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The Need for Innovative Methods to Increase Adherence in Individuals Experiencing Cognitive Decline

Abstract: *Cognitive impairment, particularly coupled with advanced age, is becoming an increasing concern for both clinicians and caregivers. Nonadherence is a common problem in individuals with cognitive impairment, leading to concerns regarding patient autonomy. The development and use of innovative strategies to overcome nonadherence is important to increase the likelihood of engagement in healthy lifestyle behaviors.*

Keywords: cognitive decline; Alzheimer's disease; autonomy; caregivers

Impairment in cognitive function, particularly with aging, has emerged as a significant quality of life issue both in the United States and worldwide. As discussed in the issue by Marchand and Jensen,¹ declines in cognitive function, including but not limited to dementia, impose significant burdens on both caregivers and health care systems.² Cognitive decline has been defined by impairment in a variety of mental tasks, including attention, executive function, and memory.^{3,4} The

development of mild cognitive impairment (MCI) has been associated with progression of dementia.⁵ MCI is defined as a slight yet noticeable and measurable decline in cognitive abilities⁶. MCI may be domain specific, such as in amnesiac MCI (aMCI), in which memory and/or executive function is primarily affected.

early detection of AD have become important areas of clinical focus. As such, the evidence base has grown in the past decade in evaluation of factors contributing to cognitive decline risk such as diet, genetics, and general health state. Specifically, metabolic syndrome and its component diagnoses (type II

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Relationship to Aging and Comorbidities

Development of MCI and possible conversion to dementia, particularly Alzheimer's disease (AD), is generally associated with advanced aging.⁵ The conversion of MCI to AD has gained notable interest in the research community, as prevention of AD and

diabetes/insulin resistance, obesity, and dyslipidemia) have all been associated with both MCI, AD, and other forms of dementia.⁷⁻⁹ Some early, but important evidence indicates that both obesity and metabolic factors lead to early cognitive deficits in minority populations,¹⁰ suggesting that the trajectory of cognitive impairment development may be set as early in life as adolescence.

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Patient Nonadherence

Cognitive impairment adversely affects the ability to achieve complex daily self-management tasks such as meal preparation, taking medications, and exercise.¹¹⁻¹³ Many of these tasks require individuals to manipulate their environment. Difficulty in performing such tasks may result in reduced ability to perform and maintain self-care. Such reduced ability may result in noncompliance in a number of areas, including but not limited to dietary and medical regimens. Patients have poor awareness of these changes, leading to resistance of aid in managing daily tasks.¹² In some cases, cognitive impairment coupled with self-reported beliefs on low medication/treatment efficacy (eg, “My medication doesn’t work for me”) or unwanted side effects (eg, “I don’t like how I feel while on my medication”) may result in aggressive noncompliance. In these cases, individuals feel that they are being coerced into performing unnecessary actions related to medical management. Behaviors associated with aggressive noncompliance may include agitation, emotional distress, excessive motor activity, and aggression.¹⁴ These behaviors are well documented in patients with AD; however, such behavior is common to other forms of cognitive impairment/dementia.¹⁵

The aggregation of these occurrences may result in a loss of independence and reduced quality of life. This presents major challenges for both caregivers and clinicians in medical management, particularly in the event of comorbid diagnoses. At times, this may lead to reduced autonomy and increased reliance on caregivers to monitor and promote medical adherence. As cognitive decline accelerates in a patient, caregivers and clinicians may have difficulty navigating the balance between appropriate patient care and patient perceived coercion.

Improving Adherence in Individuals With Cognitive Impairment

The issue of nonadherence is complicated within this group. As briefly discussed above, individuals experiencing cognitive decline frequently report that treatments are not producing the desired effects and wish to avoid adverse consequences of treatment recommendations.¹⁶ The actual rate of adherence to chronic medication regimens is estimated to be about 50% after 1 year¹⁷ with some evidence indicating that adherence decreases with age.¹⁸ The same issues are found for lifestyle treatments that have demonstrated efficacy.¹⁹ For instance, exercise has been shown to significantly improve mood, sleep, cognitive function, and social outcomes.^{20,21} However, a considerable number of individuals do not begin these activities²² and a significant proportion of individuals do not maintain them in the long term.¹⁹ Care providers are faced with the difficult task of attempting to convince individuals to engage in behaviors that are viewed as undesirable.

Social support is an excellent way to increase adherence to many lifestyle issues. For individuals with cognitive decline, this social support is frequently provided by a caregiver. In studies where caregivers are the primary source of encouraging physical activity, overall adherence is fairly low.²³ This is not surprising as caregivers are frequently providing continuous care for an individual, which is a very difficult task. The stressors that caregivers experience include but are not limited to significant sleep disturbance,²⁴ lower quality of life,²⁵ and increased risk for depression.²⁶

The Need for Innovation

The application of lifestyle principles is often surrounded by obstacles and barriers. In this instance, individuals with significant needs are experiencing a loss of autonomy. This loss of autonomy can significantly decrease their willingness to

take the recommendations of those providing care on an ongoing basis. This happens for multiple reasons, but perhaps, the most salient reason is that individuals with cognitive decline can view caregivers as reasons for their loss of autonomy or as a stark reminder of the need for assistance. In situations in which typical means of social support have significant barriers, there is a need for innovative solutions.

A study by Arkin²⁷ provides an excellent example of innovation. An intervention was developed to increase fitness by walking by using social support in individuals with AD. Instead of relying on family caregivers solely, college students (who received college credit) provided the social support by meeting with the patient, and caregivers supplemented these sessions. As a result of this intervention, highly significant fitness gains were achieved, cognitive declines were slowed, and mood improved. More impressively, Arkin²⁷ reported that 100% adherence to this exercise program was achieved. By connecting individuals with someone who they most likely had few negative experiences with and who provided a novel and enjoyable interaction, this study achieved an incredibly high level of adherence in a group that typically has relatively low levels of adherence.

We are frequently encouraged to “not reinvent the wheel.” In this instance, Arkin²⁷ continued to use social support. However, social support was adjusted to improve outcomes. Instead of reinventing the wheel, these researchers developed a better way to turn the wheel. Innovation of this sort is clearly needed in all of lifestyle medicine, and this is particularly true for individuals with cognitive decline.

Conclusion

The value of respecting the individual is critical in providing the best care for individuals who are experiencing cognitive impairment. Respect for persons includes two important requirements: (a) that individuals should

be treated as autonomous agents and (b) that persons with diminished autonomy are entitled to protection.²⁸ The loss of capacity for self-determination is a hallmark of cognitive decline. As cognitive decline accelerates, these patients must be protected from harmful activities and encouraged to engage in helpful activities (eg, adhering to medications, exercising); however, they should be permitted to undertake activities freely and with awareness of possible negative outcomes. Using innovative strategies as discussed in this manuscript is an excellent way to demonstrate respect for an individual with cognitive decline and increasing the likelihood of engagement in healthy lifestyle behaviors.

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Ethical Approval

Not applicable, because this article does not contain any studies with human or animal subjects.

Informed Consent

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Trial Registration

Not applicable, because this article does not contain any clinical trials. **AJLM**

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