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Prevention of Mental Disorder in Older Adults: Recent Innovations and Future Directions

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Abstract

As the global population is aging, increased efforts should be placed on preventing mental disorders in older adults, as opposed to just focusing on sickness and treatment. We provide an overview of existing innovations in prevention in the domains of pharmacotherapy, psychotherapy, and psychosocial interventions. These programs have shown that depression and anxiety can be prevented from recurring, incidence of new disorder can be reduced, and general mental health can be promoted. We also give direction for future research to move the field of geriatric mental health prevention forward.

Benjamin Franklin famously said “An ounce of prevention is worth a pound of cure” (Saunders, 1732-1758). In the field of mental health, prevention efforts have the ability to decrease the costs of health care, reduce the incidence of mental illness, and enhance well-being and functioning of individuals. The National Institute of Mental Health lists in its Strategic Objective 2.3 the goal “to develop and test innovative interventions to reduce risk and positively alter trajectories of illness” (2008). Though prevention programs have been widely discussed and implemented in some disciplines such as public health, innovation relating to the prevention of mental disorders lags behind, particularly for older adults where focus has been placed on sickness, disability, and treatment of disease.

Traditionally, preventive efforts have focused on children and adolescents to promote positive health trajectories early in life (National Research Council & Institute of Medicine, 2009). However, mental health problems are common in older adults and associated with risk and protective factors that differ from those active in early life. Some factors such as education and early-life socio-economic advantage can’t be modified in late-life, however, more salient late-life factors such as social support, sleep disturbance and activity levels are malleable in the later years. As the global population of older adults is expanding, an increasingly large number will be seeking mental health care. Further, we know that current

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treatments are only partly successful. For example, approximately 20-30% of years lived with disability from depression can be avoided using existing treatments and treatments for anxiety disorders do not prevent the full burden (Andrews et al., 2004). Prevention efforts to stop mental health problems before they start is a promising approach to lower overall disease burden.

This paper will present some encouraging findings from existing preventive interventions in pharmacotherapy, psychotherapy, and psychosocial efforts. Much of this work addresses depressive and anxiety disorders, with interrelated areas of health such as sleep also considered. We will conclude by providing suggestions for future directions of research and practice in geriatric mental health prevention. First, however, we want to review some essential prevention terminology. As opposed to treatment, prevention targets individuals before development of disorder. Gordon (1987) labeled preventive interventions as universal, selected, and indicated, depending on the risk level of the targeted population. Indicated interventions focus on individuals who already show signs or symptoms of a disorder, selected interventions target those at high risk, and universal programs are aimed at an entire population. The Institute of Medicine adopted Gordon's terminology and added a category of more general mental health promotion (National Research Council and Institute of Medicine, 2009, p. 65). We highlight some recent preventive interventions that fall into each of these categories, starting in the domain of pharmacological prevention.

Pharmacological Prevention

Positive effects of antidepressants (ADs) for the treatment of depression are well documented, even among the oldest-old (Trappler and Cohen, 1998). However, while the majority of older adults recover from depression, many will relapse though a better prognosis has been associated with current or prior AD use (Denihan et al., 2000). Thus prophylactic AD use has been trialed primarily as maintenance treatment/relapse prevention in older adults recently recovered from a major depressive disorder (MDD) episode. For example, Reynolds et al. (2006) examined adults aged 70 and older who had MDD and responded to combined psychotherapy and paroxetine treatment. Patients were randomized to four groups receiving paroxetine or a placebo combined with either interpersonal psychotherapy or clinical-management sessions for two years or until a new MDD episode. Individuals who received two years of paroxetine were less likely to develop a new episode of MDD. Adjusting for the psychotherapy effect, individuals receiving the placebo had a 2.4 times greater relative risk of recurrence than individuals on paroxetine.

Robinson and colleagues (2008) assigned three randomized groups of adults aged 50-90 who had suffered a stroke in the past 3 months to escitalopram, problem-solving therapy, or placebo in a 12 month trial. In that time period, 22.4% of individuals on placebo developed depression compared to only 8.5% of individuals taking escitalopram and 11.9% of individuals receiving PST. At six months following escitalopram discontinuation, however, the participants who had received escitalopram exhibited significantly higher levels of depressive symptoms than the PST or placebo group (Mikami et al., 2011). In other work, Fournier and colleagues (2010) found the benefit of an AD over a placebo rose with

increasing severity of depression. The AD had only a small effect for individuals with none to moderate symptoms, suggesting greater utility in treatment than prevention.

These results show that ADs may have some preventive benefit for relapse of depression in older adults, however results are mixed. In addition, there are ethical concerns regarding prescription of ADs or other medications to individuals without a diagnosed disorder. Medications such as ADs and benzodiazepines tend to be less effective for mild symptoms, are associated with a number of side-effects (e.g. fall risk, cognitive impairment), older adults already tend to be taking a large number of medications, and non-pharmacological treatment is preferred by many older adults (Fournier et al., 2010; Gum et al., 2006; Landi et al., 2005; Verdoux, Lagnaoui, Begaud, 2005). While pharmacotherapy may be called for in some high risk cases, or where it was helpful for individuals who had past depressive episodes, it should likely not be the initial choice for primary prevention efforts.

Psychological

Baby boomers are high service users and thus demand may grow for prevention that is non-pharmacological. Few researchers have considered psychotherapy as a preventive intervention compared to treatment, however several studies show promising results (see Lee et al., 2012 for a review). A few recent efforts predominantly focusing on cognitive behavioral therapy (CBT) and problem solving therapy (PST) are discussed.

Cognitive Behavioral Therapy (CBT)

Most psychotherapy studies use a cognitive behavioral framework which targets dysfunctional thoughts and levels of activity, aiming to restructure one's thoughts and ultimately change behavior. The most commonly used form is Lewinsohn's "Coping with Depression" (CWD) course which is a psychoeducational form of CBT (Lewinsohn et al., 1984). A therapist serves as an "instructor" for a group of participants, teaching useful skills to manage depressive feelings such as scheduling and completing pleasant activities, developing social skills, relaxation, and techniques for restructuring one's maladaptive thought processing. Konnert, Dobson and Stelmach (2009) trialed an adapted version of the CWD course specifically for prevention, "Coping with Stress", in nursing home residents (13 sessions over 7 weeks). The course was modified to provide relevant examples and pleasant events that would be appropriate for older adults. Participants were assisted, if needed, to write in their treatment manuals and to get to the sessions. Scores on the Geriatric Depression Scale declined significantly over time (baseline to 6 months post-treatment) and were significantly better in comparison with the control group. Over the six months of treatment and follow up, no participants in the Coping with Stress course developed MDD (out of n=20), while two participants in the control group did (out of n=23). However, the intervention group did not differ significantly from the control group on two other depression symptom scales (CES-D & DASMIE).

Problem Solving Therapy (PST)

PST is a behavioral approach which aims to reduce depression by targeting inaccurate appraisals of problems and teaching skills to solve these problems adaptively. Rovner and

Casten (2008) employed a PST selective intervention (6 hour long sessions across 8 weeks) that targeted individuals with macular degeneration. Given that macular degeneration would modify the behaviors an individual was capable of, PST presents a creative behavioral solution to addressing these visual challenges and potentially prevent depression. At 2 months the experimental group had half the incidence rate of depression compared to the control group (11.6% vs. 23.2%). The researchers did not find differences in incidence at 6 months; however, activities were better maintained in the experimental group. This intervention may be effective in older adults with other chronic diseases where both depression and disability are common. Taken together with findings from Robinson et al.'s (2008) PST and escitalopram comparison, results suggest that PST provided over only a few weeks may have long-term effects in preventing depression, particularly in individuals with a medical comorbidity.

Innovative and Multicomponent Psychotherapy Approaches

Internet Based—In a three group randomized control trial, Spek et al. (2008) compared group participants in the 10 week CWD course and an 8 session internet based CBT intervention with individuals in a wait list control. Participants were adults aged 50 and older with subthreshold symptoms of depression. While both interventions had a large improvement effect-size, the differences between the CWD course group and the wait-list control were negligible. While 62% of the individuals in the internet CBT intervention were below the threshold indicator for depression on the Beck Depression Inventory, only 45% of the CWD course and 38% of the wait-list participants were below threshold one year following initiation of treatment. This reflects the natural course of improvement over time as well as the potential efficacy and desirability of internet-based interventions.

Stepped care—Van't Veer-Tazelaar and colleagues (2009) provide an example of a stepped care program for older adults in primary care that reduced the odds of developing an anxiety or depressive disorder by more than one-half and showed long-term effects. Stepped care aims to make the best use of clinical and economical resources by only giving intervention as needed. Van't Veer-Tazelaar and colleagues' program consists of four, three month periods starting with watchful waiting as many individuals' symptoms spontaneously remit without treatment. If significant symptoms lasted after an initial 3 months, participants were randomized to either a usual care control group or CBT bibliotherapy intervention. A nurse first visited to provide information about anxiety and depression and basic advice on coping skills. In a second visit the Coping with Depression (and Anxiety) course was provided and the nurse made several follow up visits/calls to monitor progress. If participants were still symptomatic 3 months later they would progress to a 7 session PST. Finally, symptomatic participants 3 months later would be referred to their primary care physician for AD treatment. At the end of any period, if participants' symptom scores were below threshold they would enter or remain in a watchful waiting period. The 12-month incidence of anxiety and depressive disorders was 0.12 in the stepped-care group and 0.24 in the control group. Participants in this study were 75 years and older, suggesting that a stepped care intervention was tolerable for individuals in late-life and primary care was an effective setting for recruitment and intervention.

Sleep Problems Prevention—Sleep disturbance and mood are strongly associated, and as circadian rhythms and sleep patterns change with age, these associations are pivotal in older adults (Buysse, 2004). Targeting the treatment of late-life insomnia, Germain and colleagues (2006) conducted a Brief Behavioral Treatment of Insomnia (BBTI) intervention including one 45 minute session and a short booster session two weeks later. BBTI includes education on sleep regulation, what influences sleep, and behaviors that can inhibit or promote sleep. In particular, participants were asked to follow four instructions for the four week intervention: spend only the amount of time in bed one expects to sleep, awake at the same time each day, only go to bed when sleepy, and get out of bed if not sleeping. While only individuals with "unstable" or untreated psychiatric diagnoses were excluded from the study, the mean Hamilton Rating Scale for Depression and Anxiety scores at baseline were well below accepted cut-scores. Compared to a control group, participants receiving BBTI improved in waking after sleep onset, sleep latency, quality, and efficiency, and in symptoms of anxiety and depression. More research is needed to see whether sleep interventions have the ability to reduce incidence of mental health disorders or may be useful in multicomponent interventions.

Other Prevention Programs

Other prevention programs, such as psychosocial or exercise interventions, are less standardized than pharmacotherapy and psychotherapy interventions, yet have an opportunity to address specific risk factors in a way that may be more tolerable and less stigmatizing to older adults. Most psychosocial studies are targeting mental health *promotion* in samples of community dwelling older adults as opposed to indicated or selective prevention for a specific disorder. However, they do provide some promising efforts that may be replicated, modified, or incorporated in a multifaceted way in indicated or selected RCT trials. We consider some recent and promising examples (see Forsman, Schierenbec, & Wahlbeck, 2011 for further review).

Reminiscence

Pot and colleagues (2010) trialed an indicated preventive intervention of "life review". Participants ranged in age from 50 to 90 and had subsyndromal symptoms of depression. Participants were randomized to a control group that watched an educational video on aging successfully, or an intervention called "Looking for Meaning" that consisted of 12 two-hour sessions where participants did various life review activities (discussing life experiences, sensory recall, or other creative activities) on various topics such as houses the individual lived in or smells from one's past. Pot et al. reported a large effect size for the between group change in CES-D score between pre and post assessment ($\Delta d=0.58$) with the intervention group decreasing most in depressive symptoms. Both the intervention and control groups declined in anxiety so there wasn't a significant between group change effect. A meta-analysis found similar effects of reminiscence and life review programs in reducing depressive symptoms in individuals with mild to moderate symptomatology ($d = 0.37$) (Bohlmeijer, Smit, & Cuijpers, 2003).

Exercise

While physical exercise has long been associated with improvements in mood, few interventions have focused on prevention/promotion as opposed to MDD treatment. Baker et al. (2007), however, randomly assigned retirement community residents with no to mild depressive symptoms to a 10 week exercise program (approximately 1 hour sessions 3 days a week) of high-intensity resistance training, moderate-intensity aerobic training, and balance training or a wait-list control group. While depressive symptoms did not significantly decline for exercise participants, participants who had more depressive symptoms at baseline improved most. Rosenberg et al. (2010) examined a 12 week Nintendo Wii Sports "exergame" intervention in older adults with subsyndromal depression (three 35 minunte sessions a week; no control group). Participants' depressive symptoms significantly declined with the reduction maintained at 24 week follow-up and 37% of participants' symptom scores declined by 50% or more. Anxiety scores declined across the intervention, but not significantly.

Conclusion and Future Directions

The above studies provide an overview of the potential for prevention and also challenges and limitations of this work. Pharmacotherapy has shown efficacy in preventing recurrence of depression, yet ADs and benzodiazepines are associated with a number of negative side-effects for older adults. Psychotherapy has been shown to reduce the incidence of depressive and anxiety disorders; however therapy sessions are lengthy and may require older adults to travel to a therapist. Finally psychosocial prevention has shown utility in promoting mental health, however more indicated and selective studies are needed to show whether psychosocial prevention can reduce incidence of disorder in individuals at risk. The greatest challenge with prevention trials is that if individuals in the control group do not develop the clinical disorder at a certain rate, it is difficult to see the effect in the intervention group without a very large sample size. Thus indicated trials targeting specific risk and protective factors in older adults with beginning signs of disorder may be most effective. In addition to the need for more selective and indicated prevention trials in geriatric mental health, other new directions for innovation in research and practice may be proposed.

It is important to take into account the disabilities, mobility and cognitive capabilities, in addition to the resiliencies, wisdom, and strength of the older population in preventive designs. In line with the growth of patient-centered outcomes research, new initiatives that consider the specific preferences and needs of older adults relating to mental health care may be particularly beneficial to prevention work. Further, to increase participation it might be helpful to work through primary care physicians or social services that older adults with depressive or anxiety symptoms frequent and consider how programs can reach rural elderly or those without capacity to pay for mental health services.

Innovations in technology may help to reach older adults with mobility, transportation or economic difficulties. Internet based prevention programs have a number of benefits in that they take away appointment scheduling and the need to travel, they allow individuals to work at their own pace, they may be shared globally, are inexpensive, and are reusable (in contrast to a therapists' time which is gone after a session or a pill that is gone once

swallowed). Interventions powered through mobile phones, tablets or other applications such as Skype may be a particularly fertile area for growth (Munoz et al., 2010). However, as internet programs don't offer crisis assistance, the ethics of these interventions must be considered (Reynolds, 2009).

A best case scenario for prevention research would be the ability to target the etiology of mental disorder. The biological underpinnings of disorder are beginning to be understood. For example, the stress hormone cortisol has been associated with depression and melatonin levels are related to insomnia (Burke et al., 2005; Wade et al., 2007). With increasing knowledge, biomarkers may help better target individuals for prevention so that resources aren't used on individuals who while at risk, aren't likely to develop disorder. Ultimately, biomarkers may help programs be more individualized and efficient and might be measured in assessing intervention response. Many possibilities lie in this frontier.

In conclusion, the prevention of geriatric mental disorder is a field laden with challenges and yet ripe for growth and with the potential for great health and economic payoff. This brief overview of the domains of geriatric prevention can provide clinicians with strategies for helping older adults at risk for disorder and examples of successful interventions from which researchers can build new ideas and trials. Disorder can be stopped before it begins, and as our population ages prevention work promises to have increasing salience.

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