



OLDER AMERICANS
Substance Abuse & Mental Health
Technical Assistance Center

Evidence-Based Practices for Preventing Substance Abuse and Mental Health Problems in Older Adults

Excerpt: Prevention of Mental Health
Problems: Depression and Anxiety

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EXECUTIVE SUMMARY

The prevention of substance abuse and mental health problems within the aging population has been recognized as a national priority. The Substance Abuse and Mental Health Services Administration's *Older Americans Substance Abuse and Mental Health Technical Assistance Center* (TAC) is committed to serving as a leading resource for the prevention and early intervention of late-life substance use and mental health problems. Despite the substantial prevalence and adverse consequences of substance use and mental health problems in older persons and the considerable knowledge related to preventing these problems, evidence-based prevention and early intervention services are not widely available nor promoted for this at-risk population. Given financial restrictions facing many health care systems, guidance is needed to direct limited available resources toward the provision of programs that have proven effectiveness. To support this effort, the TAC has reviewed the best available evidence supporting programs that target the prevention and early intervention of substance abuse and mental health problems in older adults.

The purpose of this review is to highlight prevention and early intervention programs that have proven effectiveness. This report identifies the demographic imperative for addressing late-life substance use and mental health problems, describes the current terminology of prevention programs and practices, provides a comprehensive review of the published evidence base for the prevention and early intervention of geriatric substance abuse and mental health problems based on the empirical evidence, and describes dissemination and implementation issues that align with state needs and priorities.

Five specific areas are addressed. These include the prevention and early intervention of alcohol misuse, medication misuse, depression and anxiety, suicide, and co-occurring substance abuse and mental health problems among older adults. This review provides a comprehensive examination of prevention programs in these areas that have been published through September 2005.

Alcohol Misuse

- Brief interventions can reduce alcohol misuse and hazardous drinking among older adults. Specifically, structured brief interventions and brief advice in health care settings have shown to be effective at reducing alcohol consumption in this population.

- Little evidence is available regarding universal prevention programs targeted at the prevention or reduction of alcohol misuse among older adults. Some health education programs have demonstrated increased knowledge among older adults about hazardous alcohol use.
- Recently developed screening and assessment instruments show promise as useful tools to improve identification of older at-risk drinkers and enhance clinician interactions to prevent or reduce alcohol misuse.

Medication Misuse

- Computer-based health education tools designed for older adults have shown gains in knowledge and self-efficacy regarding potential drug interactions, as well as improvements in self-medication behaviors.
- Clinical trials on early interventions with older adults who are at increased risk for medication misuse have had mixed results. Nonetheless, interventions with patients prior to hospital discharge, interventions targeted at changing provider prescription patterns, and home-based medication reviews show some promise to prevent medication misuse.

Depression and Anxiety

- A moderate amount of evidence supports the effectiveness of problem solving therapy (PST) and exercise in preventing the onset or worsening of depression. In addition, targeted outreach is effective in engaging isolated and vulnerable older adults in mental health care.
- More research is needed to determine whether other potentially effective strategies are effective in preventing depression, including: life review, reminiscence therapy, educational classes for older adults and providers, and mind-body wellness.
- Minimal evidence supports prevention programs focused on late-life anxiety.

Suicide

- Supportive interventions that include screening for depression, psychoeducation, and group-based activities have been associated with reduced rates of completed suicide among older adults.
- Telephone-based supportive interventions have also been associated with a reduction in the rate of completed suicide.

- Protocol-driven treatment of depression delivered by a care manager has been associated with reduced suicidal ideation.

Co-occurring Disorders

- Concurrent treatment of substance abuse and depression may be effective in reducing alcohol use and improving depressive symptoms.
- The evaluation and treatment of co-occurring substance use and mental health problems among older adults is an under-studied area.

This report highlights the evidence base for the prevention and early intervention of substance use disorders and mental illness in older adults. Of note, the field of prevention is far less developed than our understanding of the diagnosis and treatment of substance abuse and mental disorders in late-life. In particular, comparatively few scientific efforts have focused on preventive measures, the early identification of and intervention with high-risk individuals, and the promotion of optimal health regarding substance abuse and mental health concerns in late adulthood. However, this summary of the current evidence base provides direction for both providers and consumers regarding substance abuse and mental health prevention and early intervention services. This information can be useful in planning and implementing effective programs and practices, while also underscoring future directions for research and evaluation.

PREVENTION OF MENTAL HEALTH PROBLEMS

One in five older adults has a significant mental disorder, including more than 16 percent with a primary psychiatric illness and 3 percent with dementia complicated by psychiatric symptoms.¹ Depression and anxiety disorders are among the most common mental health problems in older persons and affect approximately 3-7 percent and 11 percent of the general older adult population, respectively.² The prevalence of other mental health disorders such as schizophrenia and bipolar disorder is much lower (less than 1%), although these disorders impart significant functional impairments in older persons. As with substance abuse, the prevalence of these disorders is heightened among persons receiving health care in the primary care system, in outpatient mental health settings, and in nursing homes.^{3,4}

This review focuses on the universal, selective, and indicated prevention of the most common mental health problems in older adults. We specifically address the most prevalent conditions (mood and anxiety disorders) and suicide. Similar to the mental health *treatment* literature, most *prevention* programs target depressive symptoms and do not address late-life anxiety or other mental health conditions. Programs that target the reduction of depressive symptoms also heavily inform our reviews of suicide prevention. We specifically excluded the prevention of cognitive disorders, such as dementia, as this area includes a relatively large, rapidly growing, and complex research literature that is outside the scope of this review. The exclusion of dementia is based on the premise that the prevention and treatment of cognitive impairment disorders are most commonly addressed outside of the mental health care system and are, thus, less pertinent to state and local substance abuse and mental health care service providers and administrators.

Depression and Anxiety

Risk factors for late-life depression have been identified through a systematic review of the research literature and a longitudinal study. In a review of 20 studies, Cole and Dendukuri⁵ noted that bereavement, sleep disturbance, disability, prior depression and female gender were all significant predictors of depression. Risk factors for depression have also been identified through a survey of older persons living in the community. Using data collected from two questionnaires administered 5 years apart to 1,947 older adults, Strawbridge and colleagues⁶ noted that older adults who were more likely to be depressed included those with low and medium physical activity, physical disability or mobility impairment, one or more chronic conditions, fewer than three close friends or relatives, and those who were somewhat satisfied or not satisfied with friendships.⁶ Several of these risk factors may be mitigated

by preventive efforts, including programs that attend to persons that are currently suffering from depression or that have a history of recurrent depression, undertreated conditions that commonly precipitate depression, vascular disease, functional impairment, and nutritional deficiencies.⁷

Several search strategies were used to identify programs addressing the prevention and early intervention of late-life depression or anxiety. The PubMed, PsychInfo, CINAHL, Ageline, Social Services Abstracts, and ERIC databases were used to identify published literature using the search terms: depression, minor depression, sub-syndromal depression, anxiety, and prevention. Other search strategies were also employed, including searches conducted through Google and federal grant databases.

The following section describes the evidence supporting prevention and early intervention programs for late-life depression and anxiety. In overview, there are several substantive differences in the evidence base for prevention compared to early intervention for depression and anxiety in older adults. The research literature describing the prevention of depression is relatively small and is largely focused on health promotion and positive aging and includes programs such as exercise, life review, reminiscence therapy, educational classes, and mind-body wellness. Much of this literature is based on the reduction of known risk factors for depression. In contrast, much of the literature on early interventions for depression reflects research findings on the treatment of minor depression or sub-syndromal depression. Early intervention strategies include problem-solving therapy, interpersonal counseling, exercise, nurse case management, and caregiver training. Of note, Cole and Dendukuri⁸ recently conducted a systematic review of controlled trials of time-limited brief (less than 12 weeks) interventions to prevent depression. They identified several brief interventions that have the potential to prevent depression in older people (these trials are included within Table 2). Finally, there is little available information to guide the prevention of late-life anxiety.⁹ Table 1 and Table 2 provide an overview of prevention and early intervention programs for late-life mental illness. In addition, these studies are reviewed within the text.

Universal Prevention Programs

Exercise

Physical activity has been shown to be a protective factor against the development of depression.⁶ In addition, findings from at least two programs show that exercise can help prevent depression in older adults. Wallace and colleagues¹⁰ evaluated a multi-component intervention wherein participants received a 30- to 60-minute visit at a senior center with a registered nurse to review risk factors for disability, develop a targeted health promotion plan, and introduce a supervised exercise

program. This visit focused on current exercise habits, alcohol and tobacco use, dietary habits, and home safety issues. The nurse contacted subjects by telephone to review progress toward goals, motivate continued behavior change, and identify problems with compliance. The exercise program was conducted in groups of 10-15 older adults led by a trained exercise instructor. Each 60-minute exercise session occurred at the senior center and consisted of 10 minutes of warm up, 15-20 minutes of strength training, 20 minutes of walking/aerobic activity, and a flexibility and cool-down phase. As shown in Table 1, positive outcomes included improved health functioning and a reduction in depressive symptoms. A second study conducted by Penninx and colleagues¹¹ evaluated the effectiveness of exercise in preventing depression in older adults with osteoarthritis. They compared a 3-month facility-based aerobic or resistance exercise program to a control group receiving education on arthritis management. The aerobic exercise program consisted of an indoor walking program that was conducted under the supervision of an exercise leader and that was scheduled three times per week for 1 hour. Each session had 10 minutes of warm up and cool down including flexibility stretches and 40 minutes of walking at an intensity equivalent to 50-70 percent of the heart rate reserve. The resistance exercise program included three 1-hour sessions per week. Each session consisted of a 10-minute warm up and cool down and 40 minutes of repetitions of various upper and lower body exercises using dumbbells and cuff weights, with weights increased in a stepwise fashion. The aerobic and resistance exercise programs were each followed by a 14-month home exercise program with support and supervision from an exercise leader. Evaluation of these programs found that aerobic exercise, but not resistance exercise, significantly reduced depressive symptoms. Together, these findings complement research showing that exercise is an effective treatment for late-life depression¹² and identify benefits of exercise in preventing depressive symptomatology in non-depressed older adults.

Educational Classes

Several educational programs were evaluated to determine their effectiveness in preventing depression, including two that were directly targeted at increasing knowledge of specific medical conditions. A 10-week arthritis education class was associated with significant reductions in depressive symptoms compared to a control group at 1- and 2-year followup evaluations.¹³ Similarly, a 6-week diabetes education class combined with a support group was associated with lower incidence of depression at 2-year followup compared to a control group.¹⁴ Finally, classroom and home-based multi-component mind-body wellness courses, including relaxation training, cognitive restructuring, problem solving, communication, behavioral treatment for insomnia, nutrition, and exercise, and instruction on mind-body relationships, were associated with a reduction in depression and anxiety symptoms compared to a control group.⁹

Life Review

Zauszniewski and colleagues¹⁵ examined the effectiveness of a focused reflection reminiscence program in reducing negative emotions in older adults living in retirement communities. The program, entitled “Reflections for Seniors,” included members of a retirement community who met for 2 hours per week over a 6-week period. A similar life review program evaluated by Haight and colleagues¹⁶ included nursing home residents who met for 1 hour per week over a 6-week period. Both studies found small effects on the reduction of depressive symptoms in older adults.

Screening and Assessment

Early detection of depression and anxiety disorders among older adults may be a useful strategy for identifying older adults who may benefit from indicated prevention efforts (early intervention). Screening for depression is recommended by the U.S. Preventive Services Task Force in health care settings where providers are prepared to confirm an accurate diagnosis and provide effective treatment and followup.¹⁷ However, evidence suggests that screening alone may be associated with a lowering of depression levels.¹⁸

A brief review of the literature suggests that several instruments have been used to screen for depression (Geriatric Depression Scale: GDS;^{19,20} Short Zung Scale Interview-Assisted Depression Scale;²¹ Patient Health Questionnaire-9: PHQ-9).^{22,23} Of note, the PHQ-9 has been promoted as a practical depression screening instrument among primary care settings.²⁴ In addition, the Hopkins Symptom Checklist-25 is an effective method for identifying different categories of depressive symptoms, including sub-threshold depression, minor depression, and major depression.²⁵ Preliminary research suggests that the Center for Epidemiological Studies – Depression (CES-D) scale can be used to detect sub-threshold anxiety in older adults.²⁶ In addition, the Short Anxiety Screening Test (SAST)²¹ also has validity in detecting anxiety disorders in older adults.

Indicated and Selective Prevention Strategies (Early Intervention)

Estimates suggest that sub-threshold or minor depression is present in 8-16 percent of older adults residing in the community, 15-20 percent of those receiving primary care services, 25-33 percent of older adults in an acute care hospital, and up to 50 percent of older adults in long-term care facilities.^{3,4} Moreover, the prevalence of anxiety symptoms among older adults may be as high as 20 percent and diagnosable anxiety disorders affect nearly 6 percent of older adults.²⁷ While this review identified several

programs for the indicated and selective prevention of geriatric depression, little information is available on the prevention and early intervention of late-life anxiety.

Targeted Outreach for Vulnerable Older Adults

The Gatekeeper program was developed to train and encourage non-traditional referral sources to identify and refer older adults living in the community who are at risk for serious substance abuse and mental health problems.²⁸⁻³⁰ Gatekeepers are the employees of local businesses and community organizations who have contact with older adults (e.g., letter carriers, police officers, bank tellers, landlords, meter readers, and many others). The “gatekeeper” model has been compared with traditional referral sources (e.g., medical providers, family members, informal caregivers, or other concerned persons) to determine its efficacy in identifying vulnerable older adults in need of services.^{28,29,31,32} Studies of the Gatekeeper program have found differences in individual characteristics between those referred by gatekeepers and those referred by medical or other traditional sources. Older adults (age 60+) referred by gatekeepers were significantly more likely to live alone, were more often widowed or divorced, and were significantly more likely to be affected by economic and social isolation. These findings suggest that the gatekeeper model may uniquely provide outreach to individuals who are less likely to access services through conventional referral approaches. At the time of referral, individuals referred by gatekeepers were also significantly less likely to use needed services than individuals referred through traditional sources, had similar service needs, and thus had a larger gap between services needed and services received.^{28,31,32} At 1-year followup, older persons referred from gatekeepers had no difference in service utilization or out-of-home placements compared to individuals referred by traditional sources.

A study conducted in urban senior congregate housing settings also used gatekeepers to identify older adults at high-risk of psychiatric problems.^{33,34} The Psychogeriatric Assessment and Treatment in City Housing (PATCH) model incorporates components of the Gatekeeper program and assertive community treatment. The PATCH psychiatric nurse met with the building administrator, an education program was provided to housing personnel to enhance recognition of high-risk residents and to clarify procedures for making referrals of high-risk residents, and weekly nurse visits included in-home psychiatric evaluation and case management services for residents ages 60 and older. This study of the PATCH model found that outreach services were associated with a decrease in overall psychiatric symptom severity for individuals with a variety of psychiatric disorders.³⁵

Psychotherapeutic Interventions

Disability associated with chronic medical disorders in late life is often a precursor to depressive symptoms. As such, interpersonal and problem-solving therapies hold promise for preventing depression among individuals with specific late-life medical illnesses³⁶ (also see section on Ongoing Selective Prevention Programs Under Evaluation). In addition, these psychotherapeutic approaches have promise in preventing the progression from minor or sub-syndromal depression into major depression.

Problem-Solving Therapy

Two studies have evaluated the effectiveness of problem-solving therapy (PST) for older adults with dysthymia or minor depression.^{37,38} The PEARLS program, evaluated by Ciechanowski and colleagues,³⁹ was found to be associated with improved depressive symptoms and functional and emotional well-being. In addition, compared to a control group, those receiving PST were more likely to achieve remission of depressive symptoms (36% vs. 12%). In contrast, Williams and colleagues³⁸ evaluated PST compared to an antidepressant medication (paroxetine) or a placebo. They found that neither treatment was associated with a difference in rates of remission compared to placebo. However, for those patients with minor depression, both paroxetine and PST improved mental health functioning in patients with initial low functioning. Only paroxetine was associated with improvement for persons with dysthymia.

Interpersonal Therapy

One study found interpersonal therapy (IPT) to be effective at preventing an increase in depressive symptoms.³⁹ Mossey and colleagues compared IPT to usual care. IPT was associated with improved self-rated health and after 6 months, three-fifths of the intervention group, compared to approximately one-third of the control group, had experienced a reduction in depressive symptoms.

Exercise

In contrast to the universal prevention study evaluated by Penninx and colleagues that found that resistance training was no more effective than placebo in preventing depression,⁴⁰ a study of older persons with pre-existing depressive symptoms (59% with minor depression or dysthymia) found that

resistance training was more effective than health education alone in preventing the worsening of depression.⁴¹ Remission was achieved by six of seven (86%) participants in the resistance exercise group, compared to 4 of 10 (40%) participants in the health education control group.⁴¹

Interventions for Care Providers

Two studies evaluate whether modifications to the provision of care can affect depressive symptoms. Cuijpers and colleagues⁴² evaluated a multifaceted education and support program administered in a residential care setting, compared to usual care. The intervention included training for caregivers and other employees of the residential home, informational meetings for residents and their relatives, support groups, and discussion and feedback sessions for care providers. The target population included older persons who were incapable of living independently due to physical, psychiatric, or psychosocial constraints; yet did not require extensive nursing home care. Results indicate that an intervention providing education, support and feedback to residential care providers can reduce depressive symptoms and maintain health-related quality of life for older persons.⁴² Waterreus⁴³ and Blanchard⁴⁴ evaluated the effectiveness of care delivered through a nurse case management system in which the care plan was developed through coordination of a multidisciplinary psychogeriatric team. Compared to a usual care control group, the intervention group exhibited greater reduction in depression severity, but was not associated with fewer cases of depression.

Interventions for Family Caregivers

Family caregivers, such as spouses or children caring for loved ones with dementia are also at risk for developing depressive disorders. In the early 1990s, Mittelman and colleagues developed and tested an intervention consisting of scheduled individual and family counseling sessions, unlimited consultation on request, and continuous support group participation for family caregivers of persons with dementia.⁴⁵ This intervention was found to delay nursing home placement by an average of 329 days, prompting researchers to develop, refine, and test similar interventions to support the capacity of natural caregivers to care for their loved one in the home environment. In addition to improving outcomes for the individual with Alzheimer's disease, this intervention also has been found to reduce stress and psychological symptoms for caregivers. The counseling and support provided to families is associated with greater satisfaction with assistance received from others, as well as decreased caregiver depression.⁴⁶ In addition, PST has been successfully used to enhance the ability of caregivers to cope with stress and to decrease the incidence of depression and other adverse outcomes. For example, Teri and colleagues

studied the effectiveness of PST as an intervention for reducing depression among individuals with dementia and their caregivers. Caregivers who participated in PST decreased their levels of depression and burden over a 6-month period.⁴⁷ Of note, a recent systematic review evaluated major outcomes in family caregiving interventions for dementia, as published in 43 studies since 1996. Findings indicate that the major impact on caregivers includes decreased incidence and severity of depression, moderate decreases in reported anger, moderate improvement in stress management, positive changes in clinical health indicators such as blood pressure and stress, and small improvements in caregiver burden.⁴⁸

Ongoing Selective Prevention Programs Under Evaluation

A search of ongoing research grants identified two projects that are specifically designed to prevent depression in older adults. These studies examine approaches to preventing depression in older adults who have increased risk due to debilitating medical conditions. In the first, Rovner and colleagues⁴⁹ are conducting a National Institute of Mental Health (NIMH) supported clinical trial, entitled “Preventing Depression in Macular Degeneration,” to evaluate the efficacy of PST among non-depressed older adults with bilateral age-related macular degeneration. Macular degeneration is a progressive eye disease that results in blindness and is associated with high rates of physical disability; up to one-third of older adults with bilateral vision loss develop depression.⁵⁰ In this study, older adults who have developed macular degeneration are randomly assigned to either PST or a usual care control condition. The primary outcome measure is a DSM-IV diagnosis of depression. Patients are evaluated at baseline, month 2 (immediately post-intervention), month 6 (for the primary efficacy analysis), and month 12 (to evaluate sustained effects). The study will also assess the impact of PST on levels of disability and vision-related quality of life. Approximately 230 participants are expected to enroll in this trial, which should reach completion in 2005. Preliminary results are not yet available.⁴⁹ The second ongoing study designed to prevent depression targets older persons who are at-risk for depression due to a previous stroke. In this study, Robinson and colleagues⁵¹ are evaluating the relative effectiveness of antidepressant medications and PST in preventing depression among older persons who have suffered a stroke. This randomized, double-blind, placebo-controlled trial, entitled “Prevention of Post-Stroke Depression - Treatment Strategy,” will treat non-depressed stroke patients with antidepressants or PST to determine the most effective treatments for preventing depression. Participants in this study will be randomly assigned to receive PST, an antidepressant medication (escitalopram), or placebo for 12 months. Participants who display depressive symptoms for 2 weeks or more will be removed from the study. After 12 months, treatment will be discontinued and participants will be monitored for an additional 6 months. Approximately 200 participants are expected to enroll in this study, which began in 2002.⁵¹

Conclusions

This review highlights the scientific evidence for the prevention and early intervention of depression and anxiety in older adults. As shown, several programs have identified positive effects in preventing depression or reducing depression symptoms. The best evidence exists for the effectiveness of exercise and psychotherapeutic interventions, such as problem-solving therapy and interpersonal therapy. In addition, there is evidence to suggest that targeted outreach to older adults is effective in engaging isolated and vulnerable older persons in treatment for mental health and substance abuse problems. Other potentially effective strategies include life review, reminiscence therapy, educational classes, mind-body wellness, and provider education. Many of these approaches require further evaluation prior to establishing their effectiveness among older adults. Our review also revealed that there is minimal evidence for programs that target the prevention of anxiety among older adults. As one in five older adults experiences symptoms of anxiety,²⁷ programs are needed in this area.

It is important to acknowledge that several programs developed to prevent depression have not demonstrated effectiveness. For instance, among the brief interventions for older adults with minor depression reviewed by Cole and Dendukuri,⁸ several trials showed no effect in the prevention of depression. These studies were primarily focused on bereavement support groups or life review. The lack of effect on the prevention of depression was also noted in a social support network intervention for seniors.^{52,53} Finally, it is likely that many ineffective programs are never published or disseminated as they have not demonstrated positive effects on the prevention or reduction of symptoms of depression or anxiety.

It is also important to note that several of the programs evaluated in this review have shown positive effects on reducing depressive symptoms, however these effects have often been small and the design of some of the studies brings into question the validity of their findings (i.e., small sample sizes, inclusion and exclusion criteria, evaluation instruments). However, despite these limitations, it appears that some programs have merit in preventing depression at a universal, selective, and indicated level. As indicated by the studies in progress, there is a great deal to be learned about effective prevention efforts. Bird and Parslow⁷ suggest that programs designed to increase understanding of late-life depression for providers and for older adults may hold promise. For example, physician education could include information on the prevalence and costs of depression, warning signs, and available treatments. Older adults could be educated to improve their ability to recognize the symptoms of depression, to reduce stigma, and to access effective mental health treatments.⁷ However, to our knowledge, the effectiveness of such programs has not been rigorously evaluated among older adults. Finally, system-wide quality improvement efforts may offer benefits in preventing late-life mental illness. A treatment guideline was

recently released that discusses appropriate care of older persons who are moving to a continuing care facility or who are awaiting hospital discharge. This treatment guideline focuses on promoting nurses awareness of depression in older people, promoting positive mental health and well-being, assessment and care-planning, and education and training. Specific recommendations include: (a) nursing staff attention to physical and mental health needs, (b) easing the transition to assisted living and increase independence and control, (c) minimizing the perceived losses that the person may experience in moving into the care home, (d) care planning focusing on the individuals strengths, coping patterns, and daily activities, (e) enabling access to advocacy services, (f) providing psychosocial support, (g) maintaining community linkages, and (h) engagement in meaningful activities.^{54,55} Despite the promise of these approaches, many remain to be tested.

Finally, it is important to remember that late-life depression is often chronic or characterized by a relapsing course. Although this review focuses on the universal prevention of late-life depression and selective and indicated prevention of the exacerbation of minor depression into major depression, an important area of research addresses the prevention of further disability among older adults who have developed depression. Prevention strategies should focus attention on preventing relapse, recurrence, and residual symptoms among older adults with current or remitted major depression.³⁶

Table 1. Universal prevention of late-life depression or anxiety

Reference	Study Design	Model/Conditions	Age	Sample	Followup	Outcome Measures and Results	Limitations/Comments
Haight, et al., 1988 ⁵⁶	RCT	Life Review (LR); Friendly Visit (FV); No treatment control (NT) LR and FV met for 1 hour/week for 6 weeks.	50+ Mean age ranged from 73 to 79 years.	Homebound elderly subjects randomly selected from Meals-On-Wheels recipients and persons receiving home health services. LR: n=16 FV: n=16 NT: n=19	8-week program. 51 of 60 randomized completed the study (85%).	No change in depression. Life satisfaction and psychological well-being were improved in the LR group.	Small sample size. Minimal depressive symptoms in any group at baseline.
Gilden, et al., 1992 ¹⁴	Pre-post	DEC+S: 6-week diabetes educ. class + support group followed by 18 months of support group; DEC: 6-week diabetes educ. class followed by 18 months of support group; Control	Range: 57-82 DEP+S: 69±1 DEP: 69±1 Control: 67±3	Male attendees at a Veteran's diabetes clinic. Groups matched for age and diabetes duration. DEC+S: n=13 DEC: n=11 Control: n=8	6-week program, 24-month followup. 100% followup.	Incidence of depression (based on Zung Depression Scale >50) DEC+S: 17% DEC: 45% Control: 75%	Self-rated depression outcomes. Did not adjust for depression or exclude depressed persons at baseline. Baseline rates of depression are not noted.
Emery, et al., 1998 ⁵⁷	RCT	Exercise, education, and stress mgmt (EXESM); Education and stress mgmt (ESM); Waitlist (WL)	50+ EXESM: 65.4±6.4 ESM: 67.4±5.9 WL: 66.6±6.5	Patients with stable COPD for 6+ months. 53% female. EXESM: n=29 ESM: n=25 WL: n=25	10-week program. 92% completion rate. (Drop-outs: 4 in EXESM due to medical illness; 2 in ESM due to transportation issues.) Among 25 persons completing EXESM, they attended a mean of 29.7 sessions.	EXESM greater reduction in depression than ESM. Significant time and time by group effect. EXESM and WL decreased depression, but not ESM. Greater reduction in anxiety for EXESM than for ESM or WL.	Small sample size. WL also showed improved depression. Short duration makes it difficult to determine the duration of the effect.
Haight, 1998 ¹⁶	RCT	Life review for 1 hour/week	Range: 60-104 Mean: 79.6	Nursing home residents Interv: n=60 Control: n=60	6-week program with 12-month followup. 53% completion rate.	Significant difference between the intervention and control group at 12 months in depression, hopelessness, and psychological well-being. Only depression improved at 8-week assessment.	Self-rated depression outcomes. No difference in suicide ideation, life satisfaction, or self-esteem.

Table 1. Universal prevention of late-life depression or anxiety (continued)

Reference	Study Design	Model/Conditions	Age	Sample	Followup	Outcome Measures and Results	Limitations/Comments
Wallace, et al., 1998 ¹⁰	RCT	Disability Prevention Program (including exercise, nutrition, home safety)	65+ Interv: 71.1±4.3 Control: 72.9±4.8	Senior center attendees Interv: n=53 Control: n=47	6-month program. 10% dropout rate. Data collected at baseline, 2 months, and 6 months.	Outcome measures (SF-36 subscales and CES-D scores) improved in the intervention group and declined in the control group. Most differences were found at 2 months, with smaller incremental improvements at 6 months.	Improvement in depression only noted as mean CES-D scores. Proportions were not presented. Feasibility improved by use of low-cost community sites that offer social activation and other resources.
Rybarczyk, et al., 1999 ⁹	RCT	Multicomponent mind-body wellness course. Classroom, Home course, and Wait-list Control conditions	50+ Range: 50-87 Mean Age Class: 67.6; Home: 61.5; Wait-list: 64.7	Members of an urban staff model HMO with 6+ primary care visits in the past year and referred by the primary physician. 82% female. Classroom: n=54 Home: n=61 Control: n=63	6-week program. Pre- and post-treatment measures addressed. 15% of participants dropped out.	Classroom and home course resulted in decreased pain, sleep difficulties, and depression and anxiety symptoms, compared to control group.	Only 270 of 527 patients referred to the study agreed to participate and only 210 and 178 completed pre- and post-questionnaires, respectively. Length of followup difficult to interpret. No intent-to-treat analysis. Home-based course has lower costs, greater accessibility, and potential for greater dissemination.
Burns, et al., 2000 ³⁸	RCT	Geriatric Evaluation and Management (GEM) and Usual Care (UC). GEM included interdisciplinary primary care team with joint comprehensive assessment and continuing long-term care.	Age 65+ Range: 66-95 GEM: 71.7±6.3 UC: 70.8±3.7	Medically ill patients admitted to medical, surgical, and neurological services at a VA clinic. Randomized at discharge. 3% female. GEM: n=49 UC: n=49	2-year evaluation of GEM program. 128 people entered study. 30 died before 2-year followup. Analyses on 98 remaining patients.	Both groups had improved depression, but significantly greater improvement in GEM group. GEM also had more improvement than UC in general well-being, life satisfaction, global social activity, and had fewer IADL impairments. In addition, UC used 40% more clinic visits than GEM.	Mostly male sample. Generalizability limited by VA sample. Most lived within 60 miles of a large metropolitan center. The level of depression was low at study randomization (mean CESD of 11).
Phillips, 2000 ¹³	RCT	1.5 hr/week arthritis education classes.	Range: 67-75 Mean: 69.3	Older African Americans with arthritis Interv: n=101 Control: n=101	10-week program with 12- and 24-month followup. 98% completion rate.	Significant difference at 12 and 24 months based on CESD.	Did not adjust for depression or exclude depressed persons at baseline. Multidisciplinary team with each member responsible for two lectures. Done in a community center.

Table 1. Universal prevention of late-life depression or anxiety (continued)

Reference	Study Design	Model/Conditions	Age	Sample	Followup	Outcome Measures and Results	Limitations/Comments
Penninx, et al., 2002 ⁴⁰	RCT. Subanalysis of FAST: Fitness, Arthritis, and Seniors Trial	Aerobic exercise; Resistance exercise; Education control	60+ Mean: 68.8±5.6	Older adults with knee osteoarthritis. 70% female. High depressive symptoms (n=98); Low depressive symptoms (n=340) AE: n=149; RE: n=146 Educ: n=144	3, 9, and 18 months. At 18 months, 20% of aerobic group and 17% of resistance group dropped out. No difference in compliance or drop-out between high and low depressive groups.	Aerobic exercise, but not resistance exercise, significantly decreased depressive symptoms compared to controls. Better results for persons who are most compliant	Unknown generalizability to all older adults. Unable to control for social support. No diagnostic evaluation of depression.
Zausniewski, et al., 2004 ¹⁵	Quasi-experimental	Reminiscence therapy through 6 weekly 2-hour group sessions. "Reflections for Seniors"	65+ Range: 67-98 Mean: 84	43 members of retirement communities. 79% female.	6-week program; followup 12 weeks post-intervention. 21% dropped out.	Depressive symptoms reduced from baseline to 6 weeks post-intervention, based on the Emotional Symptom Checklist (ESC)	Small sample size. No comparison condition. The ESC is not a commonly used instrument for measuring depression. No change in anxiety or agitation.

Table 2. Early intervention of late-life depression or anxiety

Reference	Study Design	Model/Conditions	Age	Sample	Followup	Outcome Measures and Results	Limitations/Comments
Waterreus, 1994 ⁴³ Blanchard, 1995 ⁴⁴	RCT	Nurse case management implementation of a care plan created by a hospital-based psychogeriatric team	Mean: 76±6.8	Older adults living at home. 85% female. Diagnoses included 58% with minor depression; 23% with major depression, and 6% with dementia. Interv: n=47 Control: n=49	3, 6, and 14.5 months. After 3 months, 8.5% of intervention group had dropped out and 20.4% of the control group had dropped out. At 14.5 months, 25.5% of intervention and 40.8% of control group had dropped out.	Intervention group had greater reduction on short-CARE ⁶ depression scores, but no difference in case vs. non-case. With followup of both groups receiving care mgmt protocol by general physician, depression differences only remained in the subgroup with long-term depression	Small sample, low power, variable followup length, low implementation of social and antidepressant treatment, most analyses showed no difference.
Mossey, et al., 1996 ³⁷	RCT	Interpersonal counseling (IPT) vs. usual care (UC)	60+ Range: 60-91 Mean: 71±7.7	Patients admitted to medicine or surgery at three academic hospitals. 78% female. Patients had a GDS greater than 10 but didn't meet criteria for major depression/dysthymia. IPT: n=35 UC: n=41	6-month followup. 20% of the IPT group and 9% of the UC group did not have 3- or 6-month followup data.	61% of the IPT group and 35% of the UC group had a GDS < 11 at 6-month followup. IPT group also had improved self-rated health, but not physical or social functioning.	UC included variable contact with a primary care physician and low use of or adherence to antidepressant medication.
Singh, et al., 1997 ⁴¹	RCT	Progressive resistance training of large muscles 3 days/week versus "education" control	60+ Interv: 70±1.5 Control: 72±2.0	Community volunteers with major (n=13) or minor depression (n=17) or dysthymia (n=2). 63% female. Resistance: n=17 Control: n=15	10-week followup. No participants dropped out. Median compliance with sessions was 93% in the intervention group and 95% in the control group.	Remission achieved by 86% of intervention group and 40% of control group with minor depression. Remission achieved by 59% and 26% in the full sample. Strength and SF-36 scales of bodily pain, vitality, social functioning, and role emotional were all significantly improved by exercise.	Small sample size. Heterogeneous group of diagnoses. Likely subject to selection bias as only 1% of persons contacted by a recruitment letter were eligible and joined the study.
Florio & Raschko, 1998 Raschko, 1997 Florio, et al., 1996 ^{29,31,32}	Comparison Group	Gatekeeper (GK) vs. medical referral (MD) vs. referral by others	60+ GK: 74.0±10.4 MD: 76.8±12.5 Other: 76.6±12.5	777 older adults with emotional disturbances (63%) or cognitive impairment (60%) living in home or community settings. 68% female GK: n=315 MD: n=217 Other: n=245	No followup period employed in the study.	GK made 40.5% of referrals to elder services. GK referrals had greater economic and social isolation, less physical and ADL impairment, and fewer had a family physician or social support. GK referrals were younger, female, more likely to live alone, and fewer were married. GK referrals had greater unmet need for services.	No symptom outcomes reported. Prevention of poor health outcomes not reported.

Table 2. Early intervention of late-life depression or anxiety (continued)

Reference	Study Design	Model/Conditions	Age	Sample	Followup	Outcome Measures and Results	Limitations/Comments
Florio, et al., 1998 ²⁹	Control pre-post	Gatekeeper (GK) vs. referral by medical or other sources (MD/Other)	60+ GK: 78.2±11.2 MD/Other: 79.5±10.0	88 older adults with dementia (53%), depression (16%), or bipolar disorder (5%) living in home or community settings. 68% female. GK: n=40 MD/Other: n=48	1 year followup on 100% of participants.	Older adults referred by GK, MD, and Other sources had similar service utilization and out-of-home placements. Significantly more GK referrals lived alone (70% vs. 35%) and fewer were married (20% vs. 49%).	Clinician assessments. No adjustment for severity, or baseline differences. Model had been in place for many years. Prevention of poor health outcomes not reported.
Rabins, 2000 ³³	RCT	Multidis-cliplinary development of care protocol. Nurse-based outreach – (PATCH). Compared to usual care control group.	60+ PATCH: 75.0±8.4 Control: 75.8±8.5	298 older adults in senior low-income public housing. 85% female in the PATCH group, compared to 70% female in the Control group. PATCH: n=131 Control: n=167	26-month study. Followup data was available on 50% of the PATCH group and on 58% of the control group.	Intervention group had more improvement in psychiatric (BPRS) and depressive symptoms (MADRS). No difference in undesirable moves.	No single standardized treatment. Randomization after identification of mental illness, thus weighting to original sample size. Dropout: 33% death or moved; 13% refusal. Prevention of mental health outcomes not reported.
Williams, et al., 2000 ³⁸	RCT	Paroxetine vs problem solving treatment (PST) vs placebo (PBO)	Parox: 71±6.8 PST: 71±7.0 PBO: 71±7.2	Primary care patients with minor depression or dysthymia. 41% female. Paroxetine: n=137 PST: n=138 PBO: n=140	11-week treatment. 25% dropped out.	Proportion of patients in remission with either paroxetine or PST did not differ from PBO. For patients with dysthymia, paroxetine improved mental health functioning compared to PBO but PST was no better than PBO. For minor depression, both paroxetine and PST improved mental health functioning in patients with low baseline functioning.	Response to PST was highly variable across study sites.

Table 2. Early intervention of late-life depression or anxiety (continued)

Cuijpers, 2001 ⁴²	Quasi-experimental	Training for caregivers and other employees of residential home, info. meeting for residents and relatives, group interventions offered	Interv: Age 71-80: 20.2% Age 81-90: 62.9% Age 90+: 13.6% Control: Age 71-80: 24.2% Age 81-90: 52.1% Age 90+: 19.9%	Residential care facility. 78.5% female. All residents included, but targeted on depressive symptoms. Interv: n=213 Control: n=211	12 months. 40.6% of participants dropped out within 1 year of the program.	Intervention group had greater improvement in depression (GDS ¹) and Health-Related Quality of Life (SF-20 ²).	Not randomized, high dropout, unknown which participants received group therapy component. Change in GDS is not clinically significant.
Ciechanowski, 2004 ³⁹	RCT. PEARLS Model	PST delivered by social workers with psychiatrist supervision & coordination with PCP	60+ Interv: 72.6±8.4 Control: 73.5±8.5	Older adults in senior public housing. 79% female. Diagnoses included dysthymia (49%) and minor depression (51%). Interv: n=72 Control: n=66	12 months. 7% of the intervention group and 9% of the control group dropped out.	Intervention group had more improvement in depressive symptoms and functional & emotional well-being. No difference in service use or social and physical well-being. Remission was achieved by 36% of the intervention group and 12% of the control group.	Intervention group had a greater proportion of dysthymia than control group. The authors believe it to be feasible to add a depression management service to usual case management practices.

RESEARCH NEEDS AND FUTURE DIRECTIONS

Attention to the prevention and appropriate treatment of substance abuse and mental health problems was identified as a major priority for older adults by the President's New Freedom Commission on Mental Health.⁵⁹ As identified in this review, there is a need for organizing, disseminating, and understanding evidence-based prevention and early intervention programs for late-life substance abuse and mental illness. While progress has been made in understanding the effectiveness of these programs and practices for older adults, there are challenges to matching these models to different service settings and different subgroups of older adults.

The growth in the aging population will have a significant impact on the substance abuse and mental health service delivery systems.^{1,60,61} In anticipation of this growing problem, it is essential that substance abuse and mental health services meet the specific needs of older adults. For instance, cohorts of the young-old (e.g., baby boomers) and the old-old have different patterns of service utilization and different perceptions of stigma associated with receiving care for substance use or mental health disorders. Moreover, the prevalence of substance abuse, mental health disorders, and suicidal ideation vary across ethnic groups.⁶²⁻⁶⁸ Mental health services are infrequently utilized by older minority populations⁶⁹ and lower utilization rates may be associated with limited access, stigma, distrust of mental health providers, and limited availability of culturally-competent services.⁷⁰⁻⁷¹ The lack of information on specific ethnic differences and culturally-appropriate service provision represents a limitation of the current evidence base. A greater understanding of cultural and ethnic differences is needed to enhance the ability to provide appropriate prevention and early intervention to older minorities with substance use and mental health disorders. For instance, social marketing associated with universal prevention interventions should be specifically tailored to cultural and language differences of ethnic groups. In addition, cultural competence should be enhanced across the full spectrum of prevention interventions.

This report provides a comprehensive review of the evidence for prevention and early intervention of alcohol abuse, medication misuse, depression and anxiety, suicide, and co-occurring disorders in older adults. As indicated by our findings, the development of preventive interventions associated with substance abuse surpasses that associated with mental health problems. However, the development and rigorous evaluation of programs that target both of these areas are sorely needed. In addition, there is a need to identify methods to appropriately translate information from clinical trials and research settings into the health care arenas where older adults most frequently receive care, and into social services settings where they receive other needed services. Likewise, population-based programs that target broad audiences of older adults may also offer hope for the universal prevention of substance use and mental health problems. In summary, substance use and mental health problems pose significant

risks for the functioning and well-being of older adults. Although several prevention and early intervention programs have been developed, there is a considerable need for dissemination and implementation of effective programs, as well as for further research aimed at the development and testing of novel programs.

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