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#### Original article

# Does institutionalization influence perceived metamemory, psychological well-being, and working-memory efficiency in Italian elders? A preliminary study



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#### ABSTRACT

Background/Purpose: This study was mainly aimed at investigating the impact of institutionalization on working-memory and self-referent metamemory abilities in a sample of cognitively healthy Italian elders

Methods: Fifteen participants (70–91 years old) were recruited from several nursing homes located in Ogliastra, the central eastern area of Sardinia, which is characterized by a higher longevity of its inhabitants. A further sample of 15 community-dwelling elders was recruited in the same areas. The participants were asked to complete several visuospatial and verbal working-memory tasks, and a battery of questionnaires assessing their psychological well-being, general beliefs about global and prospective-memory efficiency, and personal metamnestic abilities.

*Results:* The results showed that, compared with the community-dwelling participants, the institutionalized elders self-rated lower metamemory efficiency, but they trust more general metamemory functions of a stereotypical adult. Furthermore, no differences were found on the well-being measures between the two groups. These outcomes are not biased by social desirability.

Conclusion: These findings suggest that institutionalization selectively impacts self-assessed metamemory functions, but not psychological well-being.

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#### 1. Introduction

Contemporary research indicates that superior mental health in late adulthood is associated with increased longevity. For example, Wang et al  $^1$  carried out a longitudinal study for 15 years with over 3000 urban and rural community-dwelling Chinese adults aged  $\geq$  55 years at baseline. The authors found that longevity and mental health are strictly related. Moreover, the former is mainly associated with better physical and social conditions, and protective factors, such as exercise and education. Similarly, Yates et al  $^2$  conducted a 25-year prospective cohort study of almost 1000 healthy American oldest-old (i.e., aged  $\geq$  90 years) elders, showing that

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modifiable biological and behavioral factors (e.g., smoking, hypertension, diabetes, regular physical exercise) can predict longevity and psychological well-being. Moreover, a longitudinal study conducted with over 1100 Israeli elderly people (i.e., aged ≥ 70 years) for more than 7 years documented that longevity was strictly related to a specific indicator of mental health influencing the psychological well-being, the so-called will to live, that is, the expression of the striving for life.³ Specifically, it was found that elders reporting a lower will-to-live index were usually more depressed, less physically healthy (e.g., presence of chronic illnesses), less life satisfied, and survived less.

However, during the past 2 decades, studies of exceptional longevity have been concentered in Sardinia, an Italian island located in the Mediterranean Sea. Thus, recent evidence has shown that elderly people living in the rural areas of Sardinia live for a long time, and possess both superior subjective well-being and fewer depressive signs compared with people residing in the agropastoral

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areas of Northern Italy.<sup>5-7</sup> In this regard, Fastame et al<sup>8</sup> found greater levels of personal satisfaction and coping strategies among cognitively healthy Sardinian elders that were recruited from the agropastoral area of Ogliastra than among peer residents from the rural areas of Lombardy, a region located in Northern Italy. These outcomes were replicated even among the oldest-old (i.e., aged > 75 years) participants. that is, those living a developmental phase frequently stated to be characterized mainly by cognitive losses than with age-related assets, such as wisdom or life experience. <sup>10</sup> At present, the literature concerning the possible causes of positive aging is somewhat disparate. This suggests the involvement of a wide range of factors, the impact of which varies according to geographical location. Within the Sardinian population, evidence for the involvement of both genetic mechanisms<sup>4</sup> and sociocultural factors<sup>7,11</sup> has been obtained. In this regard, Carpiniello et al<sup>11</sup> suggested that preservation of mental health was accounted for in part by stronger relationships in the community. Thus, Sardinian elders have been found to be better supported by, and more actively involved in, local social networks.<sup>6,8</sup> This is consistent with their valued role in the community both as a resource for younger generations and as a repository of tradition and local culture.

There is also evidence that psychological well-being is associated with metacognitive characteristics in late adulthood.<sup>5,12</sup> According to Flavell, <sup>13</sup> metacognition refers to one's knowledge about the efficiency of his/her cognitive processes that serves to achieve specific learning goals by controlling the cognitive actions that are coordinated, and then carried out to increase learning. The selection of cognitive actions can be driven by the knowledge about the characteristics of the task that has to be carried out, the knowledge about the abilities of the learner that are requested by the task, and the knowledge about the appropriate strategies to achieve the learning outcomes. One specific construct related to metacognition is called metamemory, which includes: (1) one's knowledge about memory tasks and mnestic processes; (2) one's awareness about memory monitoring; (3) beliefs about the efficiency of one's memory functions; and (4) emotional aspects (i.e., fatigue, anxiety, depression) related to the execution of memory processes.<sup>14</sup> It is of interest that, among older people, high trust in the efficiency of their control cognitive processes is associated with a range of positive psychological outcomes. These include greater optimism about the efficiency of their mind in later adulthood, lower levels of depressive symptoms, higher levels of personal satisfaction, and the increased use of memory strategies to limit their mnestic losses. 15,16 Metacognitive factors appear to play a role in healthy aging among elders. First, reports indicate that Sardinian elderly people are more confident about the efficiency of their metacognitive and metamemory skills than older participants recruited in Northern Italy.<sup>7,8</sup> Second, greater trust in the efficiency of memory processes is associated with superior life satisfaction, reduced depressive symptomology, and increased optimism about their future.8,9,17

Overall, the foregoing evidence suggests at least two considerations. First, a series of psychological and sociocultural factors seem to contribute—perhaps with a specific genetic pattern—in impacting positive aging among elders. Second, one potentially serious limitation of previous studies is that only community-dwelling elderly participants were involved. In particular, the benefits associated with greater community involvement and esteem may be absent or diminished among institutionalized elders. Limited evidence is available to resolve this issue. Indeed, we are aware of only one recent study conducted by Fastame and Cavallini, which showed that the working-memory efficiency of cognitively healthy elders residing in nursing homes was comparable with that of community-dwelling old participants. However, to our knowledge, no studies have been carried out to deeply

explore self-referent metacognition and well-being in Western institutionalized elderly people.

More widely, two studies have been conducted to investigate metamemory efficiency and mental health in geriatric-care-facility residents. First, Ide et al 19 reported that beliefs about the memory capacity of Japanese nursing-facility elders were influenced by the presence of depressive signs both in cognitively intact participants as well as in those with mild cognitive decline. That is, more depressed individuals tended to underestimate their memory efficiency. Second, McDougall<sup>20</sup> reported a positive effect of 8-week metamemory training on beliefs about the efficiency of prospective memory and memory change in a group of 16 cognitively healthy American older adults living in a nursing home. Specifically, after the metamemory training, the participants showed an increased trust in their memory efficiency, and reported that their memories were more stable and less subjected to decline than prior to training. Scores on a memory self-efficacy questionnaire also improved. Overall, the intervention was effective in changing the negative, stereotypical beliefs about declining memory in late adulthood.20

Given this limited evidence base, there is a need to explore whether significant differences in psychological well-being and metamemory measures can be found between community-dwelling older adults and assisted-living elders without any signs of cognitive decline. In addition, from a clinical perspective, in order to promote mental health in late adulthood, such data are important for confirming the role of sociocultural factors in positive aging among long-lived elders, such as the Sardinian elders. It can be speculated that the benefits of social context will be diminished among institutionalized elders being expressed as lower subjective wellness and lower trust in metacognitive and metamnestic efficiency.

Consequently, the current study was mainly aimed at exploring whether geriatric-health-facility populations present lower self-rated psychological well-being and metamemory efficiency scores than community-dwelling older adults residing in the rural areas of Sardinia. Furthermore, it was also explored whether metamemory correlated with working-memory span. Finally, it was also investigated whether working-memory efficiency was impacted by institutionalization.

As suggested by Fastame and Cavallini, <sup>18</sup> no differences were expected in mnestic performances of assisted-living elders with no signs of cognitive decline and community-dwelling older adults. Furthermore, it was hypothesized that a positive relationship between personal metamemory scores and working-memory efficiency exists. <sup>5</sup> Finally, no hypotheses were made concerning the level of subjective psychological health, metacognition, and metamemory of older adults living in their own homes or in geriatrichealth facilities, because there is no empirical evidence about the potential role of institutionalization in late adulthood and specifically in the Italian context.

#### 2. Methods

#### 2.1. Participants

Thirty-five cognitively healthy community-dwelling and assisted-living elders were recruited from the rural area of Ogliastra, a small region in Sardinia where a very simple lifestyle prevails. The participants were recruited from that particular Sardinian area because a trend of research<sup>8,17,21</sup> reports high levels of mental health among the elderly people residing there.

The eligibility criteria to take part in the investigation included: (1) being born and residing in Ogliastra; (2) being independently living elders or residing in a geriatric health facility; and (3) showing

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