Cognitive reserve and cognition in old age: the mediating role of chronic diseases

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Abstract

The present study is the first so far in empirically testing the recent conceptual view that the number of chronic diseases may mediate between the build-up of cognitive reserve (e.g., by educational attainment and cognitive level of job) on the one hand and cognitive performance on the other. We assessed Psychometric tests on processing speed and verbal ability in 2812 older adults (mean age = 77.9 years) from Switzerland. Individuals were interviewed regarding their education, occupation, and chronic diseases. Results showed that higher educational attainment and higher cognitive level of job were significantly related to better performance in processing speed (rs >= .15, ps = .27, ps < .001). These relations were significantly mediated via the number of chronic diseases. Mediation effects of the relation of educational attainment to cognitive performance were 5.3% exerted indirectly (β = .01, p = .007) for processing speed and 1.5% exerted indirectly (β = .01, p = .014) for verbal ability. Mediation effects of the relation of cognitive level of job to cognitive performance were 7.3% [...]
services (n=11). The factors underpinning uncertainty around the decision to admit were age >75 years, co- and multi-morbidities, dementia, home situation, availability of social support and individual coping abilities.

Data suggest that alternatives to acute hospital admission appear safe and effective, with potential to reduce secondary care use, length of time that care is needed and reliance on community resources. However, there is a lack of available information about the patient-related outcomes and costs of such interventions.

**FOSTERING NURSES WHO CAN TAKE ON THE CHALLENGE OF A SUPER-AGING SOCIETY IN URBAN AREAS**

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We established an instructional lab (IELABO) in Tokyo, and then creating an environment in which nurses, nursing students and caregivers can actually put themselves in the shoes of a (fictional) elderly resident, and always being aware that the recipients of nursing care are individuals with their own lives. In this educational program, nurses and caregivers learned together. As they progressed through the program, they learned each other’s strengths, thereby building the framework for collaboration. We shared the IELABO learning outcomes with residents in Tokyo. We place great stock in the motivational value of such civic pride in work.

Major points of outcome are summarized as follows:

1. By learning in a home setting, learners could place themselves next to the elderly persons in their care and their family members, and devise and implement a realistic care plan centered on the daily lives of said persons.

2. By enabling communication in a daily-life setting (i.e., the home), care providers could discuss daily life-oriented care with care providers working in other care provision settings, leading to mutual understanding.

The IELABO became the hub of this program. In the presentation, the outline of the IELABO project as well as its details is presented with special emphasis on the collaboration framework among the nurses, caregivers, and local communities. This will provide a new perspective to the practical and conceptional studies of comprehensive care for elderly citizens.

**USING MAINTENANCE OF CERTIFICATION TO PROMOTE ADVANCE DIRECTIVE DISCUSSIONS IN PRIMARY CARE**

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Background: Physicians and patients agree that primary care visits are the appropriate place to discuss advance directives (AD) with geriatric patients as it normalizes the discussion. Yet barriers are known to keep AD completion rates low.

Methods: An interprofessional team designed and implemented a three-health care system approved AD focused Maintenance of Certification (MOC) Part IV activity for primary care physicians (PCPs) to meet American Board of Medical Specialists (ABMS) requirements. The activity focuses on PCPs initiation of brief (2–3 min) AD conversations with geriatric patients. The activity was launched at a state-wide PCP meeting using a workshop that employed interactive educational strategies (quiz, video analysis, role play). Retrospective “post-post” evaluation focused on workshop processes and outcomes.

Results: Eight PCPs completed the session reporting that at baseline the modal number of conversations PCPs initiated each week about ADs was < 1/week (range 0 to > 10). All participants targeted a minimum 25% increase in AD conversations as the improvement goal. Post workshop evaluation analysis found: 1) improvement among four literature-based barriers to AD discussions in the aggregate of responses; 2) all participants were more likely to initiate conversations with patients about ADs; and 3) 88% (7/8) were “very likely” to recommend the session to a colleague.

Conclusion: Experienced PCPs perceive AD discussions as fraught with barriers. This brief (90 min) interactive AD discussion focused MOC activity minimized perceived barriers and increased primary care physician commitment to increase AD discussions with geriatric patients.

**COGNITIVE RESERVE AND COGNITION IN OLD AGE: THE MEDIATING ROLE OF CHRONIC DISEASES**

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The present study is the first so far in empirically testing the recent conceptual view that the number of chronic diseases may mediate between the build-up of cognitive reserve (e.g., by educational attainment and cognitive level of job) on the one hand and cognitive performance on the other. We assessed Psychometric tests on processing speed and verbal ability in 2812 older adults (mean age = 77.9 years) from Switzerland. Individuals were interviewed regarding their education, occupation, and chronic diseases. Results showed that higher educational attainment and higher cognitive level of job were significantly related to better performance in processing speed (rs >= .15, ps < .001) and verbal ability (rs >= .27, ps < .001). These relations were significantly mediated via the number of chronic diseases. Mediation effects of the relation of educational attainment to cognitive performance were 3.3% exerted indirectly (β = .01, p = .007) for processing speed and 1.5% exerted indirectly (β = .01, p = .014) for verbal ability. Mediation effects of the relation of cognitive level of job to cognitive performance were 7.3% exerted indirectly (β = .01, p = .004) for processing speed and 1.8% exerted indirectly (β = .01, p = .015) for verbal ability. In conclusion, individuals with higher educational attainment and higher cognitive level of job in early and midlife may suffer from fewer chronic diseases later in life. This may finally preserve their performance in verbal ability and processing speed in old age.

**ASSOCIATION BETWEEN FRAILTY AND POSTOPERATIVE Complications IN PATIENTS UNDERGOING ABDOMINAL SURGERY**