

Autobiographical memory deficit in anorexia nervosa: Emotion regulation and effect of duration of illness

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Abstract

Emotional deficits in anorexia nervosa can be expressed in autobiographical memory recall. The aim of this study is to test whether deficits in autobiographical memory exist in anorexic patients and concern specifically negative or positive emotional valence. Moreover, it is unclear whether these deficits are dependent upon comorbid aspects (depression, alexithymia, and anxiety) or upon illness duration. Anorexic patients ($n=25$) were compared to healthy volunteers based on their clinical assessment, explicit memory test score, and autobiographical memory test score. The study makes use of the autobiographical test of Williams and Scott,

which involves specific emotional cues to elicit memory. Anorexic patients recalled more general memories than controls in autobiographical memory test, but had no deficit in explicit memory test. This pattern, observed both for negative and positive cues, was neither related to depression or alexithymia, nor to anxiety severity, but increased significantly with illness duration. These results show that anorexic patients are characterized by relative difficulty in the integration of both negative and positive emotional experiences, and that this impairment is reinforced by illness duration.

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Introduction

Adolescent anorexic patients are characterized by identity disorders that are consolidated by environmental factors [1,2], specific familial interactions [3–5], and cognitive, emotional, and neuropsychological impairments [6–9]. Some studies have reported that, in acute state, anorexic patients present impairments in short-term verbal and visual visuospatial construction problem solving and

reaction time [6,10]. The most robust neurocognitive deficit in anorexia nervosa relates to attentional deficits involving selective attention, inhibition functions, difficulties in set shifting ability, and inability to change past patterns of thinking [11–14], which persists even after recovery [15]. Nevertheless, neurocognitive assessment in anorexic patients presents some general limitations, namely, that most studies have used a broad range of neuropsychological tools and have involved patients with varied clinical characteristics [9], such as the clinical severity and duration of illness.

In addition, as nutritional status and weight loss bear little relationship with the cognitive scores of these patients [10], it has been suggested that cognitive troubles could be

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rather dependent on emotional processes than on neuro-cognitive impairments [16–18]. Many authors have suggested that women with eating disorders have “emotional dysregulation,” which often manifests itself as a deficit in modulating emotions [16,19–24] that could lead to cognitive impairments. An inability to accurately recognize, label, and respond to different emotional states is thought to be at the core of the development of anorexia nervosa [21,24,25] or other eating disorders [26].

Emotional impairments in anorexic patients were observed in emotion recognition, facial expression, and visual or prosody recognition tasks [16,18,27]. In particular, anorexic patients poorly recognize negative emotions in facial expression [27]. Emotional troubles appear in situations wherein adolescents are in conflict or try to avoid it [28,29]. Moreover, these patients are particularly prone to silencing negative affect and avoid communication involving unpleasant affect [30–32]. These emotional dysregulations can be related to alexithymia, which is largely observed in eating disorders [33–37] and is nowadays recognized as an impairment in cognitive components of emotional response systems (subjective awareness and verbal reporting of feelings) and in interpersonal regulation of emotions [37]. Alexithymia in eating disorders is associated with interpersonal distrust and lack of interoceptive awareness, but is not related to drive for thinness and body dissatisfaction [24,25,37]. Starvation, hyperactivity, bingeing, and purging can be thought of as attempts to regulate undifferentiated emotional states [25,37].

Anorexic patients use cognitive and behavioral strategies (rituals, purging, or exercises) in order to avoid or attenuate negative affect. Another cognitive avoidance strategy could also consist in modifying access to autobiographical emotional memories by retrieving memories less specifically [38,39]. A hypothesis suggested by Williams [40] and supported by empirical tests of Raes et al. [38] is that individuals who have experienced early negative events or trauma learn that, by retrieving painful memories in a less specific way, they minimize associated negative emotions. Thus, during adolescence, abnormalities of personal identity could be related to specific impairment in memory access stemming from a cognitive strategy meant to quench negative emotions [39].

Table 1

Group description (age and duration of the illness are given in years, height is given in centimeters, weight is given in kilograms, and BMI is given in kilograms per square meter) average values; standard deviations are given in parentheses

	Anorexic patients (n=25)	Controls (n=25)
Age	23.7 (±6.4)	23.56 (±4.87)
Height	164.4 (±5.38)	167.1 (±5.86)
Weight	40.9 (±4.5)	60.97 (±8.4)
BMI	15 (±1.26)	21.54 (±1.92)
Duration	5.96 (±4.4)	–

Table 2

Average results of clinical assessment for the anorexic group and the control group

	Anorexic patients	Controls	t test
EDI	102±28.5	32.72±25.3	t=8.82, P<.001
TAS	81±9.8	55.2±14.2	t=7.78, P<.001
Depression	19.1±7.4	4.16±3.3	t=9.4, P<.001
A-State	53.8±14.87	36.12±9.7	t=5.1, P=.001
A-Trait	64.6±8.31	40.6±10.23	t=9.74, P<.001

Autobiographical memories, considered as transient mental constructions, are generated from a database of autobiographical knowledge, which is hierarchically organized from specific to general memories [41,42]. It has been shown that acquired autobiographical knowledge is organized during adolescence [43–46] and shapes the sense of personal identity [42,44]. Only a few studies have examined autobiographical memories in adolescent psychopathology. These studies have mainly investigated depression [47], sexual abuse [48,49], or trauma-related disorders [39], and have stressed the relation between negative events and memory overgeneralization. They thus suggest, as in adult studies, that general autobiographical memories would attenuate the effects of negative affect [38,50]: the higher is the intensity of trauma, the lower is the specificity of memories.

Up to now, only one study has assessed autobiographical memories in anorexic patients (with sexual abuse) and has reported impairments characterized by an increase in general memory recall [51]. This deficit in specific autobiographical memories would correspond to the avoidance of negative emotional experiences, which would lead to impairment of personal identity. This cognitive avoidance strategy may be generalized to addictive behavior and anorexic patients. The aim of the present study is to test whether deficits in autobiographical memory exist in anorexic patients and concern particularly negative or positive emotional valence. We hypothesize that anorexic patients should be characterized by negative bias toward negative autobiographical memories as assessed by the autobiographical memory test elaborated by Williams and Scott [52] and adapted in French by Puffet et al. [53].

In addition, we speculate that avoidance strategy could be reinforced by illness duration. Illness duration effects have been observed for autobiographical memories in depression [54,55]. The relationship between depressogenic information processing styles and dysphoric affect is stronger in patients who have already experienced a depressive episode than in first-episode depressed subjects [56]. For example, the study of Mackinger et al. [55], which argues that autobiographical memory deficit is a consequence of depression, shows that women with a history of major depression retrieved more categorical descriptions with negative cue words than women without any history of depression. Moreover, in bulimic patients, negative bias evolves according to subjects' age [57]. It would, therefore, seem that cognitive deficit

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