Early and Routine Screening Interventions from Primary-Care Clinics to Community Practices

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Abstract- The study provides results of primary-care clinic to promote early and routine screening interventions for future research addressing the needs of community-based on research and practices. Perceptions of mild-cognitive decline were connected to demographic and psychosocial factors. Results may help inform early screening intervention for community practices as well as primary-care clinics. Executive Function (EF) is necessary for independent, purposeful, self-care behavior. Client's with impaired EF have difficulty with complex self-care tasks, medication management, and driving. Older age is associated with higher rates of cognitive impairment in general. Among persons 50 years and older the prevalence of cognitive impairment is higher among women when compared to men. Little is known about gender differences for younger ages.

Index Terms-Intervention, Primary-Care, Community Practice, Executive Cognitive Function, Routine Screening

I. Introduction

IN the past century, there has been a transition in healthcare from focusing on primary care service to person or family-focused and community-oriented primary care services to meet the health needs of the population. The terms "primary-care" refers to family medicine services typically provided by physicians to individual clients and is person-oriented. Also the term implies "primary healthcare" and it is a broader concept intended to describe both individual-level care and population-focused activities that incorporate public health elements (Muldoon, Hogg, & Levitt, 2006). Traditionally, primary-care plays a central role in a healthcare delivery system.

However, the term "community-based practice" has a wide range of meanings. In this article the researcher focuses on "4 categories of community-based studies: community as setting, community as target, community as agent, and community as resource (McLeroy, Norton, Kegler, Burdine, & Sumaya, 2003). According to the medical dictionary, "community-based practice" is the provision of skilled therapy services within a client's own home or community, with the requirement that the social worker take into consideration the lifestyle of the client and the cultural and social characteristics of the client's community. Typically such a practice provides expert knowledge that is not otherwise available to the client and ends when the needs calling it into existence have been met.

The term community-based often refers to community as the setting for interventions. As setting, the community is primarily defined geographically and is the location in which interventions are implemented (McLeroy, Norton, Kegler, Burdine, & Sumaya, 2003). The focus of early and routine screening intervention research is primarily on screening individuals' Executive Function (EF) as a method for detecting the population's early signs of EF's impairment.

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Neurocognitive impairment can adversely affect independent activities of daily living (e.g., managing medications, scheduling appointments), as well as affecting quality of life. Few studies have examined whether cognitive declines in older adult populations translate into functional impairment. Surprisingly, most studies have not examined the early and routine screening intervention for EF decline in clients. Neither have prior studies examined risk factors for EF in younger vs. older clients and female vs. male.

Moreover, none of the health related research disciplines have addressed the need for social work interventions in primary care settings to community practices. People with EF's impairment require a complex array of social support services. People with EF impairment require a network of formal and informal supports and services for optimal functioning and well-being.

II. Literature Review

The term *executive function* is used as an umbrella for various complex cognitive processes and sub-processes. Executive Cognitive Functions (ECF) are relatively complex behaviors that include planning, active problem solving, working memory, initiation of activity, inhibition of irrelevant and inappropriate behaviors, and the capacity to monitor the effectiveness of one's own behavior (Grigsby, Kaye, Baxter, Shetterly, & Hamman, 1998). According to Royall, most attempts to define executive function resort to a list of examples such as planning, task-switching, or another useful umbrella term, *working memory*, which reflects the fact that executive function is by no means a unitary concept. The neuropsychological literature converges on the view that successful performance on tests of executive function is critically dependent on the frontal cortex; indeed, the terms *executive function* and *frontal lobe function* are often used synonymously. However, recent theories have suggested that this view is simplistic and that subcortical regions may also be critically involved (Royall, Cordes, & Polk, 1998)

The frontal lobes have been associated with higher cognitive functions. Executive *dys*function has been associated with certain problem behaviors, including apathy and disinhibition. Hence, a wide variety of patients' daily activities require executive

functioning. Many may be of particular interest to primary health care providers, including self-management, taking medications properly, comprehending medical information and making medical decisions during the informed consent process (Royall, Palmer, & Chiodo, 2004). Historically, however, no studies to date have examined the prevalence of impaired executive function in a primary care setting.

III. METHODOLOGY

This study used a quantitative cross-sectional research and the unit of analysis was the individual client while the main grouping variable was the primary-care clinic site. The study was approved by the Institutional Review Board. During a series of one-day sessions in each of our primary care clinics, researcher administered CLOX test to all clients seen aged 18 years and older. To perform the CLOX test a subject is asked to 'Draw a clock with the time set at 1:45. Place the hands on the face so that even a child can read it' (Royall et al., 1998). The clock is then scored based on 14 criteria. A drawing without errors can have a maximum score of 14 points, and drawings were judged impaired if they had a score of 9 or less. This research presents preliminary data from 6 of our 22 community-based clinical sites.
Instrument: CLOX test. Measures clock drawing on a 15 point scale. Score <=9 considered impaired. Clients: N=597, 72.6% female.5 General Primary Care Practices: Social Services for clients. Provide care for medically and socially underserved clients.

The Research CLOX instructions can be repeated until they are clearly understood, but once the subject begins to draw no further assistance is allowed b(Royall, Cordes, & Polk, 1998). The participant is presented only with a blank surface and no further guidance regarding the task. The Research CLOX reflects performance in various ways. Clients are responsible for choosing the clock's overall form (a digital or analog face, alarm clock, wrist watch, or wall clock, etc.), its size, position on the paper, elements (hands, numbers, date, indicators), and the forms of these elements (hands as arrows, relative lengths, Roman versus Arabic numerals, etc.) (Royall, Cordes, & Polk, 1998). Furthermore, the subject must also initiate and persist in clock drawing through a sequence of constructional actions (usually drawing the outer circle, followed by placing the numbers, followed by setting the time).

Finally, the Clock form and its verbal instructions have been designed to distract the subject with strongly associated but irrelevant cues. The survey instructions use the words *hand* and *face* because they are more strongly associated with body parts than clock elements and may trigger semantic intrusions from their more common meanings. Moreover, the number *45* does not appear on a typical clock face and may intrude into the client's construction in the form of a digital image (1:45) or hands pointing to the four or five o'clock positions (Royall, Cordes, & Polk, 1998).

IV. FINDINGS

Impairment Rate by Age. 16.2 percent of clients demonstrated impaired executive function. There were significant differences impairment rates between clinic sites. To remove the effect of age, age adjusted rates were calculated for each clinic site. Rates of executive impairment vary by age and gender. Although oldest clients have the highest rates of impairment, there is evidence of impairment in even the youngest age groups. The rate of impairment increases with age.

Group Age 50 and older (n=79). The percent impaired across all clinic sites combined was 32.9%. There were no significant differences in average CLOX score by site which ranged from 9.4 to 10.4. Among those with a score of 9 or less, 61.5% were female. *Group Age 49 and younger (n=163).* The percent impaired across all clinic sites was 20.9%. In this age group, there were significant differences in CLOX score by site ($F=2.72$, $p<.02$). Among those who were impaired, 67.6% were male. *Impairment Rate by Gender*. At every age, men are more likely to be impaired than women. Both groups show an age related increase in the prevalence of impairment.

V. CONCLUSION

These data suggest that executive impairment in the general population of primary care client is common. The researcher also identified significant differences between clinics in the prevalence of impaired younger adults. While the rate of cognitive impairment was expected among older adults, the prevalence among 18 to 49 year olds is surprising. Our sample of impaired adults aged 50 and older were mostly female. In most studies of older adults, clients with cognitive impairment are predominantly female. However, the male predominance among younger adults suggests a gender difference in the timing of the presentation of cognitive decline. If these observations can be replicated, they have significant implications for social work practice.

VI. IMPLICATION AND FUTURE RESEARCH

One implication of these observations is that the gender difference in EC impairment may be attributable to unrecognized cognitive impairment among younger men. Executive impairment is highly prevalent in our training clinics. Two surprise observations were the impairment rates among males and persons under the age of 45. The researcher is continuing to collect these data in a wider variety of primary social work clinical settings and community settings. If the trend remains, we would advocate proactive screening with clock drawing in general social work primary care setting. Social work practitioners use the clock drawing test and whichever coring model they prefer, then move the knowledge base to the next level by learning how to treat clients with such impairment from primary-care clinics to community-based practices.

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