



## Initial validation of the Mini-Mental Adjustment to Cancer (Mini-MAC) scale: Study of Portuguese end-of-life cancer patients



Filomena Moreira Pinto Pereira\*, Célia Samarina Vilaça de Brito Santos

Escola Superior de Enfermagem do Porto (Nursing College of Porto) – Escola Superior de Enfermagem do Porto, Rua Dr. António Bernardino de Almeida, 4200-072 Porto, Portugal

### A B S T R A C T

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Validation

**Background:** The Mini-Mental Adjustment to Cancer Scale (Mini-MAC) is a 29-item instrument designed to evaluate the responses developed by cancer patients during their mental adjustment to diagnosis and treatment.

**Purpose of the research:** This study aims to validate the Mini-Mental Adjustment to Cancer Scale (Mini-MAC) translated and adapted to the Portuguese language and culture, in end-of-life cancer patients receiving palliative care.

**Methods and design:** The instrument was administered to 346 Portuguese end-of-life cancer patients, receiving care through outpatient visits or admitted into palliative care units, without cognitive symptoms and with symptoms under control. A cross-sectional validation study using orthogonal rotation through the varimax method followed by convergent and discriminant validity.

**Key results:** The analysis of the main components confirms the existence of five factors, demonstrating the validity of the construct, with good internal consistency in the subscales and Cronbach's alpha values between 0.78 and 0.93. Good test-retest reliability was also found, and  $r$  values for subscales ranged from 0.62 to 0.99.

**Conclusions:** The instrument proved to be a reliable, valid and sensitive measure in the study of mental adjustment of Portuguese end-of-life patients with cancer receiving palliative care.

**Relevance to practice:** Nurses can use the Mini-MAC Scale in research and clinical practice in order to evaluate the mental adjustment of Portuguese end-of-life cancer patients receiving palliative care.

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### Introduction

The final stage of life for the cancer patient begins when it is found that the targets set for tumour treatment must be redefined with the future aim of symptom control, when progressive malignancy is confirmed, and when it is recognized that death is imminent and all therapeutic options have failed (Vigano et al., 2000). At this stage patients need palliative care directed towards symptom relief and improving their quality of life. Seeing that at this stage patients are confronted with multiple losses, it is also important to support them in their process of coping, enabling them to feel in control of the situation, to find meaning in their

lives, to maintain their dignity, and feel valued up to the end of their lives (Bradley et al., 2010; Chochinov, 2006).

Patient vulnerability and finitude constitutes an emotional impact that weighs on them and their families, generating stress that can lead to suffering on several levels. This event will trigger a coping process consisting in the adoption of strategies to deal with or adapt to the situation (Lazarus and Folkman, 1986; Carver et al., 1989). Coping strategies are a set of cognitive and behavioural efforts that aim to manage specific internal and external demands that arise in situations of stress and which are perceived as a burden or beyond the person's capabilities (Lazarus and Folkman, 1986). The types of responses developed by patients is conditioned by their personal history, their social context, and by the attitude of their family and health care professionals (Kubler-Ross, 1975). The coping strategies of close relatives in dealing with the news of incurable cancer and the possible death of their loved one fall into four categories: thinking that death is a distant possibility,

\* Corresponding author. Tel.: +351 225073500.

E-mail addresses: [fpinto@esenf.pt](mailto:fpinto@esenf.pt) (F.M.P. Pereira), [celiasantos@esenf.pt](mailto:celiasantos@esenf.pt) (C.S.V. B. Santos).

believing in the possibility of improvement, living in the present moment, and making use of family support and social networks (Benkel et al., 2010).

The mental adjustment of cancer patients was developed by Watson et al. (1988), in order to evaluate the responses developed by patients during their mental adjustment to diagnosis and treatment of cancer. In order to obtain a self-report and means of rapid assessment of coping responses, a smaller version with 29 items was developed, the Mini-MAC Scale (Watson et al., 1994). The Mini-MAC includes the same five dimensions and psychometric properties, comparable to the previous version (MAC-Scale).

Pais-Ribeiro et al. (2003) developed a Portuguese version of the Mini-MAC Scale, maintaining the original dimensions and items. This study aimed to contribute towards a validation version for Portuguese cancer patients (included 30 breast cancer and 30 colorectal cancer patients). The Mini-Mac is composed of the following dimensions: Fighting Spirit; Helplessness/Hopelessness; Cognitive Avoidance; Fatalism; and Anxious Preoccupation.

“Fighting Spirit” is characterized by a set of responses in which a confrontational means of coping is predominant: a belief in a certain degree of control over the disease and an optimistic perspective towards the future. The “Helplessness/Hopelessness” type is characterized by passive responses to the patient’s situation, demonstrating a negative outlook regarding the situation and disbelief in any possibility of controlling it. The authors (Greer and Watson, 1987; Greer et al., 1989; Watson and Greer, 1998) also identified five styles that comprise the range of adaptive responses or perceptions of control: “Fighting Spirit”, where the disease is perceived as a challenge and where the patient believes he or she can exert some control over the situation; “Cognitive Avoidance”, characterized by minimization of the threat and downplaying the need for personal control; “Fatalism”, characterized by an attitude of passive acceptance of the disease, which the patient considers impossible to control; “Helplessness–Hopelessness”, in which a person feels an irreparable loss, the threat of death, and a lack of over the situation; and “Anxious Preoccupation”, where the disease presents itself as a threat but where there is some doubt as to the possibility of exercising some control over the situation and its implications. The “Fatalism”, “Anxious Preoccupation” and “Helplessness–Hopelessness” approaches correspond to the more passive coping strategies, while the more active strategies include the “Fighting Spirit” and “Cognitive Avoidance”.

Many studies have demonstrated an association between adaptive coping responses and psychological outcomes in cancer patients (Parle and Maguire, 1995; Stanton and Snider, 1993).

In this sense, our aim with this study is to develop the initial validation of the Mini-Mental Adjustment to Cancer (Mini-MAC) scale into a means of rapid assessment of coping responses in end-of-life cancer patients receiving palliative care, in order to help them find better adaptive strategies.

**Methods**

In order to meet these objectives, a methodological and cross-sectional survey was developed.

*Participants*

An intentional sample of 346 end-of-life cancer patients was recruited from palliative care services in an oncology hospital in Porto, Portugal.

Participants were required to meet the following criteria for eligibility: (a) 16 years or older; (b) diagnosed with incurable cancer in an advanced and progressive state, without acceptable antineoplastic therapeutic response and under palliative care (inpatient and

outpatient); (c) does not exhibit symptoms with an intensity more than 5, evaluated through the Edmonton Symptom Assessment Scale (ESAS); (d) does not present cognitive alterations, evaluated by the Portuguese version of the Mini-Mental State (MMS) (Folstein et al., 1975). In this evaluation, patients were considered to have a “cognitive defect” if, depending on their educational attainment, they obtained the following scores on the scale: illiterate ≤15, 1–11 years of schooling ≤22 and more than 11 years of schooling ≤27.

The sample consisted of 346 end-of-life cancer patients, with different types of cancer, of which 51.7% were males and 48.3% females, between the ages of 22 and 91 (M = 65.1; SD = 13.3). They had between 0 and 23 years schooling (M = 4.8, SD = 3.9), working in a wide range of professional fields, or were retired or unemployed (84.1%). On average, they had 2.6 children (SD = 2.2) and lived with two other people under the same roof (SD = 1.4).

On average, the cancer lasted 35 months (SD = 27.6, Min = 1 month, Max 180 months). Remaining socio-demographic and clinical characteristics are presented in Table 1.

*Material*

The following instruments were used in the study:

- Socio-demographic and clinical questionnaire to collect data on gender, age, marital status, education, occupation, employment status, size of household or number of people living together, religion/religious belief, knowledge of the patient’s oncologic disease under hospital treatment and the palliative care service.
- Mini-Mental Adjustment to Cancer Scale (Mini-MAC Scale) of Watson et al. (1994). The Portuguese version was used, translated and adapted by Pais-Ribeiro et al. (2003) retaining the structure of Mini-Mental Adjustment to Cancer (Mini-MAC) scale. The scale consists of 29 items on a four-point numeric scale (ranging from 1 – “Does not apply at all to me” to 4 – “Totally applies to me”) and grouped into five dimensions:

**Table 1**  
Socio-demographic and clinical characteristics of the sample.

	n (%)
Gender	
Male	179 (51.7)
Female	167 (48.3)
<i>Marital status</i>	
Married	233 (67.3)
Widow/widower	56 (16.2)
Single	34 (9.8)
Other (divorced, separated, civil union)	23 (6.6)
<i>Age group</i>	
20–50	55 (15.9)
51–60	63 (18.2)
61–70	84 (24.3)
71–80	111 (32.1)
81–100	33 (9.5)
<i>Employment status</i>	
Active, on sick leave	45 (13.0)
Inactive (retired)	287 (82.9)
Others (active – self-employed; housewife; inactive – unemployed)	14 (4.1)
<i>Religion/religious belief</i>	
Catholic	324 (93.6)
Others (evangelical; christian congregation; Jehovah’s Witness)	9 (2.7)
None	13 (3.8)
<i>Treatments given</i>	
Surgery + chemotherapy + radiotherapy	90 (26.0)
Surgery + chemotherapy	61 (17.6)
Surgery	60 (17.3)
Chemotherapy	46 (13.3)
Others (hormone therapy, brachytherapy, etc)	75 (21.7)
None	14 (4.0)

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