. Hannetz Roschttardt Choucroun, Facultad de Ciencias Biológicas.
 Sr. Jonathan Vargas Sepúlveda, Departamento de Prevención de Riesgos.
 Sr. Luis Carvacho Bart, Facultad de Historia, Geografía y Ciencia Política.
 Sr. Manuel Latud Rojas, Facultad de Ciencias Biológicas.
 Sr. Pablo Pastén González, Facultad de Ingeniería.
 Sra. Paola Caprile Etchart, Facultad de Física.
 Sr. Carlos Oliva Olave, Facultad de Ciencias Biológicas.
 Sra. Verónica Arenas Morales, Encargada Programa Laboratorio Seguro UC.

Participaron en la aprobación de este protocolo los miembros del Comité que asistieron a la sesión del día 07 de septiembre de 2022.

Título del proyecto: Procesos subyacentes de alteraciones de memorias episódicas y autobiográficas en esquizofrenia

Investigador responsable: Emmanuel Joshua Méndez Hernández

Institución: Facultad de Ciencias Sociales, Pontificia Universidad Católica de Chile

Académico responsable: Felix Bacigalupo Izquierdo

Institución: Facultad de Ciencias Sociales, Pontificia Universidad Católica de Chile

Financiamiento: ANID (ex-CONICYT) Doctorado Becas Chile

ID Protocolo: 220813001

Fundamentación de la aprobación:

1. El protocolo evaluado implica la realización de salidas a terreno.





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COMITÉ INSTITUCIONAL DE SEGURIDAD EN INVESTIGACIÓN ACTA DE APROBACIÓN

2. Las medidas de seguridad que se utilizarán en la salida a terreno son las indicadas en el protocolo de evaluación del Comité Institucional de Seguridad en Investigación adjunto en este documento.

3. El protocolo evaluado contempla las medidas de seguridad necesarias para asegurar la protección de los integrantes del equipo en la(s) salida(s) a terreno.

Resolución del Comité:

En la sesión del día 07 de septiembre de 2022, el Comité Institucional de Seguridad ha determinado la **Aprobación** de este protocolo.

Esta aprobación tiene vigencia por el período de duración del proyecto.

En la eventualidad de incorporar modificaciones a los procedimientos especificados en el protocolo aprobado, el investigador deberá notificarlo al comité para la emisión de una nueva acta de aprobación.

Los Responsables UC se comprometen a dar fiel cumplimiento al protocolo aprobado.

Los siguientes documentos han sido aprobados y están disponibles para ser descargados:

- Compromiso responsables 220813001.pdf
- Protocolo_seguridad_salidas_a_terreno_220813001.docx

Les saludan atentamente,

Macarena Otto Medina
Secretaria Ejecutiva y Ministro de Fe (S)

ANA MARÍA GUZMÁN D.
Presidenta
Ana María Guzmán D.
Presidenta



Santiago, 08 de septiembre de 2022