

into programs related to other health concerns, e.g. a dementia lecture at a stroke conference or AD research recruitment via networking with grassroots community advocates. Door-to-door recruitment was an effective method of rural recruitment. **Results:** Both sites observed considerable increases in recruitment of targeted minority groups, with minority enrollment meeting or exceeding the diversity demographics of the relevant region. For example in one West Texas county cohort, African Americans compose 8.2% of the cohort (vs. 5.2% of the county population) and Hispanics represent 44.8% (vs. 35.4% of the county population). Word-of-mouth referrals and requests for outreach programs from new community contacts increased markedly. **Conclusions:** With the increasing complexity of AD research studies, social marketing provides a responsive, evolving, and effective means to achieve minority recruitment goals. This recruitment method is responsive to community interests and needs and is effective and modifiable to the target population and regional characteristics.

P2-414 STRESSFUL LIFE EVENTS AND THE OUTCOME OF DEMENTIA

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Background: The sporadic nature and late onset of most AD cases could suggest that aside from biological determinants, environmental factors such as stress may play a role in the progression of the disease. Recent data implicated stress as a potential risk factor in the development of AD. The present study aims to analyze the relationship between recent stressful life events and the development of AD. **Methods:** We studied 98 patients with clinical diagnosis of probable AD, according validated criteria, in mild to moderate stages. The medium age was 73 years and the educational level was 8.2 years. The mean time elapsed from the diagnosis or the initial symptoms was 2.7 years. A control group of 72 healthy individuals, paired by age, gender and educational level was studied. A standardized questionnaire looking for significant stressful life events in the 3 years before diagnosis of AD was performed to patients, family caregivers and control individuals. **Results:** In the AD group, 71 patients (73%) presented a history of significant stressful life events 2.1 years (SD 1.3 years) before the onset of the symptoms. The most common findings in this group were couple death (19 cases), child death (13 cases), history of assault or violent theft (11 cases), history of car accident without severe injuries (9 cases). Other stressful situations were marked financial problems, bereavement, retirement, adaptive changes due to migrations and diagnosis of severe somatic disease in the family. In the control group, only 16 individuals (22%) recognized a similar stress factor in the previous 3 years. **Conclusions:** In our study, we observed an association between stressful life events preceding the onset of dementia symptomatology in a high percentage of our patients. Different authors hypothesized that stress could trigger the degenerative process in AD and growing evidence suggest a dysfunction in the neuroendocrine and immune system. According our results, we can establish a relationship between several stressful life events and the onset of the initial symptoms of dementia. It is an observational finding and does not imply direct causality. Further studies are required to examine this association in more detail.

P2-415 MEASURING THE ONSET OF ALZHEIMER'S DISEASE AND OTHER COGNITIVE DEMENTIAS IN SAMPLE SURVEYS: IDENTIFYING EARLY SIGNS OF IMPAIRMENT AND FROM RESPONSE PATTERNS IN FOLLOW-UP INTERVIEWS

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Background: While Alzheimer's remains a relatively rare outcome in the general population, the diagnosis of dementia represent a common reason for refusals in follow up surveys of the aged. This paper looks at longitudinal

studies which identify respondents ultimately diagnosed with cognitive impairments and seeks to categorize patterns in response rates and refusals in follow up interviews. **Methods:** Building on earlier work, we seek to identify early indicators of cognitive impairment in survey response patterns. This is accomplished through observed changes in standard tests of cognition and an examination of response patterns across time; frequency of inconsistent answers, patterns of refusal, don't know and no response, as well as the presence of proxy respondents. The survey instrument itself has been identified as a source of mental stress in studies of the elderly and it is argued that those with greater problems in completing a survey should be at higher risk of subsequent refusal due to cognitive health concerns. What is poorly understood however if there are observable patterns in non-response that are predictive of early signs of declines in cognitive functioning. **Results:** As would be expected, measured declines in cognitive function and overall health across time are predictive of dropping out of surveys. Often changes are missed due to the lack of detailed probing into response changes, extended periods between follow-ups, and potential conditioning of respondents from repeated administration of similar questions. When examining response patterns we find subtle indicators of changes in memory such as the inability to consistently answer specific questions across waves. These differences, while speculative, suggest that sensitivity to such patterns could refine these indicators. More sophisticated measures could offer additional indicators of early cognition concerns. **Conclusions:** While our capacity to develop life courses studies improves, much foundation work remains and the innovative use of existing studies is essential. This paper shows one application using survey response patterns to predict a diagnosis of a dementia and subsequent loss to the survey population. This approach may help us better understand who is at risk of cognitive impairment and offer further understanding in patterns that are suggestive of this risk.

P2-416 COGNITIVE STIMULATION IN ELDERLY PEOPLE

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Background: The aging process can be accompanied by a decline in both physical and cognitive skills. Brain and cognitive reserve explain the risk and the protective factors for cognitive impairment (including the gradual decline into dementia), associated with brain injury. The maintenance of cognitive health is of vital importance in the quality of life and well-being of older people. This can be achieved by preventing cognitive impairment which can delay the onset of dementia. In order for information to be preserved, it has to be requested. Stimulation using activities that require attention, concentration and logical thinking contributes to an increase in the brain's synaptic density whose transmission network is responsible for the dynamics and plasticity of the brain. Cognitive stimulation has an effect on the recovery of cognitive functions because it influences neural and functional plasticity. Although long-term outcomes are controversial, evidence suggests that cognitive stimulation (such as cognitive training and participation in intellectual activities) should be an essential component of elderly care and should begin as early as possible. Not only do these activities keep elders mentally active while having an enjoyable time, but they can also help to preserve their cognition. This may, in turn, improve activities of daily living (ADLs). In fact, several studies have provided statistical evidence that cognitive stimulation helps to improve the cognitive function of elders with or without cognitive impairment. Evidence also suggests positive effects of cognitive stimulation when combined with cholinesterase inhibitor medication [1-3]. **Aims:** To assess the effect of a stimulation programme on the cognitive functions of elders. **Methods:** A one-group pretest-posttest study was conducted to measure cognition differences between two different samples in different settings (referred to as study 1 and study 2). The intervention, a cognitive stimulation programme, was developed by a team composed of the researchers, the local teams of nurses and final-year students (4th year) of the nursing undergraduate course who had received training to implement the programme. In study 1, from October 2009 to

January 2010, there were 4 sessions per week and in study 2, from April to June 2010, 3 sessions per week. Each session lasted between 1 and 1.5 hours. The cognitive stimulation programme was composed of exercises adjusted to the participants' impairments, stimulating different areas: attention, language, gnosis, memory, praxia, and executive functions. Activities included reading, interpretation and reference to texts; sentence ordering; construction of action sequences; similarities and differences between figures; arithmetic calculus; identification of objects, their gender and antonyms; identification of textures, sounds, images and smells; sentence completion; selection of figures, numbers and words; memorization of shopping lists; use of personal stories; mimics; copy of drawings; painting; ball games; proverbs and metaphors. Instruments The Folstein's Mini-Mental State Examination (MMSE) and the Barthel ADL Index were used as pretest and posttest in both studies (1 and 2). Setting and Sample Study 1: 13 elderly inpatients in a long-stay continuing care unit in the Center region of Portugal. The sample was composed of 4 men and 9 women, aged 65-87 years, mean age 66.90 years, SD 6.20 years. In the posttest, one patient was excluded from the sample for not having completed the intervention programme due to worsening of the clinical symptoms presented. Study 2: 27 elders attending a day center in the Center region of Portugal. The sample was composed of 8 men and 19 women, aged 65-99 years, mean age 82.48 years, SD 7.06 years. Inclusion criteria: Both studies included the elderly people using these services who agreed to participate in the programme and whose physical or cognitive impairment did not impede participation. **Results:** Study 1: ADLs: Barthel Index assessed in the pretest revealed 8 participants with severe dependence, 3 with moderate dependence, 1 with mild dependence and 1 independent. Wilcoxon Signed-Rank Test (pretest-posttest) showed 9 negative ranks (Mean Rank 5.11), 1 positive rank (Mean Rank 9.00) and 2 ties ($z=-1.896$; $p=0.058$). Cognition: MMSE used in the pretest assessed 6 participants with cognition and 7 with cognitive impairment. Wilcoxon Signed Ranks Test showed 5 negative ranks, 6 positive ranks and 1 tie (Table). Study 2: ADLs: Barthel Index assessed in the pretest revealed 3 participants with severe dependence, 8 with moderate dependence, 7 with mild dependence and 9 independent. No differences were found in ADLs between pretest and posttest. Cognition: pretest MMSE assessed 20 participants as having "normal" cognition and 7 with cognitive impairment. Wilcoxon Signed-Rank Test showed 3 negative ranks, 14 positive ranks and 10 ties (MMSE) (Table). **Conclusions:** Study 1: In the pretest with 13 participants, 8 showed a severe dependence in ADLs and 7 presented cognitive impairment. In the posttest, 6 of the 12 participants who completed the programme showed a positive cognitive development, whereas 5 had a negative development. In addition, 9 participants became more dependent. Study 2: In the pretest with 27 participants, only 3 showed severe dependence and 7 had cognitive impairments. 14 of them presented positive cognitive development, whereas 3 showed a negative development. No evolution was observed as far as dependence is concerned. The stimulation programmes had positive outcomes, particularly in study 2. Both studies had limitations, including the lack of control groups and the small sample used in study I (composed of highly dependent older people). It should be underlined that these patients were hospitalized in a long-stay Continuing Care Unit because their clinical or social condition did not allow them to go back to their homes. Furthermore, 3 of these patients presented a worsening of their clinical status, particularly respiratory infections that may have limited the effectiveness of the stimulation programme. Cognitive stimulation should be included in older people's health care regimens because it may preserve their cognitive and functional abilities and, as a result, provide a higher independence level. Small improvements and the stabilization of cognitive functions can be considered significant health gains. People with mild-to-moderate cognitive impairment should be given the opportunity to participate in a structured group cognitive stimulation programme. References 1. Jean L, Bergeron ME, Thivierge S, Simard M. Cognitive intervention programs for individuals with mild cognitive impairment: systematic review of the literature. *Am J Geriatr Psychiatry* 2010 Apr;18(4):281-96. 2. Spector A, Woods B, Orrell M. Cognitive stimulation for the treatment of Alzheimer's disease. *Expert Rev Neurother* 2008;8(5):751-57.3. Yassuda MS, Bastistone SST, Fortes AG, Neri AL. Treino de memória no idoso saudável: benefícios e mecanismos. *Psicol Reflex Crit* 2006;19(3):470-81.

Table

Evolution of cognition after cognitive stimulation

Evolution MMSE	Ranks	n°	Mean Rank	z	p
Study 1 MMSE pre-posttest	Negative Ranks	5	4.50	-0.936; 0.349	
	Positive Ranks	6			
	Ties	1	7.25		
	Total	12			
Study 2 MMSE pre-posttest	Negative Ranks	3	8.83	-2.390; 0.017	
	Positive Ranks	14			
	Ties	10	9.04		
	Total	27			

P2-417

IMPACT OF AN INTERDISCIPLINARY TEAM ON MEDICATION MANAGEMENT IN DEMENTIA PATIENTS

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Background: The Geriatrics/Dementia Clinic at the Baltimore Veterans Affairs Medical Center (VAMC) is a multidisciplinary program that demonstrates the success of collaboration among several healthcare services at the Baltimore VAMC, including: the Geriatric Research, Education and Clinical Center (GRECC), Mental Health (psychiatry and neuropsychology), Pharmacy, Nursing and Social Work. This interdisciplinary clinic has been performing comprehensive geriatric assessments for approximately 200 patients with dementia each year, for nearly two decades. In addition to complete review of all medications by Advanced Practice Clinical Pharmacists, veterans receive extensive medical evaluation by Geriatricians, Social Work case review, and Neuropsychiatric assessment and management. Recommendations are made which often address medication management issues such as adherence, anticholinergic burden and the use of cognitive enhancing medications (e.g. cholinesterase inhibitors and memantine). Strength of the multidisciplinary team approach is its comprehensive approach, allowing for true "patient-centeredness" and its provision of educational materials regarding dementia and available community resources to assist with needed care. However, despite its many obvious benefits, veterans and their families often leave clinic with a staggering amount of information as well as numerous recommendations for future care, and the extent to which recommendations are comprehended and followed is unclear. Finally, patients living in more outlying regions have a difficult time accessing the clinic, and there can be poor follow-up in the home and community where care must be continued. We therefore developed the Dementia Evaluation, Management and Outreach (DEMO) Program with the dual goals of improving both quality of and access to care. The former is achieved by providing ongoing coordinated care to at-risk patients and their families and the latter by extending dementia evaluation services to regional community-based outpatient clinics. In this way, we aim to also contain costs through decreased hospital visits, hospitalizations, and institutionalization, while at the same time improving both the quality of and Veterans' satisfaction with health care. This presentation is focusing on evaluating the medication management aspect of the Dementia Evaluation, Management and Outreach Program. **Methods:** This study is a clinical demonstration project to study the effects of extending dementia evaluation services to regional community-based outpatient clinics as well as expanded longitudinal follow-up and case management. There are no control groups, and no randomization procedures. All patients seen for dementia evaluation at the