

Late life depression: A literature review of late-life depression and contributing factors

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Abstract: Literature provides a wide variety of information about food intake, physical illness, and psychological disorders among the aging population. Late-onset of depression is one of the most common mental health problems in adults aged 60 or older. The primary purpose of this paper is to investigate the relationship between late-life depression and nutrition intake among older adults. Secondly, literature has indicated that late-life depression is influenced by genetic, situational, illness-related biological and psycho-social factors. However, late-life depression, relative to early-onset depression, appears to be less influenced by genetics and more influenced by environmental factors. Psychological models postulate that late-life depression arises from the loss of self-esteem, loss of meaningful roles, loss of significant others, decline of social contacts, reduction of physical ability, financial difficulties and decline in coping skills. For these reasons, the contributing social, physical and psychological factors are briefly investigated in relation to nutritional aspects. Therefore, the scope of this paper will examine the social, physical, and psychological issues that directly or indirectly affect food intake and consequently depression in the elderly population.

Key words: Late-life depression; nutrition and depression; psycho-social aspects of depression

Título: Una revisión de los factores que contribuyen a la depresión en los últimos años de vida

Resumen: La literatura ofrece una amplia variedad de información sobre la ingesta de alimentos, enfermedades físicas y trastornos psicológicos en la población de personas mayores. La depresión de inicio tardío es uno de los problemas de salud mental más comunes en los adultos mayores de 60 años. El propósito principal de este trabajo es investigar la relación entre la depresión de los últimos años de la vida y la nutrición entre los adultos mayores. En segundo lugar, la literatura ha señalado que la depresión en los últimos años de la vida está influenciada por factores genéticos, situacionales y las enfermedades relacionadas con factores biológicos y psicosociales. Sin embargo, la depresión en los últimos años de vida, en relación con la depresión de inicio temprano, parece estar menos influenciada por la genética y más por factores ambientales. Hay modelos psicológicos que postulan que la depresión tardía surge de la pérdida de la autoestima, la pérdida de roles significativos, la pérdida de otras personas importantes, la disminución de los contactos sociales, la reducción de la capacidad física, las dificultades financieras y la disminución de las habilidades de afrontamiento. Por estas razones, los factores sociales, físicos y psicológicos son brevemente revisados en relación con aspectos nutricionales. Por lo tanto, el alcance de este trabajo es examinar las cuestiones sociales, físicas, psicológicas que afectan directa o indirectamente a la ingesta de alimentos y, por consiguiente, la depresión en la población anciana.

Palabras clave: Depresión en los últimos años de vida; nutrición y depresión; aspectos psicosociales de la depresión.

A literature review of late-life depression and contributing factors

Depression is considered to be one of the most common emotional problems among elderly individuals. The prevalence of depressive symptoms in the general population is at its lowest incidence during the middle-age years, increases throughout late adulthood, and reaches its highest level in adults age 80 or above (Glass, Kasl & Berkman, 1997). Other experts reported that among elderly who live in the community, the prevalence of the depressive symptoms has ranged from 11 % to 44 % with an average of about 20 %. About 43 % of the institutionalized elderly, however, were diagnosed as having depression (Reeker, 1997). Studies conducted in America revealed that depression affects between 20 % to 40 % of older population.

Depression is defined as dysphoric mood or loss of interest or pleasure in life and in free time activities. Symptoms include poor appetite, insomnia or hypersomnia, loss of energy; fatigue or tiredness, psychomotor agitation or retardation, feelings of excessive guilt, lack of concentration, inability to think, and suicidal thoughts (Ryan & Shea, 1996).

Symptoms of late-life depression may not be very different from those experienced by younger depressed persons. They may appear withdrawn and despondent. They may report feeling sluggish, especially early in the morning. Disturbed sleep, little difficulty falling asleep but awakening in the morning and being unable to fall back to sleep, and sleeping during the day or staying in bed during the day are also indications of severe depression. Frequent crying, fatigue, and anhedonia are also very common. Further, signs are lack of interest in sex, vague complaints, lack of energy, and reduced appetite (O'Conner, 1998).

There are many reasons for older adults' depression. Risk factors for depression stem from multiple sources including death of a spouse or friend, physical impairment, loss of independence, and lack of purpose in life. There is some evidence that depression is a genetic disorder; however, some have argued that a genetic disposition is accompanied by environmental interaction.

A depressed mental state creates a decreased level of interest in food and loss of pleasure in food. Therefore, depressed patients are at higher risk for undernourishment. Simply, sad and depressive feelings cause big changes in appetite, digestion, energy level, weight, and sense of well being. Hence, older adults experiencing depression may also indirectly suffer nutritional deprivation or vice-versa. Depressed patients sometimes manifest confusion and memory loss. This can make it hard for them to remember what they

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have eaten, or if they have, in fact, eaten anything. Ponza and Millen's (1993-1995) study of the Nutrition Program of the Older American Act revealed that 67 % to 88 % of their participants were at moderate to high nutritional risk. Epidemiological studies have commonly demonstrated nutritional deficiencies in elderly populations. Malnutrition, whether associated with being overweight, being underweight, or experiencing weight loss may affect more than half of the elderly. Some data suggest that 18 % of African-Americans and about 16 % of Caucasians who are older than 60 and who are community-dwelling ingest fewer than 1000 calories daily. An involuntary weight loss greater than 10 % of body weight within six months indicates a patient at significant risk of malnutrition. Obesity and being overweight are also considered common problems among the elderly. A number of studies have suggested that elderly groups are at risk of under- or over- nutrition due to medical, physiological, or sociological conditions. At the same time, depression is manifested differently in various age groups. For example, it is associated with weight gain in young adults but weight loss in the elderly (Roberts, 1995).

It has been reported that certain groups of elderly people are more likely than others to develop undernutrition. These most vulnerable groups include elderly persons with poor socioeconomic status, the homebound, and the bereaved, persons who do not regularly cook meals, those with physical disabilities, and those experiencing depression or mental disorders.

Because aging brings about much physical, psychological and cognitive impairment, each individual constitutes a unique case that needs to be assessed thoroughly. Furthermore, some elderly patients may be experiencing more than one illness and using multiple drugs affecting their cognitive and psychic functions. Therefore, there are many patients who are going through depression for a number of reasons. Since the illness develops slowly and has multiple causal factors, it is sometimes hard to identify depression. Depression is risk factor for a number of negative health outcomes including mortality, diminished immune system, and poor recovery. Major depressive disorder has been found to be a risk factor for mortality and, in one study, increased the probability of death by 59 % (O'Conner, 1998). Most of the deaths were a result of suicide. However, depression in the elderly is still not commonly diagnosed.

O'Conner (1998) reported that depression in elderly patients is frequently missed or untreated. Of the 6 million Americans older than 65 who suffer from clinical depression, only 1 million have had their illness diagnosed and received proper treatment. Older adults often do not report depressive symptoms probably because of the negative connotation and social stigma attached to depression. Many elderly persons harbor misconceptions about it, and they are reluctant to admit to its symptoms and seek professional help. Elderly patients may believe that depression is a natural part of getting old. Depression is not, however, a natural

part of growing old. It is not part of normal aging. It is treatable (Rapp & Walsh, 1988). But, first symptoms have to be identified and causal factors determined, a task which is usually not easy. For instance, if a chronic or serious illness, such as cancer or Alzheimer's disease, is the cause of depression, medical conditions may mask the depressive symptoms. When this is the case, determining the origin of symptoms can be a difficult problem. The differential diagnosis in any patient with depressive symptoms includes heart failure, hypertension, hypothyroidism, Parkinson's disease, malnutrition, and infection. If the patient has a variety of nonspecific somatic complaints but no evidence of organic disease after a thorough physical examination, depression should be suspected (O'Conner, 1998). Depression frequently resembles dementia, although an estimated 25-40 % of elderly persons with primary dementia also have depression. Similarly, older patients may show the presence of other psychiatric conditions, such as anxiety disorders, that should be discriminated from depression. Identifying and treating underlying risk factors for depression will benefit older adults by improving the quality of their lives. If left untreated, depression can lead to substantial morbidity, contribute to existing medical illness, and even result in suicide. Effective treatment, however, can help the majority of those affected to recover, resulting in improved quality of life and decreased health costs. Early intervention can eliminate the need for more invasive and expensive nutritional therapy. Most importantly, with the appropriate treatment patients can remain in the community and postpone placement in a long-term facility (Ryan & Shea, 1996). A major concern for the elderly is how health care costs can be kept at a minimum level while maintaining a decent quality of life in older age. Since poor nutrition increases physical and psychological health problems as well as financial expenses, nutritional problems need to be identified at an earlier stage with a multidisciplinary approach.

1) Social factors

The American Dietetic Association (1996) has suggested that the importance of the social and nurturing aspects of food increase with age. The social dimensions of nutritional well-being are subject to change in old age, and these changes create a number of barriers to adequate nutrition. Eating is not a mechanical, biological need. It has personal, cultural and symbolic meaning for all of us. Therefore, food type, service, time, group, and atmosphere all have important impacts on our eating habits. Presentation and serving of food also influence the desire to eat. If the food is monochromatic, mixed together, or aesthetically displeasing, then the meal may be rejected. Marcus and Berry (1998) demonstrated that an appropriate environment and relaxing atmosphere during the meal time could increase food intake. Likewise, conversation, verbal cueing, and touching have very positive effects.

Older people in rural areas are often isolated both socially and geographically. Arcury, Quandt, McDonald, and Vitolins (1998) conducted in-depth interviews with 73 community leaders and experts in order to investigate the physical location and availability of nutritional sources. They reported that public services frequently do not meet the needs for many reasons. Federal programs fighting hunger and food insecurity reach only one third of needy older adults. Meal programs reach only a small number of individuals because public and private services are centralized in the county seats and in large towns. Services offered in each county differed from each other, and rural areas had less accessibility to food services. Gilbride, Amella, Breines, Mariano, and Mezey (1998) reported that older adults tend to prefer to live in more rural areas. Thirty percent of the older residents lived in central cities, and 46 % lived in surrounding suburbs. Furthermore, in rural areas public services meet with unique obstacles, such as low population density, lack of infrastructure, geographic barriers, and long driving distances, which made it impossible to reach the rural elderly population. Services in rural areas were also perceived to be lower quality and less available than in urban locations. Furthermore, even in some of the remote areas elders did not know about available services. Likewise, Buchowski and Sun (1996) estimated that one-quarter of Americans aged 65 and older live in rural areas and the rural elderly are more likely than inner-city counterparts to live below the poverty level, to have a large number of health problems, and to have fewer available health and human services. In a similar way, Klein, Kita, Fish, Sinkus, and Jensen (1997) reported that the rural elderly have limited education and finances; many of them experience poor dentition, depression, disability, and substance abuse. Furthermore, they found that older persons residing outside of a metropolitan area had more hospital admissions, functional limitations, chronic health conditions, and falls as well as increased confusion and forgetfulness.

Cultural factors such as race, ethnicity and culture were also mentioned as a barrier for social integration. A national survey by Kendall and Olson (1996) provided a comprehensive understanding about food insecurity of elderly Americans and factors leading to it. Surveyors found that urban or rural residence was not a factor, but ethnicity, income and health were factors. They reported the highest level of food insecurity among Hispanic elders which was followed by black elders. Because, members of minority groups were hesitant to use social services. Similarly, the poverty rate for African-Americans and Hispanics was at least double that of whites. The highest poverty rate was among African American women aged 85 and older and living alone (Buchowski & Sun, 1996). Cultural barriers are also reinforced by geography and infrastructure. There was a shortage of volunteers for home-delivered meals. Volunteers were not willing to drive to remote areas due to time lost in long distance commutes or perceived dangers.

Transportation has been reported as one of the major problems (Gilbridge *et al.* 1998). Not having access to private or public transportation may generate additional feelings of isolation and separation and limit older persons' access to other public services. Retail grocery stores and farmer's markets were located in bigger towns. Some older women have never learned how to drive or do not own a car, and it was difficult for them to ask for a ride. Consequently, due to a lack of help, they prefer not to go shopping. Thus, loss of mobility increases the likelihood of an inadequate diet.

Poverty is a strong indicator of malnutrition risk as well. Many experts cited poverty and decline in income as obstacles; financial difficulties limit both the amount of food available and the choices older persons can make. According to Bell (1995) about 40 % of older Americans have incomes less than \$6,000 a year. On the average they have less than \$25-\$30 a week for food which makes it hard to get the food they need to have a healthy diet. In the Gilbridge *et al.* (1988) study of older adults in New York City participants were asked the amounts of money spent weekly for groceries; and a relatively small portion of their income was reported. According to the ADA study in 1996, approximately 20 % of older adults were poor or near the poverty line. In addition to that, older women experience poverty at twice the rate of men due, primarily, to a lack of social security benefits or to divorce. The poverty rate for older couples (19 %) is 4 % lower than for elderly persons living alone. The elderly spend more money on insurance, prescription drugs, other medications, and doctor visits. Therefore, they have less money left for food. In relation to this, people on special diets, such as people with diabetes, cannot afford to buy special foods because of the high costs. It has been frequently reported that low fat food was more expensive than regular food items.

In addition to poverty, federal programs designed to combat hunger and food insecurity reach only one third of needy, older adults. Moreover, many who do not meet the income guidelines for food stamps will not accept aid because of the negative connotation with welfare. Most of the elderly worked hard all their lives and maintained a strong work ethic; thus, they do not feel comfortable seeking outside help. Gilbridge *et al.* (1998) also reported that recent legislative changes in welfare programs, Medicare, Medicaid, and Social Security have had negative effects on community-based services. For example, they no longer get groceries via public assistance, food stamps, and home-delivered meals.

2) Physical factors

Generally speaking, aging is associated with a decline in the homeostatic regulatory mechanism that influences hunger, appetite, and food intake. Various physical functions deteriorate with advancing age; and physiological and functional changes during aging result in changes in nutrient needs.

Poor dentition, ill-fitting dentures, oral health problems, chewing and swallowing problems, acute or chronic diseases, polypharmacy, advanced age, and immobility or inability to feed oneself are among the major risk factors (ADA, 1996). All of the above reasons can contribute to decreased nutrient intake, involuntary weight loss, and malnutrition. Prolonged periods of nutritional and certain vitamin deficiencies bring about fatigue, tiredness, and chronic depression.

Weight loss and malnutrition in the elderly population constitute a major health concern in the US. With age, there is a gradual decline in food intake that corresponds to lower energy expenditure. It is estimated that 16 % of our elders ingest fewer than 1000 kcal/day, which is an inadequate amount for a healthy functioning body (Rolls, Dimeo & Shide, 1995). It was estimated that 30 % to 60 % of the institutionalized elderly show signs of energy deficiency compared to 3 % of community-based, free-living elderly. Especially among the institutionalized, energy and protein deficiencies became very prevalent. In Posner's (1994) nursing home survey study, 30 % to 50 % of the residents were reported to suffer from protein-energy malnutrition. The loss of body protein and fat is associated with premature death, micronutrient deficiencies, frailty, increased hospital admission, and increased risk of disability from falls, and it also causes delayed recovery from injury. In a nation-wide survey study Roberts (1995) found that low dietary energy intake is common among healthy, elderly adults. Reductions in the sensations of taste and smell, poor dentition, and depression were the major reasons given for inadequate energy intake. Likewise, Posner and colleagues (1994) demonstrated that nutritional problems are also prevalent among free-living, older people as well. In the same study, non-institutionalized elderly persons also consumed less minerals and vitamins than the recommended level. It has been believed that when individuals get older there is a decrease in energy demands resulting from a decrease in basal metabolic rate and decreased activity level. Research by Rolls *et al.* (1995) at Pennsylvania State University with healthy elderly and young male volunteers, however, showed that elderly individuals were capable of consuming as much energy as young males despite lower food intake. But the authors concluded that the dietary needs of the healthy elderly proved to be generally similar to those of younger adults. The same study reported that the elderly participants consumed significantly less water than did young participants.

Metabolic and physiological changes also affect the status of vitamin B-12, vitamin B-6, and folate levels in the body that may alter behavioral, emotional, and cognitive functioning. It was reported that vitamin B-Complex and B-2 (Riboflavin) promotes energy production and healthy nerve function. B-2 (Riboflavin) maintains the defense function of the cell membranes, and also it is necessary for normal growth, development and normal physical performance. Similarly, B-12 (Cobalamin, Cyanocobalamin) is essential for normal blood formation and the protection of nerve cells

and B-6 (Pyridoxine) promotes healthy cardiovascular function. B-6 is required to convert protein and fat into energy. It plays a vital role in cell health, and the proper functioning of enzymes and the nervous systems. Buchowski and Sun (1996) reported that about 40 % of the free-living elderly have a poor vitamin B-12 status. Thus, there is an increased need for vitamin B-Complex, B-2 (Riboflavin), and vitamin D for the elderly. However, an adequate food and nutrient intake prevents some decline in mood and cognition. Similarly, B vitamin and folate deficiencies aggregate the depression level.

Age related physiological changes, including a decline in smell and taste acuity, can impair food selection and consumption. Because of a decline in thirst sensations, dehydration is also a common cause for food deprivation. In addition to that, nearly 20 % of the elderly suffer from xerostomia (dry-mouth) arising from salivary gland dysfunction associated with aging, which leads to lubricating, masticating, and swallowing problems. Additionally, 50 % of all Americans over the age of 65 have lost their teeth, which eventually affect their food choices (Buchowski & Sun, 1996).

Physical disability, arthritis, and impaired mobility may cause difficulties for shopping or food preparation. Although most elderly people are able to eat, one in five has trouble walking, shopping, buying, and cooking their food as a result of impaired movement ability (Bell, 1997). Additionally, in less mobile elderly who spend relatively short periods of time outdoors, ultraviolet radiation received from sun exposure is limited and in amounts insufficient to synthesize enough vitamin D; this results in having less than the recommended amount of vitamin D (Buchowski & Sun, 1996). In the same way, many institutionalized elderly are not physically active which leads to low energy needs and therefore generates difficulties in maintaining a sufficient intake of essential nutrients.

Bell (1997) reported alcoholism as a serious problem. Even though 10 % of people over 65 are alcoholic, this problem may go unrecognized. Elderly people tend to drink smaller amounts of alcohol each time they drink, but they have more drinks per day. Alcohol is less efficiently metabolized with increasing age; thus, excessive drinking can be an especially serious problem. In addition, drinkers tend to reduce their daily intake of calories since many of their calories come from alcohol.

Older people also sometimes go on unsupervised diets that can cause tiredness, fatigue, and depression in the long run. Malnutrition can also be iatrogenic. Patients may be prescribed a low salt, low fat diet that may reduce food ingestion; and rather than quitting some diet plan, they frequently choose to eat less.

3) Psychological factors

Reeker (1997) wrote about existential concerns such as death, freedom, isolation, and meaninglessness. The concept of depression may be explainable by existential terms. For example, knowing a person's individual meaning in life, sense of direction, sense of order and reason to live, personal identity, and social existence help us to enrich our understanding of subjective meaning and the dynamic of each person's sadness and grief.

Loneliness due to widowhood was one of the most frequently cited factors in much of the literature. Those who live alone and socially isolated may lack the incentive to plan and prepare nutritious meals. While eating is usually a social activity; people who live alone tend to eat faster and consume fewer food items. Thus, social isolation contributes to risk of malnutrition (Bell, 1995). Friendship networks are positively related to appetite and nutrient intake and, thus, have a buffering effect against many obstacles. In the same fashion, the widowed elderly enjoyed meals significantly less, had poorer appetites, and lost more weight than their married counterparts (Marcus & Berry, 1998). Generally, one third of all older people live alone. Statistically speaking, older women are three times as likely as men to be widowed, and 8 of 10 of elderly who live alone in the community women (ADA, 1996). Being with people has a positive effect on morale, well being, and eating (Bell, 1995). A majority of elderly lives a long distance from their children and even when they live in the same location as their children they did not get visited very often. As a result of this lack of care, whether unintentional or neglectful, elderly persons who cannot cook for themselves may have only one meal a day which is usually a home-delivered meal. When elderly persons live alone they frequently forget to eat or find it difficult prepare food so they frequently skip meals (Arcury *et al.* 1998).

A widely accepted fact is that some of the elderly are unable or unwilling to change dietary habits they have acquired over a lifetime (Buchowski & Sun, 1996). Some researchers have described elderly people as stubborn such that their attitude about food habits was a barrier to adequate nutrition. They were very stable in their beliefs and tended to eat food high in fat and have the same types of food that they ate when they were young. Changing old habits is thought to be very hard for them if not impossible.

Reeker (1997) reported that among the community-dwelling elderly, the prevalence of the depressive symptoms has ranged from 11 % to 44 %, with an average around 20 %. Rates of depression among institutionalized elderly outnumbered those in the community, with close to 43 % having depression. Institutionalization is an unexpected life transition that creates very stressful adjustment. Some writers have called this new phenomenon "relocation trauma". This new and unaccustomed environment and new social group

often brings depression. Lack of choice about place, food and social circle leads to feelings of helplessness and powerlessness. As a result, the institutionalized elderly are often significantly more depressed, have a lower self esteem, experience a lack of personal meaning, perceive less choice, and have fewer social contacts. Furthermore, Reeker (1997) found that female residents were more depressed compared to males.

Marcus and Berry (1998) studied refusal to eat among the elderly. Similar to his study, most of the studies regarding refusal to eat in the elderly have been conducted in institutional settings. Food refusal was very common among newly admitted nursing home residents because of "relocation trauma". In a study in Sweden, O'Conner (1998) interviewed nursing home staff. Noberg believed that patients deliberately refused foods because they wished to die. Existential concerns, meaninglessness, and the approach of the end of one's life may direct self-destructive behavior which is covert, indirect, and perhaps even directs unconscious suicidal behavior. Self-destructive behavior was associated with suicidal tendency resulting from dissatisfaction with the treatment received and with one's life in general, confusion, poor judgment, poor prognosis, lack of religious commitment, and significant losses in the person's life. Another reason for self-destructive behavior was the dislike of certain food items. In a nursing home, residents' choices are limited. Consequently, many elders refuse to eat because they do not like the food they are served. In some cases, nursing home residents may reject the food in order to punish a staff members who has not been kind to them or because they want to protest against a certain caregiver. They may also refuse to eat as a way of manipulating the staff and to get more attention. Many of the patients in nursing homes need assistance and extra time to eat; however, due to lack of staff, they do not receive the extra care they need, and as a result they refuse to eat. Additionally, patients with late-life paranoia may refuse to eat because they think they are being poisoned. In addition, demented patients with reflexive withdrawal behavior, dementia, cardiovascular disease, and Parkinson's disease might have difficulty talking and expressing their wishes.

Researchers mentioned that food refusal was common among cognitively impaired patients. Patients with Alzheimer's can have an agnosia with difficulties interpreting sense data related to vision, taste, smell, or touch. Also, patients might refuse food because they cannot recognize it. In advanced cases, patients with dementia may not want to eat due to a wish for death. Consequently, prolonged reduced food intake among demented patients causes depression. Therefore, in any demented patient with eating problems, the presence of depression should be assessed. Changes in functional status, somatic complaints, pain, and fluctuations of mental ability may signify the onset of depression.

Buchowski and Sun (1996) mentioned lack of knowledge as a risk factor. Many elderly individuals are confused about

how to select and eat a healthy diet and often harbor misconceptions about the nutritional value of specific foods. These researchers suggested nutrition education and nutrition counseling for those who need more information.

Depression is the most common cause of weight loss among both institutional and community-dwelling elderly. Depression in the elderly may be a primary diagnosis or a complication of underlying physical illness. Somatic concerns in the elderly depressed patient are more common than in younger patients. Older patients also often elaborate delusions of diseases or dysfunction of bodily organs. Early diagnosis of depression is crucial in order to initiate adequate psychological and nutritional treatment.

Accordingly, improved nutritional status in older adults benefits both individuals and society. When health improves, dependency level decreases, and health care costs decrease. Food and nutrition can contribute to the quality of life, improving or maintaining emotional status and decreasing de-

pressive moods. Therefore, nutritional screening and assessment must be multifaceted. Effective nutritional treatment must be comprehensive and includes all social, physiological, and psychological aspects of nutrition. First, health care and mental health professionals identify those who are having depressive symptoms. In relation to that, special attention needs to be paid to elderly people's nutritional needs. For that reason, a comprehensive nutrition assessment must cover the patient's anthropometrical, biochemical, clinical, dietary, economic, functional oral, mental, and psychological status. There is a need for developing and promoting direct prevention and intervention strategies to enhance the nutritional status and psychological functioning in the elderly population living in long-term facilities or in community settings. Hence, mental health counselors, nurses, geriatric physicians, social workers, and dietitians need to work together and benefit from each other's referrals.

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(Artículo recibido: 27-7-2008; aceptado: 15-10-2008)