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SUBSTANCE ABUSE AMONG AGING ADULTS: A LITERATURE REVIEW

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SUBSTANCE ABUSE AMONG AGING ADULTS: A LITERATURE REVIEW

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FOREWORD

The Center for Substance Abuse Treatment (CSAT) Office of Evaluation, Scientific Analysis and Synthesis (OESAS) established the original National Evaluation Data Services (NEDS) contract (Contract No. 270-97-7016) in 1997 to support the CSAT mission by increasing evidence-based knowledge of the effectiveness of substance abuse treatment and promoting access to treatment evaluation and analysis data and findings. NEDS furnished that support by supplying data management, scientific analyses, and technical support services.

In 2000, through a new contract (Contract No. 270-00-7078) OESAS both continued and expanded the scope of NEDS in three major areas: treatment data infrastructure, secondary analysis of treatment data including Government Performance and Results Act support, and web-based treatment data tools for states. NEDS is designed to give the Center the capability to strategically target, acquire, and access existing data from CSAT and other data sources, to generate new treatment information over time through analyses of the available data, and to provide access to this new treatment information to diverse audiences through multiple product lines and avenues. All of these activities are aided throughout by the active participation of a panel of preeminent experts representing diverse constituencies from the field of substance abuse treatment.

This literature review synthesizes the findings of studies published in the past 10 years on substance abuse among aging adults. As the proportion of Americans age 55 and older increases over the coming years, the field of substance abuse treatment will need to adjust to meet the unique needs of this growing population. This document is meant to provide treatment services providers, policymakers, and researchers/evaluators with an overview of current knowledge on substance abuse among aging adults. Major issues in the identification and treatment of substance abuse among aging adults and findings on treatment approaches and effectiveness are described, and the implications of this knowledge for substance abuse treatment practice, policy and future research/evaluation are discussed. This literature review is a companion document to *Substance Abuse Among Aging Adults: An Annotated Bibliography*, which catalogs the literature and provides a roadmap to data sources on substance abuse among aging adults.

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ABSTRACT

This literature review summarizes the major issues and empirical findings reported in the literature over the past 10 years (1992 to 2002) on substance abuse among aging adults and presents implications from the literature for treatment practice, policy, and future research/evaluation. Abuse of alcohol and other substances is a major health problem among Americans age 55 and older, and with the aging of the baby boom generation, the demands on the treatment system are expected to increase. Findings on the prevalence and patterns of substance use/abuse, consequences of substance use, and treatment for aging adults are examined, as well as diagnosis and training needs for the field and substance abuse related health-care costs among aging adults.

This literature review is intended to assist treatment providers, policymakers, and researchers/evaluators seeking evidence-based information to help inform decisions about substance treatment for the growing population of aging adults. A companion document to this literature review, *Substance Abuse Among Aging Adults: An Annotated Bibliography* (Feidler, Pertica, Leary, & Strohl, 2002), catalogs and classifies studies and other literature, as well as provides a roadmap to the data sources available on substance abuse among aging adults.

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

This literature review provides an overview of the past 10 years of research and current knowledge about substance abuse among aging adults. It presents the major issues, findings, and implications for substance abuse treatment practice, policy, and research/evaluation. A companion document, *Substance Abuse Among Aging Adults: An Annotated Bibliography* (Feidler et al., 2002), provides a quick reference to the types of literature and data sources available on this topic. Both documents will be of interest to practitioners, policymakers, and researchers/evaluators, as well as primary care clinicians and other health-care professionals who work with older adults.

1. INTRODUCTION

As the population of the United States continues to age, the issue of substance abuse among older adults is becoming a growing concern. Substance abuse/misuse among older adults is not widely studied, but there is a general consensus in the field that substance abuse in this population is a serious problem. Alcohol, and to a somewhat lesser extent, prescription medications, are currently more widely abused by this population than illicit drugs. The wave of baby boomers will soon be reaching older adulthood. By their sheer numbers alone, the substance abuse treatment system could soon be faced with an expanded older population. Additionally, unlike the current population of older adults, many baby boomers experimented with illicit drugs in their earlier years. This potential influx of older substance abusers could present the treatment system with new challenges.

2. APPROACH

The search criteria for the literature review and the companion annotated bibliography on substance abuse among aging adults were broad. The search encompassed books, book chapters, articles in peer-review and other professional journals, and government documents published between 1992 and early 2002. The selected documents included studies that were data based as well as other literature that focused on substance abuse or substance abuse treatment issues for adults age 55 and older. Multiple databases were searched, and additional resources were obtained from the World Wide Web and from experts in the field.

The initial search yielded over 600 publications on the topic of substance abuse and aging adults. Upon further review, publications were excluded if substance abuse was not the main topic or if neurobiological or physiological aspects of substance abuse were the primary focus. In all, 221 publications were selected for inclusion in the annotated bibliography. Of those, 106

were selected for inclusion in the literature review as most directly relevant in highlighting the major issues for this population. This literature review encompasses recent peer-review journal articles, books, and reports on substance abuse among aging adults; about 40 percent of the documents are empirical studies that provide data based findings and direction for the field. These studies range widely in sample size and methodological rigor. Some are ongoing national studies (e.g., National Household Survey on Drug Abuse), while others involve very small samples in a single community or treatment facility. Some use random assignment and control groups, while others do not.

3. FINDINGS

This overview of the literature synthesizes the major issues and findings about substance abuse among aging adults in the following areas: prevalence and patterns of use, consequences of substance use on physical and mental health, treatment approaches and outcomes, diagnosis and training needs, and the costs associated with substance abuse related treatment for this specific population.

According to the current literature, the substance most commonly abused and most commonly studied among adults age 55 and older is alcohol. This age group also misuses or abuses prescription and over-the-counter medications, and least frequently uses or abuses illicit substances. This situation may change somewhat as baby boomers, a group more likely to have experimented with illicit substances than previous generations, continue to age. Some gender differences were noted between older men and women, with men more likely to abuse alcohol and women more likely to abuse prescription medications. Differences also exist between those who began abusing substances early in life and those who began abusing substances later in life. Late-onset substance abuse (primarily alcohol) is often triggered by stressful events later in life, such as loss or retirement. Late-onset substance abusers generally have higher socioeconomic status and more education than their early-onset counterparts.

Substance use has consequences on both the physical and mental health of aging adults. Excessive use of alcohol and other substances, or even minimal use of alcohol in combination with prescription and over-the-counter medication, can seriously affect the physical health of older adults, leading to higher hospitalization rates and increased health-care costs. Co-morbidity, cognitive deficits associated with chronic medical conditions, and the effects of multiple medications on cognitive processes make it difficult to diagnose substance abuse in the elderly.

Treatment issues are widely discussed in the literature. One major issue is whether older adults need age-specific treatment or whether mixed-aged treatment is adequate. The argument for age-specific treatment is that aging adults have different needs than younger adults and therefore require specialized (e.g., slower-paced) treatment approaches. Some studies, however, have found that older adults have similar outcomes to younger adults in mixed-age treatment.

The literature describes a variety of treatment approaches for this population, including brief interventions, cognitive-behavioral therapy, and, for certain individuals, pharmacotherapy. Treatment practices that have been recommended for working with aging adults include taking a non-confrontational approach in treatment, developing a social support network, and attending to the individual's emotional state (e.g., depression). Because few outcome studies have been conducted for this population, it is still unclear as to what types of treatment work best for older adults and at what cost. While there are few treatment outcome studies, highlights of several studies indicate that treatment is effective for older adults. One study, for example, reported that aging adults have the highest rate of treatment success of all groups.

Getting a clear picture of the extent of substance abuse among aging adults is especially challenging because aging adult substance abusers are in many ways a hidden population. Many are no longer in the workplace, and they are less likely to be picked up through the criminal justice system. Diagnosis of substance abuse/misuse in aging adults in medical settings is also difficult because substance abuse is often masked by physical and mental health problems. In addition, most currently available diagnostic tools are for alcohol abuse and were not developed or validated specifically for use with aging adults. These instruments have been found to under-diagnose substance abuse problems in the aging population.

The costs associated with substance abuse and substance abuse treatment in the aging population have received little attention in the literature, and appear to primarily be limited to assessing health-care costs.

4. IMPLICATIONS FOR THE FIELD

The literature review yielded a number of implications for treatment practice, policy and research/evaluation addressing the needs the of the aging population. Treatment practitioners could benefit from evidence-based information on treatment approaches for aging adults such as cognitive behavioral therapy, brief interventions, and pharmacotherapy. The development and implementation of training programs to aid treatment practitioners, primary care physicians, and other health-care providers in recognizing and diagnosing substance abuse, particularly alcohol abuse and medication misuse, could improve the effective diagnosis by practitioners working

with the aging population. Aging substance abusers often have a myriad of needs in addition to substance abuse treatment. For example, many have physical and mental health problems, are isolated, and have limited resources. For these reasons, it is important that a strong network be created between substance abuse treatment providers, health-care providers, and social service providers in the community. Such linkages can foster better communication between various service systems, ensure appropriate services are being received and, ultimately, lead to better outcomes.

Substance abuse policy implications include preparing the treatment system for increased capacity to treat aging adults because of the expected growth in the number of aging substance abusers in the coming decades. Similarly, in order to meet the wide array of needs of this population (e.g., physical and mental health services, basic needs), policies that facilitate collaboration between the treatment community and other service systems for aging adults may deserve further exploration. Due to the fact that substance abuse is often misdiagnosed or goes undetected among this population, policies that support geriatric education and training for health-care professionals and others working with the aging may also be beneficial.

Much more research/evaluation is needed in the area of substance abuse and aging adults. Due to the relatively small number of treatment outcome studies being conducted with older adults, further evaluation of treatment effectiveness and treatment approaches with this population might be explored. Although there is some recognition that older adults are not a homogenous group (e.g., male/female and early/late-onset differences have received attention), most of the literature treats older adults as a homogenous group. More information is needed to determine if the patterns of use and treatment needs of subgroups of older adults, such as racial and ethnic minorities, differ from the generic group of older adults described in the literature.

Much of the research to date on aging adults and substance abuse is related to use of alcohol. To better inform the field, research/evaluation could explore such issues as the abuse of prescription and over-the-counter drugs and illicit drugs by aging adults, and the costs, cost benefits and cost effectiveness of treatment for this population. Finally, the development of more age-appropriate screening and assessment tools would help to improve diagnoses of substance abuse problems among older adults.

I. INTRODUCTION

I. Introduction

As the "baby boom" population of the United States continues to age and the expected lifespan lengthens, the issue of substance abuse among older adults is becoming a growing concern. In an April 2002 news release, the Substance Abuse and Mental Health Services Administration (SAMHSA) noted that as many as 17 percent of older adults are currently affected by alcohol and/or prescription drug misuse (2002a). The 1999 Surgeon General's report on mental health cites estimates of the overall prevalence of "heavy drinking" in older adults at 3 to 9 percent. As noted in Closser and Blow (1993), the 1991 Epidemiologic Catchment Area data showed lifetime prevalence of alcoholism to be approximately 14 percent in men age 65 and older living in the community, and about 2 percent in women. Alcohol use may actually be more problematic among aging adults simply because even minimal use of alcohol can exacerbate many medical conditions seen in those age 65 and older (Finch & Barry, 1992; Korrapati & Vestal, 1995). For example, some older adults who drink even small amounts of alcohol may experience alcohol-related problems (e.g., insulin-dependent diabetes, concurrent use of benzodiazepines, mild to moderate cognitive problems) (Blow, 2000). Even light or moderate drinking can put older adults at clinical risk, especially if they are taking prescription or over-the-counter medications (Forster, Pollow, & Stoller, 1993).

The rates of alcohol abuse are even higher among the aging in hospital and other institutional settings, ranging from 5 to 50 percent (Liberto, Oslin, & Ruskin, 1992). Allen & Landis (1997) point out that this wide range can be explained by differences in the reasons elderly individuals are admitted to hospitals. Among the elderly, one study found that alcohol-related hospitalizations are as common as hospitalizations related to heart attacks (Adams, Yuan, Barboriak, & Rimm, 1993). Closser and Blow (1993) note results from the Epidemiological Catchment Area Study indicating that the incidence of alcoholism concurrent with medical or psychiatric problems ranged between 15 and 58 percent for older adults.

The increased need for medications that accompanies aging contributes to the risk of over-the-counter and prescription drug abuse (Barnea & Teichman, 1994; Ruben, 1992; Thibault & Maly, 1993). In addition, the routine use of over-the-counter pain relievers and sedatives can be harmful whenever alcohol is also consumed (Forster et al., 1993; Finch & Barry, 1992). Forster et al. (1993) found that, for aging adults, the most common risk for adverse alcohol-related drug reaction was from the use of over-the-counter pain medications in combination with alcohol.

Illicit drug abuse is currently less of a problem among aging adults than alcohol or other licit drugs. A recent report from the National Household Survey on Drug Abuse indicated that 1 percent of adults age 55 and older used illicit drugs in the past month (SAMHSA, 2001a). Another report found, however, that between 1994 and 1999, substance abuse treatment admissions for illicit drugs increased for both males and females age 55 and older (25% and 43%, respectively). In general, admission rates for this age group are still quite low (SAMHSA, 2001b).

Even if prevalence remains steady, the number of aging adults abusing substances is expected to increase over the next few decades as the number of older adults in the population increases (Beresford, 1995; Gfroerer, Penne, & Pemberton, 2002; Patterson & Jeste, 1999). Using the National Household Survey on Drug Abuse (NHSDA), Gfroerer, Penne and Pemberton (2002) conducted an analysis to determine the number of adults age 50 and older who would need substance abuse treatment (i.e., meet the DSM-IV criteria for substance abuse or dependence) by the year 2020. Results indicate that the number of aging adults in need of substance abuse treatment will double from 1.6 million in 2000 to approximately 3 million in 2020. This increase is expected for all gender, race, and age groups among aging adults. To meet the treatment needs of this growing cohort of substance abusers, it is important that practitioners, policymakers, and researchers/evaluators understand the unique circumstances of the aging population.

1. PURPOSE AND SCOPE OF THE LITERATURE REVIEW

The purpose of this literature review is to provide a summary of the available literature on substance abuse/misuse among aging adults, a synthesis of findings, and a discussion of their implications for treatment practice, policy, and future research/evaluation. The companion document to this literature review, *Substance Abuse Among Aging Adults: An Annotated Bibliography*, (Feidler, Pertica, Leary & Strohl, 2002) provides a brief overview of the literature and a description of data sources available on substance abuse among aging adults for readers who would like more information.

For the purposes of this review, substance abuse was broadly defined as alcohol abuse, prescription drug misuse or abuse, over-the-counter drug misuse or abuse, illicit drug abuse or any combination of these.

This literature review covers approximately 10 years of literature on substance abuse among aging adults (1992 to early 2002). Because this is an emerging topic and one of increasing priority in the field of substance abuse, the scope of the literature search was intentionally broad. The search encompassed studies which focused primarily on substance

abuse, with data on an identifiable population of adults age 55 and older, and other documents discussing the impact of alcohol and other substance use on this age group. Publications were not included in this review if their primary focus was physiological or medical conditions, neurobiological factors, or mental health issues of aging adults, where substance abuse received only minor mention in a list of other contributing factors.

This literature review is intended to summarize the findings of a wide range of studies published in peer-review and other professional journals, books, and government documents that include discussions of the current state of knowledge on prevalence and patterns of substance use, physical and mental health consequences of substance use, treatment approaches and outcomes, diagnosis and training needs, and costs associated with substance abuse among aging adults. The studies described here vary in scientific rigor and include simple descriptive profiles of older adult substance abusers constructed from medical record reviews, group comparisons (old-young, pre-post treatment), and few random controlled study designs.

2. ORGANIZATION OF THE LITERATURE REVIEW

The remainder of this literature review is organized in three chapters. The approach used in identifying and obtaining the current literature on substance abuse among aging adults is described in Chapter II. Chapter III provides a synthesis of the literature, highlighting some of the major issues, key research/evaluation studies and their findings, and gaps that currently exist in the literature. The implications that the major findings and gaps in the literature have for substance abuse treatment services practice, policy and research/evaluation are presented in Chapter IV. A list of easily accessible government documents providing basic background information and practical guidelines for the assessment and treatment of aging adults is provided in the Appendix. These documents were produced by SAMHSA.

II. APPROACH

II. APPROACH

The purpose of this literature review is to synthesize information from key articles, books, and other documents that focus on substance abuse among aging adults. The approach to searching the literature, including databases and Web sites searched, keywords, and the criteria for inclusion/exclusion of documents are described in this chapter.

The identification and selection of relevant literature served two purposes: the development of a literature review and the development of a companion document, *Substance Abuse Among Aging Adults: An Annotated Bibliography* (Feidler et al., 2002). The annotated bibliography provides a more inclusive listing of relevant publications as well as available data sources relevant to substance abuse among aging adults.

Electronic databases used to identify literature included MEDLINE, PsycInfo, EBSCO*host*, and ETOH (the National Institute on Alcohol Abuse and Alcoholism's Alcohol and Alcohol Problems Science Database). Key words used in the search included aging adult, elderly, older, senior, substance abuse, prescription drug abuse, drug abuse treatment, and substance abuse treatment, and combinations of these terms. The literature search was limited to English-language publications released between 1992 and early 2002.

The electronic database search was augmented by using the World Wide Web to search for reports from Federal and state agencies, research/evaluation centers, and organizations specifically focused on aging adults, including:

- Administration on Aging, U.S. Department of Health and Human Services (www.aoa.gov)
- Alcohol and Drug Abuse Institute, University of Washington (http://depts.washington.edu/adai/)
- Alcohol Research Group (http://www.arg.org/)
- American Association for Geriatric Psychiatry (http://www.aagpgpa.org/)
- American Association of Retired Persons (http://www.aarp.org/)
- American Psychological Association (http://www.apa.org/)
- American Society on Aging (http://www.asaging.org/)
- British Society of Gerontology (http://www.britishgerontology.org/)

- California Department of Alcohol and Drug Programs (http://www.adp.cahwnet.gov/)
- Centre for Addiction and Mental Health (http://www.camh.net/)
- Gerontological Society of America (including its interest group on Aging, Alcohol and Addictions) (http://www.geron.org/)
- National Center on Addiction and Substance Abuse at Columbia University (http://www.casacolumbia.org/)
- National Institute on Alcohol Abuse and Alcoholism (NIAAA) (http://www.niaaa.nih.gov/)
- National Institute on Drug Abuse (NIDA) (http://www.nida.nih.gov/)
- National Institute on Aging (NIA) (http://www.nia.nih.gov/)
- Scripps Gerontology Center at Miami University (http://www.scripps.muohio.edu/)
- Substance Abuse and Mental Health Services Administration (SAMHSA) (http://www.samhsa.gov/)
- Veterans Administration (http://www.va.gov/)
- Wayne State University's GeroWeb (http://geroserver.iog.wayne.edu/GeroWebd/GeroWeb.html).

Articles and reports were also recommended by experts in the field of substance abuse and aging. Finally, references from some publications were used to identify other potential resources. These searches yielded nearly 600 articles, books, and reports on the topic of substance abuse among aging adults.

To be considered for further review a document had to focus primarily on substance abuse and include an identifiable population of adults age 55 and older. Documents were excluded if their primary focus was:

- Physiological or medical conditions in which substance use was only one of the contributing factors (e.g., the impact of alcohol consumption on bone density in the aging adult)
- Neurobiological aspects of substance abuse (e.g., effects of alcohol on brain membrane structure and neurotransmitters)

- Mental health issues of the elderly where substance abuse was only a minor point in the discussion
- Populations that did not focus on individuals age 55 and older.

The focus of this literature search was on alcohol abuse and both licit and illicit drug use and abuse. Because so much has already been written about the health consequences of smoking, and the consequences are well known, the use of tobacco was considered outside the scope of this review.

Using the inclusion and exclusion criteria described above, two reviewers examined each article, chapter, report, or abstract to determine if, on closer examination, it met all criteria. Any questions were arbitrated by a third reviewer. In total, 221 publications were selected for inclusion in the annotated bibliography, which catalogs the publications according to key content areas and which also describes available data sources relevant to substance abuse among aging adults.

This literature review cites 106 of the publications included in the bibliography, highlighting the major studies that include data on specific population samples and other literature that provides information especially useful in understanding the issues of alcohol and prescription use and misuse. Approximately 40 percent of the documents referenced in this review are analytic studies based on medical records, administrative data, interviews, clinical assessments, and a range of study designs. Characterizations of each document and study can be found in the appendix of the companion annotated bibliography (Feidler et al., 2002).

III. Findings

III. FINDINGS

This chapter presents a summary of recent findings from the documents selected from the past 10 years of literature on substance abuse/misuse among aging adults. In addition to summarizing trends noted in previous literature reviews on topics relevant to substance abuse among aging adults, this chapter highlights data-supported studies and their findings.

On the basis of the content of the peer-review journal articles, books, and reports reviewed, the findings are organized under five major topics:

- Prevalence and patterns of substance use
- Consequences of substance use
- Substance abuse treatment of aging adults
- Diagnosis and staff training needs
- Costs associated with substance abuse among aging adults.

The major issues and key findings in the literature on substance abuse among aging adults for each of these topics are described in the following sections.

1. PREVALENCE AND PATTERNS OF SUBSTANCE USE

As many as 17 percent of older adults are affected by alcohol and/or prescription drug misuse (SAMHSA, 2002a). Additionally, between 1994 and 1999, substance abuse treatment admissions for illicit drugs increased for both males and females age 55 and older (25% and 43%, respectively), although the overall numbers are still low (SAMHSA, 2001b). Moreover, it is estimated that the number of adults age 50 and older in need of substance abuse treatment will double to approximately 3 million by the year 2020 (Gfroerer, Penne, & Pemberton, 2002). The literature generally indicates the following patterns of substance use:

- Alcohol is the most frequently abused substance among aging adults

- Prescription and over-the-counter medications misuse/abuse is also common in this population

- Any use of alcohol in combination with some medications can be problematic for this age group

- Little illicit drug use has been reported among adults over age 55

- Older women are at greater risk of prescription misuse than are older men

- Age of onset of alcohol abuse tends to be later for women, and late-onset appears to be a response to life changes and stressors common to aging adults.

With the aging of the baby boom generation, there is speculation that rates of alcohol and other drug abuse among aging adults may increase significantly and place greater demands on the treatment system (Gfroerer, Penne, & Pemberton, 2002).

Information is provided below on the prevalence of substance abuse among aging adults by substance type. Also described are patterns of use, including demographic factors associated with substance abuse in this population and age of onset of substance abuse.

1.1 Alcohol

Alcohol use/abuse among aging adults has been consistently reported to be a major issue of concern (Bucholz, Sheline, & Helzer, 1995; Closser & Blow, 1993; Schonfeld & Dupree, 1994). The 1999 Surgeon General's report on mental health cites estimates of the overall prevalence of "heavy drinking" in older adults at 3 to 9 percent. Closser and Blow (1993) noted that Epidemiological Catchment Area Study data showed the lifetime prevalence of alcoholism to be approximately 14 percent in men and 2 percent for women age 65 and older living in the community. Prevalence of alcohol abuse among individuals age 65 and older is reportedly even higher in clinical populations in institutional settings. Previous studies have estimated that between 5 and 50 percent of patients age 65 and older in hospitals and other institutional settings have abused alcohol (Liberto et al., 1992). According to Allen and Landis (1997), this wide range can be explained by differences in reasons why elderly individuals are admitted to hospitals. One study concluded that among the elderly, alcohol-related hospitalizations are as common as hospitalizations related to heart attacks (Adams et al., 1993). A study of approximately 140 older adults in an psychiatric outpatient clinic found that 20 percent of patients have a substance use disorder (Holroyd & Duryee, 1997). This is consistent with results from the Epidemiological Catchment Area Study, as noted by Closser and Blow (1993), indicating the incidence of alcoholism concurrent with medical or psychiatric problems to be between 15 and 58 percent for older adults.

Alcohol intake often decreases with age, but any alcohol use may be problematic for some aging adults. For example, Forster et al. (1993) conducted a random/controlled study of more than 650 adults age 65 and older living in the community and concluded that even light drinking by someone taking multiple medications can have health consequences as serious as those that result from alcohol abuse. In addition, physiological changes such as decreased lean body mass result in decreased tolerance for alcohol. Even if an older adult does not change his/her alcohol consumption over time, there is a greater risk of intoxication.

1.2 Prescription and Over-the-counter Medications

Aging adults are at risk of misusing prescription and over-the-counter medications. Misuse includes under-use, over-use, and combined use with other substances, like alcohol. The major findings regarding misuse of medications include:

- Medication misuse is frequently unintentional
- Combining psychoactive drugs (sedatives, anti-depressants) with alcohol and drugs puts older adults at greater risk for alcohol-related adverse drug reactions
- Chronic use of psychoactive drugs decreases cognitive functioning in aging adults
- Physicians may contribute to medication problems by prescribing age-inappropriate medications.

Failure to detect how aging bodies react to drugs can lead to physician errors in prescribing medications.

Misuse of prescription and over-the-counter medications has been consistently reported in the literature on substance abuse among older adults (Barnea & Teichman, 1994). Numerous reviews of the literature (Barnea & Teichman, 1994; D'Archangelo 1993; Ruben, 1992; Thibault & Maly, 1993) indicate that older adults' misuse of medications is frequently unintentional, and arises from such factors as an inability to manage the schedule and number of prescribed medications, failure to follow use instructions, and the interaction of multiple medications. In their study of more than 62,000 emergency department visits, Schneitman-McIntire et al. (1996) found that more than 1,000 visits were for medication misadventures (non-compliance or inappropriate prescribing, but not intentional overdosing or substance abuse), and one-third of those visits were by adults age 65 or older.

NIDA's report on the abuse of prescription drugs states that older adults use prescription medications nearly three times as often as the general population (NIDA, 2001). Gomberg (1992) notes that non-narcotic analgesics are the most commonly reported drug of purchase by older persons. The risk that the consumption of painkillers poses for aging adults is illustrated by findings from a random/controlled study by Forster et al. (1993). This study of alcohol use and the potential risk for alcohol-related adverse drug reactions among community-based elders found that 19 percent of the adverse drug reactions were related to the use of over-the-counter pain medications together with alcohol.

Major, chronic medical disorders like those frequently found in older populations are often associated with heightened anxiety or other psychopathology. Indeed, Barnea and Teichman (1994) report that mental disorders and insomnia are the two most prevalent health problems in aging adults. Not surprisingly, the medications prescribed most frequently for this population are psychoactive drugs like sleeping pills, tranquilizers, and anti-depressants. Finch and Barry (1992) note that between 11 and 25 percent of adults over 65 have used tranquilizers in the past year. They caution that the use of such psychoactive medications in conjunction with alcohol or over-the-counter drugs, many of which have sedative effects, may become problematic for these older adults. This risk is underscored by Forster et al. (1993) in their random/controlled study of 667 adults age 65 and older living in the community. This study concluded that one-quarter of the participants were at risk for alcohol-related adverse drug reactions.

The use of psychoactive drugs can also have a negative impact on cognitive functioning. In their longitudinal study of benzodiazepine use as a cause of cognitive impairment in 418 hospital inpatients age 59-88, Foy et al. (1995) report that the use of sleeping pills and tranquilizers (i.e., benzodiazepines) is an important cause of decreased cognitive functioning in aging adults, even more important than alcohol. In addition, decreased cognitive functioning associated with the use of benzodiazepines has been found to persist after chronic use of the drugs is discontinued, and for this reason Allen and Landis (1997) encourage practitioners to prescribe anti-anxiety agents that have demonstrated efficacy in aging adults but little, if any, effect on cognitive functioning. Finch and Barry (1992) also suggest the use of non-pharmacologic treatment for insomnia and anxiety. They stress the usefulness of education, reassurance, avoidance of caffeine, and regular bedtime.

Misuse of prescription drugs is a problem in nursing homes. A 3-year longitudinal study of the outcomes of nursing home care for 21 residents with alcohol use disorders conducted by Joseph, Rasmussen, Ganzini, and Atkinson in 1997 found that nursing homes use psychoactive drugs with a frequency that has caused concern because of the ease with which aging adults can become dependent on them. Avorn et al. (1992) conducted a randomized trial of a staff training program designed to reduce the use of psychoactive drugs in nursing homes that involved 823 participants. They found that educational efforts can result in reduced use of psychoactive medications in these settings.

Prescribing medication for the elderly is a complex undertaking, and physician prescribing patterns can contribute to the misuse and abuse of medications by aging adults. Physicians can contribute to medication problems in aging adults by prescribing age-inappropriate medications and by failing to identify adverse effects. For example, Willcox,

Himmelstein, and Woolhandler (1994) surveyed 6,171 adults age 65 and older living in the community and, on the basis of the survey results, projected that 32 percent of aging adults receive at least one age-inappropriate medication. Additionally, an analysis conducted by the General Accounting Office found that approximately 18 percent (over 5 million) of the noninstitutionalized Medicare recipients over the age of 65 were using at least one of a group of 20 drugs that are considered to be inappropriate for that age group (GAO, 1995). Similar findings were reached by Zhan et al. (2001). These researchers found that approximately 20 percent of adults age 65 or older were using at least one of 33 drugs that are considered to be potentially harmful to the elderly.

In addition to the misuse of prescription medication, recent reports in the popular press indicate that some aging adults are illegally selling their prescription medication. Specifically, the sale of OxyContin by older adults has been noted (Alford, 2001; Drug dealing of OxyContin involves seniors, 2001; Gillespie, 2001). The popularity of this powerful pain medication on the streets has prompted some seniors in need of money to sell their OxyContin pills instead of using them for their intended purpose.

1.3 Illicit Drugs

There has been little study of illicit drug use among the aging population. Illicit drug abuse is found in aging adults, although heretofore it has been a lesser problem than either prescription drug abuse or alcohol abuse (Gomberg, 1999). According to the results of the 2000 National Household Survey on Drug Abuse Report (SAMHSA, 2001a), an estimated 568,000 persons (1% of all older adults in the United States) age 55 and older used illicit drugs in the past month. With the aging of the baby boom generation, this number may increase in the coming years.

1.4 Demographic Factors Associated with Substance Abuse Among Aging Adults

A notable body of literature addresses gender differences in substance abuse/misuse among aging adults. In a cross-sectional study of 5,065 consecutive consenting patients over 60 years old, Adams, Barry, and Fleming (1996) found that older men tend to abuse alcohol more than older women do. Men and women also differ in their drinking patterns: men drink more heavily than women. In a study of gender differences in 659 late-middle-aged and older (age 55-65) problem drinkers, Brennan, Moos, and Kim (1993) found that late-middle-aged women with drinking problems consumed less alcohol than their male counterparts. Bristow and Clare (1992) arrived at similar conclusions: after interviewing 650 adults over age 65 regarding their drinking habits, they found that men drink more excessively than women. Similarly, Liberto et al. (1992)

discovered consistent results in cross-sectional and longitudinal studies showing that elderly men drink more, drink more often, and have a higher prevalence of alcohol-related problems than do elderly women. A study of 282 elderly first-time admissions for alcohol treatment in Sweden found that drinking patterns of males and females were not significantly different, but that late-life onset of problem drinking was present in significantly more females than males (41% and 26%, respectively). Reasons for this difference were not clear, and the researchers called for additional study (Osterling and Berglund, 1994).

In their 1995 review of the literature on the screening and diagnosis of alcohol abuse and dependence in older adults, DeHart and Hoffman (1995) point out that, at all ages, women are less likely than men to have their alcoholism diagnosed. In addition, aging adult women with drinking problems are less likely than their male counterparts to seek alcohol treatment (Brennan et al., 1993).

In separate reviews of studies and clinical information, Butler and Higgit (1996), Closser and Blow (1993), and Finch and Barry (1992) report that women over age 65 are more likely than men to see a doctor and to be prescribed a psychoactive drug. Similarly, the National Center on Addiction and Substance Abuse at Columbia University (CASA, 1998) notes that the use of psychoactive drugs is most common among white older women. Gomberg (1992) states that aging adult women are at a greater risk of substance misuse resulting from inappropriate prescription of psychoactive drugs than is any other age-by-gender group, and Closser and Blow (1993) report that older women are at greater risk for abuse of prescription drugs than are older men. Analyzing the results of a cross-sectional study of 1,752 elderly individuals who were invited to participate in a large Medicare demonstration project on prevention by their private physicians, Mayer-Oakes et al. (1993) point out, however, that, after controlling for health status, women were not more likely than men to use benzodiazepines.

Along with gender, other demographic characteristics have been found to be associated with substance abuse. In their random/controlled study of 667 adults age 65 and older living in the community, Forster et al. (1993) found several characteristics that distinguished more frequent drinkers from abstainers and rare drinkers: more frequent drinkers are likely to be male, have a higher level of education, identify with Catholicism, or have no religious affiliation. These same researchers indicate that there is an overall decrease in prevalence of alcohol abuse/dependence as people age and that this decrease extends to those who have been widowed, but not to those who have been separated or divorced. Among those who are separated and divorced, alcohol abuse/dependence actually increases.

Other demographic factors may also influence substance abuse patterns among aging adults. For example, one study of hospital claims data found considerable geographic differences in alcohol-related hospitalizations for adults age 65 and older, with prevalence rates ranging from 18.9 per 10,000 in Arkansas to 77.0 per 10,000 in Alaska (Adams et al., 1993). The authors attributed these differences to state per-capita consumption of alcohol. Also, in their discussion of biological, cognitive, and psychosocial factors associated with substance abuse in older adults, King, Van Hasselt, Segal, and Hersen (1994) postulate that financial limitations and limited access to treatment providers may be factors that increase over-the-counter drug use with age.

Little information is available regarding racial/ethnic differences with regard to substance abuse. Kail and DeLaRosa (1998) discuss the challenges in treating elderly Latino substance abusers, but conclude that there are major gaps in the current knowledge base for this particular population. They recommend gathering more information in a systematic fashion in order to better serve aging Latinos in need of treatment.

1.5 Age of Onset of Alcohol Abuse

Age of onset of problem drinking is a topic of considerable interest in the literature, but no studies of age of onset of prescription, over-the-counter, or illicit drug use specifically among older populations could be found. The consensus in prior literature reviews (Krach, 1999; Dupree & Schonfeld, 1996) on alcohol use in aging populations indicate that as many as two-thirds of aging adult alcohol abusers are early-onset abusers, that is, life-long problem drinkers who have survived into late adulthood.

Closser and Blow (1993) hypothesize that late-onset alcohol abusers, those whose alcohol problems began in their 50s and 60s, may have begun drinking as a response to the life changes and stressors common to aging adults. In their 1995 analysis of Epidemiological Catchment Area Survey data, Bucholz et al. found that more women than men tend to be late-onset problem drinkers. Brennan et al. (1993) came to the same conclusion. In their study of more than 650 late-life problem drinkers, they concluded that late middle-age women were more likely to report recent onset of alcohol problems than their male counterparts. Similar conclusions were reached by Osterling and Berglund (1994). Age of onset of alcohol abuse has implications in regard to treatment and will be discussed in the section on treatment approaches later in this chapter.

2. CONSEQUENCES OF SUBSTANCE USE

Much of the literature discusses the medical consequences of substance abuse among aging adults (e.g., Barnea & Teichman, 1994; Gambert & Katsoyannis, 1995; Mundle, 2000;

Rigler, 2000). Impaired health, both physical and mental, is one of the most widespread consequences of substance use and abuse by aging adults. As an example, in a randomized study of substance abuse and the elderly, Brennan, Kagay, Geppert, and Moos (2000) found that, of 12,417 Medicare inpatients (hospitalized for any reason) with substance use disorders who survived to the end of a 4-year follow-up, about 54 percent were re-hospitalized with a medical diagnosis, and 45 percent were re-hospitalized with a mental health diagnosis. The consequences of substance abuse on the physical health and mental health of aging adults are discussed in the following sections.

2.1 Substance Use and Physical Health

Almost all of the studies and other literature address the physical health consequences of alcohol use, alone or in combination with medications. Previous reviews of the literature conducted from 1992 through 2000 (Dufour, Archer, & Gordis, 1992; Finch & Barry, 1992; Rigler, 2000) have reported that excessive use of substances, and even minimal use of alcohol in combination with prescription and over-the-counter drugs, seriously affects the physical health of adults age 65 and older. In their 1993 study of 667 adults age 65 and older living in the community and managing their own health-care decisions, Forster et al. (1993) found that 25 percent of respondents were at risk for at least one alcohol-related adverse drug reaction. Nineteen percent of respondents were using over-the-counter pain medications in combination with alcohol. Other medications respondents were using in combination with alcohol included prescription anti-hypertensives, prescription diuretics, over-the-counter cold preparations, and prescription arthritis medications.

The literature is not conclusive regarding the impact of moderate alcohol use on physical health. A recent study of more than 8,000 adults age 55 and older in primary care settings found that at-risk drinkers were not more likely to have poorer health functioning than either low-risk drinkers or abstainers (Blow et al., 2000a). On the other hand, the House Subcommittee on Health and Long-Term Care (H.R. Report 102-852, 1992) reported that up to 70 percent of elderly hospitalized the previous year were for alcohol-related problems.

Alcohol abuse may cause or exacerbate many medical problems in aging adults (Finch & Barry, 1992; Rigler, 2000): heavy drinking in aging adults is often associated with increased incidence of hypertension, cardiac arrhythmia, myocardial infarction, cardiomyopathy, stroke, esophageal and other cancers, and cirrhosis and other liver disease (Rigler, 2000; Smith, 1995). Compounding these health problems, heavy alcohol intake in aging adults may impair the immune system, rendering it less effective in responding to infection and cancer (Rigler, 2000; Smith, 1995).

No articles were identified in the literature that specifically focused on the consequences of illicit drug use on the physical health of aging adults.

2.2 Substance Use and Mental Health

Mental health problems often co-occur with substance abuse/misuse problems in aging adults. In a descriptive, retrospective chart review of the records of 101 community-dwelling adults age 65 and older who were discharged from psychiatric hospitals, Blixen, McDougal, and Suen (1997) found that nearly 38 percent had a substance abuse disorder in addition to a psychiatric disorder: 71 percent of those who were dually diagnosed abused alcohol, and 29 percent abused both alcohol and other substances, mostly prescription drugs. These rates were higher than rates found in young and middle-aged groups with psychiatric disorders. Depression was the leading psychiatric disorder found in this sample of aging adult alcohol and substance abusers. Similarly, in their study of more than 22,000 veterans with alcohol problems, Blow et al. (1992b) found that rates of major depression, anxiety disorders, and organic brain syndrome or dementia were higher among these older veterans compared to younger veterans. They also found that rates of comorbid substance abuse disorders, schizophrenia, and personality disorders were lower among older than younger veterans.

Few studies examined substance abuse by race/ethnicity. In one of the few studies found on substance abuse among older black Americans, Hendrie et al. (1996) examined alcohol consumption and cognitive performance in a sample of 2,050 urban black Americans age 65 and older. Both current and past heavy drinkers (10 drinks/week) scored lower on cognitive performance than did less frequent drinkers.

Co-morbidity, cognitive deficits associated with chronic medical conditions, and the effects of multiple medications on cognitive processes make it difficult to diagnose substance abuse in the elderly. Determining whether substance abuse is primary or secondary is important, however, because, as reported in the literature on various aspects of substance abuse and the elderly, cognitive deficits exhibited by alcohol abusers may improve with abstinence (Allen & Landis, 1997; Oslin, 2000). For example, in a very small pilot project to implement alcohol withdrawal at home for seniors, Evans, Street, and Lynch (1996) noted that cognitive deficits were evident in all four frail, elderly patients participating in the project, and cognitive status for all four was markedly improved at follow-up assessment 3 months following treatment. The issue of diagnosis is discussed more fully in a later section of this chapter.

3. SUBSTANCE ABUSE TREATMENT OF AGING ADULTS

Treatment of aging adults has been the subject of substantial discussion in the literature. More than 40 percent of the literature focuses on some aspect of treatment, and approximately 30

percent of that group are actual data-based studies. Because older substance abusers face different issues from their younger counterparts (e.g., more physical health problems, different circumstances surrounding onset of substance use), much of the literature focuses on how best to structure treatment to address these needs. For example, should older adults receive treatment only among their peers or be "mainstreamed" with younger adults? Both treatment approaches and treatment outcomes among aging adults are the focus of the following sections.

3.1 Treatment Approaches

A variety of treatment approaches are described in the literature. Some approaches are specific (e.g., cognitive-behavioral treatment), while other approaches are more general in scope (e.g., non-confrontational treatment). For this discussion, treatment approaches have been organized into the following topics:

- Age-specific services
- Cognitive-behavioral treatment
- Pharmacotherapy
- Brief interventions.

In addition, treatment of late-onset versus early-onset of substance abuse among aging adults is also discussed.

Age-specific Services

Given the differences between younger and older substance abusers, the issue of whether to treat older adults alongside younger adults or provide separate, age-specific treatment services is widely discussed in the literature. Age-specific treatment is defined as substance abuse services that are provided to older adults among their peers and are modified to meet the special needs of this population (e.g., taking their health status into consideration, running groups at a slower pace).

Most of the available literature suggests that age-specific treatment is preferable to "mainstreaming" older adults into more generic treatment services. For example, Kaempf, O'Donnell, and Oslin (1999) found that a psychosocial model of treatment led to greater treatment compliance for older adults than traditional group psychotherapy. The study sample was small (n=46), however, and compared results from two separate studies to arrive at its conclusions.

Specialized, age-specific services are thought to be necessary because of the differences that can exist between younger and older substance abusers. For example, Brower, et al. (1994), in a retrospective chart review of 48 older (age 60 and above) and 36 younger (age 21-35) patients admitted to residential/inpatient alcohol treatment, found that the older patients' withdrawal symptoms were more numerous and lasted longer than the withdrawal symptoms of the younger patients. Accordingly, they concluded that older alcohol abusers need detoxification services with a longer length of stay. Additionally, Dubey (1998) notes that home detoxification services, although not exclusively for seniors, can be useful for older adults who have mobility problems.

The antecedents to substance abuse may also be different for older adults than for their younger counterparts. For example, in their comparison of 156 older and younger drinkers, Schonfeld, Dupree and Rohrer (1995) found that, unlike younger drinkers, older drinkers were more likely to drink in response to depression or loneliness due to such events as retirement, and the death of friends and spouses. The focus in treatment for such individuals may be on developing social networks as well as on stopping the abuse of substances.

The literature has yielded a number of recommendations to accommodate existing treatment services to the needs of older adults. Recommendations include providing treatment services that are:

- Administered by staff experienced with this age group (Dupree & Schonfeld, 1998b; Schonfeld & Dupree, 1999; Pinter, 1995)
- Non-confrontational (Kaempf et al., 1992; Dupree & Schonfeld, 1998b)
- Conducted at a slower pace (Gomberg, 1999; Schonfeld & Dupree, 1994)
- Linked to ancillary services such as health care and services for the aging (Schonfeld & Dupree, 1999; Pinter, 1995)
- Conducted with the dignity of the older person in mind at all times (Gomberg & Zucker, 1998; Gomberg, 1999).

When direct services for aging adults include these components, it is hypothesized that this population may be more likely to remain in treatment and therefore have better outcomes.

Other recommendations, which apply to all clients but seem especially important in working with older adults, include a treatment focus on development of social supports (Allen & Landis, 1997; Gomberg, 1999), problem-solving strategies (Allen & Landis, 1997), and

strategies for identifying negative emotional states (e.g., loneliness, depression) that trigger drinking (Schonfeld et al., 1995). Also, it is important to include family members whenever possible (Gomberg & Zucker, 1998).

In an effort to determine if age-specific services are necessary, one comparison study (Mulford & Fitzgerald, 1992) examined the profiles of 657 older and younger adults arrested for driving under the influence. Several age differences reached statistical significance, but the authors concluded that this alone does not justify the development of special treatment programs for the elderly when the allocation of scarce resources is taken into account. Considering the heterogeneity of elderly problem drinkers, it might be as difficult to develop treatment services that work for all elderly problem drinkers as it has been to find one that works for problem drinkers of all ages.

Although it would appear that age-specific services are more desirable, such services are also more resource-intensive, and many providers may not have the resources to establish them. Willenbring, Olson, and Bielinski (1995) describe their Alcohol Related Disorders (ARD) clinic model for medically ill alcohol abusers. This treatment approach offers an alternative intervention for this specific population, but it is expensive to administer. In addition, staffing limitations, funding, and bureaucratic barriers may make this approach difficult to duplicate. Expensive, however, does not necessarily mean that the treatment is not cost-effective. Further investigation is needed to determine the cost effectiveness of various age-specific treatment approaches.

Cognitive-behavioral Treatment

Cognitive-behavioral therapy is one potential treatment approach that may be appropriate for use with older adults. Dupree and Schonfeld (1998a) describe their cognitive-behavioral and self-management model of treatment for alcohol abuse, which includes three phases. First, the antecedents, behaviors, and consequences (ABCs) of drinking are examined. Next, clients are taught to recognize situations that carry a high risk for drinking and therefore can be considered "triggers." Finally, skills for coping with these triggers are taught through problem solving, role playing, and self-monitoring of drinking behavior and cues. In this treatment approach, the emphasis is on teaching older alcohol abusers the skills they need to control their drinking behavior and on giving them opportunities to exercise these skills, for example, through role-playing. This approach was tested with over 100 older Veterans Administration patients, and those who completed cognitive-behavioral treatment had significantly higher rates of abstinence than those who did not (Schonfeld et al., 2000).

Rice, Longabaugh, Beattie, and Noel (1993) also examined cognitive-behavioral treatment. In their study of 229 adults, age group differences were examined in response to three treatment conditions: cognitive-behavioral treatment, relationship enhancement, and relationship and vocational enhancement. The older adults who participated in cognitive-behavioral treatment had significantly higher percentage of days abstinent than older adults in the vocational enhancement group. Older adults did poorest after receiving vocational enhancement treatment. The authors conclude that age should be taken into consideration when making treatment assignments.

Pharmacotherapy

Pharmacotherapy (e.g., naltrexone, disulfiram) is one accepted approach to treating alcohol abuse. Its use with older adults, however, is still being investigated. A random/controlled study of 36 older adults was conducted by Oslin and colleagues, who concluded that naltrexone is well tolerated among older alcohol abusers (Oslin, Liberto, O'Brien, & Krois, 1997a). In a separate analysis of the same data, it was concluded that those receiving naltrexone were less likely to relapse after sampling alcohol than the placebo-controlled group (Oslin et al., 1997b). Some authors indicate that pharmacotherapy can be useful with older adults, but caution that the client's health and use of other prescriptions should be carefully considered in order to prevent harmful side effects (Schonfeld & Dupree, 1994). Rigler (2000) indicates that naltrexone is effective in reducing cravings, but suggests that more testing be done with older alcohol abusers.

Unlike naltrexone, disulfiram is usually not recommended for older adults due to the risk of serious negative side effects: when a person taking disulfiram consumes alcohol, the disulfiram-alcohol reaction can cause tachycardia and hypotension (Dufour & Fuller, 1995; Rigler, 2000). In addition, because aging adults may have decreased cognitive functioning, they may not be able to understand that they must refrain from taking some over-the-counter medications, many of which contain alcohol (Thibault & Maly, 1993).

Further investigation into various pharmacotherapies appears warranted. Treatment professionals should take the older adult's health and the risk for harmful side effects into consideration before recommending the use of one of these therapies (Schonfeld & Dupree, 1994).

Brief Interventions

Another treatment approach described in the literature on substance abuse among aging adults is brief interventions (short counseling sessions). One study of brief interventions by

Fleming et al. (1999) involved 158 older adults and consisted of two sessions of 10 to 15 minutes each. The sessions included advice, education, and contracting. After 1 year, those who received the intervention had significant reductions in 7-day alcohol use, binge drinking, and frequency of excessive drinking.

Brief interventions are appealing because they can be used in a range of health-care settings, increasing the likelihood of identifying older adults who may need substance abuse services (Blow & Barry, 2000). Brief interventions can also be used at home, making this an important approach for older adults who may be unlikely to commute to outpatient programs.

Treatment of Late-onset Versus Early-onset Substance Abuse

Treatment of late- versus early-onset of substance abuse problems has been the focus of much discussion in the field. Late-onset substance abusers, or those who develop substance abuse problems later in life, are said to differ greatly from those who develop problems early in life. For example, late-onset alcohol abuse is often attributed to stressful events such as the death of a spouse or retirement (Barnea & Teichman, 1994; Schonfeld & Dupree, 1994). Late-onset alcohol abusers often have higher socioeconomic status and more education, whereas early-onset alcohol abusers are characterized by more antisocial behavior, a family history of alcohol problems, family estrangement, and lower socioeconomic status (Liberto & Oslin, 1995). Additionally, late-onset alcohol abusers are more likely to be female than male (Beresford, 1995; Brennan et al., 1993; Bucholz et al., 1995).

Differences stemming from late- versus early-onset of substance abuse may have important implications for treatment. Barnea and Teichman (1994) note that numerous studies report that treatment for late-onset alcohol abuse often focuses more on the reasons for drinking (e.g., depression) rather than the drinking behavior itself. Also, although many see late-onset alcohol abusers as easier to treat, Liberto and Oslin (1995) note that late-onset alcohol abusers often show stronger denial than early-onset clients, making treatment difficult.

Liberto and Oslin (1995) recommended that further exploration and discussion regarding early- and late-onset substance abusers are needed on the following topics:

- Developing greater consensus on the cut-off age for early-onset versus late-onset
- Exploring the differences between early- and late-onset groups, including how each group accesses treatment
- Exploring older adults' reactiveness to stressful life events in order to better design treatment services.

Further study is also needed to determine whether there are differences in treatment outcomes for these early- and late-onset substance abusers (Dufour & Fuller, 1995).

3.2 Treatment Outcomes

Treatment outcomes for aging adults have not been extensively studied, although the literature discusses outcomes in general terms. Findings from some recent studies of treatment outcomes, including post-treatment outcomes such as abstinence and intermediate outcomes such as treatment compliance are summarized, and treatment outcomes among older versus younger adults are presented in the following sections.

While there are few treatment outcome studies, highlights of several studies indicate that treatment is effective for older adults. Taken together:

- Four studies using abstinence as a treatment outcome measure showed that different treatment approaches promoted abstinence among older adults.
- Two studies using treatment compliance as an intermediate measure of treatment effectiveness showed that older adults were more compliant than their younger counterparts and that they were more likely to comply when greater social support was available.
- Four studies showed that older adults have rates of treatment success as high or higher than younger age groups.

These studies are described more fully in sections that follow. As discussed earlier, opinions differ on the need for age-specific treatment versus mixed-age treatment. More studies are needed to assess whether age-appropriate treatment and specific treatment components may be more effective for older populations.

Alcohol Abstinence

Four studies were identified that examined alcohol abstinence following treatment. Two studies involved cognitive-behavioral treatment, one involved pharmacotherapy, and the fourth involved age-specific inpatient treatment. Three of the studies used a comparison group, and one used a pre-post no comparison group design. Two of the studies used random assignment and two did not. All of the treatment approaches examined were found to be effective in promoting abstinence.

Schonfeld et al. (2000) examined the impact of cognitive-behavioral treatment on 110 older veterans with alcohol or drug abuse problems. At 6-month follow-up, they found that those who completed the program had higher rates of abstinence than noncompleters. In another study involving cognitive-behavioral treatment, Rice et al. (1993) found that, of 229 adults randomly assigned to three treatment conditions, the older adults who participated in cognitive-behavioral treatment had a significantly higher percentage of days abstinent than older adults in the vocational enhancement group.

In a double-blind, placebo-controlled efficacy study of naltrexone as an adjunctive treatment for older adults with alcohol dependence, Oslin et al. (1997b) found that, among the 44 participants, there were no significant differences between the treatment and placebo groups in the number of participants remaining abstinent or in the number of participants who relapsed. All placebo-treated subjects, but only half of the naltrexone group, relapsed after sampling alcohol

Age-specific inpatient treatment for alcoholism was examined for a group of 90 adults age 55 and older. Results indicate that more than half of the participants who completed the 6-month follow-up reported being abstinent. Additionally, all participants reported improved health, and those who were abstainers or non-binge drinkers at 6 months also reported decreased psychological stress (Blow et al., 2000b).

Treatment Compliance

Treatment compliance may be considered as an intermediate outcome measure of treatment effectiveness. Kaempf et al. (1999) found that older adults were more compliant with treatment than younger adults in a study of a psychosocial model of treatment called BRENDA. This treatment approach utilized biopsychosocial assessment, empathy, direct advice, and naltrexone or placebo. The authors concluded that for older adults this treatment model was more effective than traditional addiction treatment.

Atkinson, Tolson, and Turner (1993) examined the variables that affect treatment compliance (e.g., attending sessions) of 205 male drinkers age 55-79 with age-specific outpatient treatment. Treatment was conducted at a slower pace than typical for outpatient groups and involved reminiscing as a part of therapy. Those more likely to comply with treatment had a third party (e.g., their spouse, court and probation officers) involved in counseling, were late-onset alcohol abusers, and were community dwellers in age-specific outpatient social group treatment.

Older Versus Younger Adults

The available literature indicates that older adults can succeed in treatment. A report by the Subcommittee on Health and Long-term Care of the U.S. House of Representatives' Select Committee on Aging reported that older adults have the highest rate of treatment success of all age groups (H.R. Report 102-852, 1992). There is evidence that adults age 55 and older can be successful in both mixed-age and age-specific treatment. Lemke and Moos (2002), in a comparison study involving 432 individuals age 55-77, found that older adults in a mixed-age inpatient alcohol treatment program had similar outcomes to the younger and middle-aged patients in the same program, despite the fact that many older patients had poor physical health and lower cognitive status. The older patients in this program also had more social supports, fewer psychological symptoms, and fewer drinking-related problems than other age groups.

Similarly, in a comparison study of 637 problem drinkers, Fitzgerald and Mulford (1992) concluded that older problem drinkers were as likely or more likely to remain in treatment and recover than younger problem drinkers. This study also noted that early-onset older drinkers were at least as likely to succeed in treatment as late-onset older drinkers.

Moos, Mertens, and Brennan (1995) compared older substance abuse patients (age 55 and older) to middle-aged (age 35-54) and younger substance abuse patients (age 18-34). They found lower case-mix-adjusted readmission rates for older patients who received more comprehensive assessment and more outpatient mental health aftercare. Younger patients, however, responded better to more family involvement and treatment that emphasized the development of social and work skills.

Although outcome studies on older adults are not common, the literature described above suggests that this population can be successfully treated. Based on studies like the above, as well as other reports in the literature, some authors advocate age-specific treatment. Others propose that mixed-age treatment is just as effective. More exploration is needed before definitive conclusions can be drawn about the types of treatment that work best with various subpopulations of older substance abusers.

4. DIAGNOSIS AND STAFF TRAINING NEEDS

As has already been demonstrated by the limited information on the prevalence of substance use other than alcohol in the aging population, more attention to the challenges of identifying and diagnosing substance abuse in this population may prove useful for the field. Effective identification and diagnosis also requires appropriate assessment tools and training for

medical and other professionals to facilitate increased detection of substance abuse problems. The literature on these issues is examined in the following sections.

4.1 Identification and Diagnosis of Substance Abuse Among Aging Adults

Identifying and diagnosing substance misuse/abuse among older adults have received much attention in the literature, including:

- Literature reviews (e.g., Allen & Landis, 1997; Congliario, Kraemer & McNeil, 2000; D'Archangelo, 1993; DeHart & Hoffman, 1995; King et al., 1994; Mundle, 2000; Nirenberg, Lisansky-Gomberg & Cellucci, 1998; Rigler, 2000; Thibault & Maly, 1993)
- Cross-sectional studies (e.g., Adams et al., 1996; Buchsbaum et al., 1992; Jones et al., 1993; McInnis & Powell, 1994)
- Cognitive-behavioral studies (e.g., Dupree & Schonfeld, 1998b)
- Random studies (e.g., Hirata, Almeida, Funari, & Klein, 2001)
- Surveys (e.g., Joseph, Ganzini, & Atkinson, 1995).

Journal articles such as the Kaempf et al. review of a specific alcohol treatment model (1999) and Sullivan and Fleming's 1997 guide to substance abuse services discuss the challenges of identifying and diagnosing alcohol, prescription, and other substance misuse/abuse in this population.

The following sections describe some of the challenges of identifying substance misuse/abuse in older adults and some of the assessment tools that have been developed and modified for use with this population.

Challenges of Identifying Substance Abuse in Aging Adults

Changes in socially defined roles as well as in physical and mental health as people age both contribute to the difficulty of recognizing substance abuse among older adults. Changes in their socially defined roles reduce the visibility of aging adults in the community once they have retired, their children have grown into adulthood, and their financial status has shifted downward. Identifying substance abuse/misuse among aging adults is particularly challenging for the usual reasons (e.g., denial, fear of being stigmatized) as well as some that are specifically related to aging. Like their younger counterparts, older adults may deny or not be aware of

having a substance use problem. They may choose not to seek treatment because of perceived negative societal attitudes about drinking and perceived stigma associated with excessive drinking that exists among many in older generations. Aging adults may also face barriers to treatment because of lack of mobility and insurance restrictions on substance abuse treatment.

Substance abuse/misuse in this population is often difficult to recognize because physical and mental health problems may conceal the substance abuse (Closser & Blow, 1993; Finlayson, 1995; H.R. Report 102-852, 1992). In addition, the presence of cognitive deficits can be problematic. For example, in a study of 130 elderly, cognitively impaired, long-term care facility residents, Carlen et al. (1994) found that only one-fourth of those with alcohol related dementia (ARD) were diagnosed correctly. Interestingly, the ARD residents had milder cognitive impairment than non-ARD residents, but much longer lengths of stay in long-term care.

Need for Assessment and Screening Tools

Along with the masking of substance abuse problems by other issues, effective diagnosis is hampered by a general lack of appropriate assessment and screening tools for the aging population. Several well-known screening tools for alcohol abuse are:

- CAGE (Cut, Annoyed, Guilty, Eye-Opener)
- MAST (Michigan Alcoholism Screening Test)
- AUDIT (Alcohol Use Disorder Identification Test).

Each of these assessment tools is briefly described in the following sections.

CAGE. The CAGE (Cut, Annoyed, Guilty, Eye-Opener) Questionnaire is a four-item measure that can be used for the screening of individuals for alcohol misuse and abuse. The four items are:

- Have you ever felt you ought to cut down your drinking?
- Have people annoyed you by criticizing your drinking?
- Have you ever felt guilty about your drinking?
- Have you ever had a drink first thing in the morning as an “Eye opener”?

A total of two or more positive responses to these questions indicates a history of alcoholism. SAMHSA, however, recommends that primary care physicians lower the threshold to one positive response in order to identify more older individuals with substance use problems (Sullivan & Fleming, 1997).

Tools like the CAGE and the Michigan Alcoholism Screening Test (MAST) were developed on and validated for a younger population. Consequently, the questions asked on these instruments may be inappropriate for use with older adults. Seven studies in this literature review tested the use of various assessment instruments with older adults, and the results were mixed. For example, in a study of adults age 60 and over (Adams et al., 1996), the CAGE alone did not detect all problem drinkers; recommendations included adding questions about the quantity and frequency of use in order to better detect a drinking problem in older adults. Buchsbaum et al. (1992) also studied adults age 60 and over and concluded that the CAGE can distinguish between those with and without a drinking problem, but that the cut-off score (one or two of the four questions answered in the positive) should depend on the prevalence of the drinking problem in the population being studied. Similarly, Jones et al. (1993) concluded that the CAGE would be more useful if practitioners were aware of the substance abuse probability associated with each score.

MAST, MAST-G, and S-MAST-G. The Michigan Alcoholism Screening Test (MAST) is a 25-item questionnaire that focuses on the consequences of problem drinking, as well as perceptions of one's own alcohol problems. The geriatric version of the Michigan Alcoholism Screening Test (MAST-G) (Blow et al., 1992a) is a 24-item questionnaire that assesses drinking behaviors and attitudes. As with the MAST, respondents answer "yes" or "no" to each item. Five or more "yes" responses are indicative of a drinking problem. The MAST-G has a high specificity and sensitivity among older adults and has been tested on older adults from a wide range of settings, including primary care clinics, nursing homes, and older adult congregate housing locations. It includes questions that are appropriate for an older population, but it has been proposed that the length of the instrument may be prohibitive for use with this population (Conigliaro, 2000). A validated short form of the MAST-G, the Short Michigan Alcoholism Screening Test-Geriatric Version (S-MAST-G) has 10 items. Two or more 'yes' responses indicate that the respondent has a drinking problem.

AUDIT. The Alcohol Use Disorder Identification Test (AUDIT) (Babor, de la Fuenta, Saunders, & Grant, 1992) is designed to be used as a brief structured interview or self-report survey. It involves a 10-item questionnaire that assesses drinking behaviors and attitudes. Additionally, the AUDIT contains a Clinical Questions and Procedures section that consists of a trauma history and clinical examination. Although the AUDIT has not been evaluated extensively for use with older adults, it has been validated cross culturally, and it may therefore be useful in identifying alcohol problems among older individuals of ethnic minorities. One study of 93 elderly primary care patients in Southeast Ohio compared the AUDIT and the CAGE in detecting alcohol use disorders (Clay, 1997). Results showed that the AUDIT detected more

individuals with alcohol problems than the CAGE, suggesting that the AUDIT may be an appropriate screening tool for older adults.

A study of an institutional population concluded that both the MAST-G and the CAGE were adequate in detecting alcohol use disorders among aging veterans in a nursing home setting (Joseph et al., 1995). Also, in an assessment of the MAST and MAST-G, Hirata et al. (2001) concluded that the MAST-G was no better at detecting alcohol abuse in older populations than the MAST. On the basis of studies such as those noted above, it has been suggested that, like the CAGE, the MAST should be supplemented with additional questions regarding the frequency and quantity of alcohol use (Hirata et al., 2001; Rigler, 2000).

Diagnostic tools need to take into account not only differences between older adults and younger adults, but also differences between older women and older men. For example, Brennan et al. (1993), in a comparison study of 659 late-middle-aged women and men with drinking problems, noted that women used more psychoactive medications, were more depressed, and were less likely to seek alcohol treatment than men. Bucholz et al. (1995), in a review of the epidemiology of alcohol use, problems, and dependence in elders, reported that women are also more likely than men to experience late-onset alcohol abuse problems. Consequently, there is a call for the development of assessment and screening tools specifically for women (Blow, 2000; Brennan et al., 1993).

Along with developing more appropriate diagnostic tools, some researchers recommend that screening for substance use problems be conducted routinely in nursing homes and other health-care settings in order to identify individuals who may otherwise go undiagnosed (Joseph et al., 1995; Sullivan & Fleming, 1997). Schonfeld and Dupree (1999) recommend routine screening of all patients and recipients of aging services for alcohol and prescription medication problems to bring potential problems to light for further assessment. This recommendation is bolstered by results from the National Institute of Mental Health's Epidemiologic Catchment Area Study that indicate that older adults in health-care facilities for medical or psychiatric problems are much more likely to have alcohol problems than those in the general public, and are significantly more likely to seek inpatient care for diagnoses other than alcohol abuse (Closser & Blow, 1993). Another recommendation is that when screening for substance use problems, interview approaches for this population should be non-confrontational (Dupree & Schonfeld, 1998b).

4.2 Training

Given the difficulties in diagnosing substance abuse problems in older adults, it is extremely important that health-care professionals and others working with this population be

trained to recognize and properly address substance use problems. Recent studies have indicated that many primary care physicians are not able to accurately diagnose substance abuse issues, which can have negative implications for treatment as well as health-care spending. For example, a nationally representative survey of 400 physicians conducted by the National Center on Addiction and Substance Abuse (1998) found that only 1 percent of physicians even considered a substance abuse diagnosis for older women who exhibited signs of alcohol and prescription drug abuse. Instead, these physicians were more likely to consider a diagnosis of depression. A study of positive screening for alcohol abuse among 205 elderly patients at a hospital emergency department found that physicians detected only 6 (20%) of the 29 current alcohol abusers (Adams, Magruder-Habib, Trued, & Broome, 1992). Mundle (2000) concludes that such under-diagnosis reflects both a lack of training in substance abuse issues and a pessimistic attitude about successfully treating this population.

Training is also necessary because, without recognizing an existing substance abuse problem, primary care physicians may unintentionally prescribe potentially addictive medications and/or medications that interact with the substance(s) being used, especially alcohol. Ruben's (1992) review of the literature on the elderly and alcohol and medication abuse ascribed one cause for medication misuse to physician mistakes, such as inappropriate dosing, lack of attention to the client's medical condition, and failure to monitor the client's drug use and conduct periodic reevaluations. Gomberg (1992), in her discussion of medication problems and drug abuse in the elderly, recommended that physicians receive more gerontological medication education and training to improve their prescription practices. In addition, partnerships in geriatric medication should be strengthened between physicians and pharmacists. Similarly, in their review of substance abuse and the hospitalized elderly, Ondus, Hujer, Mann, and Mion (1999) recommend that hospital nurses receive training in geriatric and addiction issues in order to decrease inappropriate dispensing of medications, thereby reducing length of stay and improving the quality of care. To prevent dependence among aging adults, they also recommended that practice guidelines be developed for using sedative-hypnotics and anxiolytic drugs (e.g., that benzodiazepine use be brief and limited to a specific time of stress, and symptomatic treatment of insomnia with medications should be limited to 7 to 10 days).

One study demonstrated that effective staff training on the use of psychoactive drugs can have an effect on client outcomes. Avorn et al.'s (1992) controlled, randomized trial of a program to reduce the use of psychoactive drugs in nursing homes (the trial involved 823 participants) described client functioning after a 5-month training program on geriatric psychopharmacology for nursing home staff. After the staff had received training on psychopharmacology issues, more patients in the experimental facilities had their antipsychotic medications discontinued than did patients in control facilities. Patients who had discontinued

their antipsychotic medications were also less likely to show declines in cognitive functioning, and there was no significant increase in staff reports of behavior problems among these patients after reduction in use of antipsychotic medications.

Some training materials are available to aid professionals in detecting, screening and treating substance abuse problems in aging adults. Two Treatment Improvement Protocols (TIPs) published by the Center for Substance Abuse Treatment (Blow, 1998; Sullivan & Fleming, 1997) provide primary care physicians with practical information on how to indirectly question older adults regarding problem alcohol or prescription drug use, recognize warning signs of substance abuse/misuse, and identify available treatment options. Additionally, the Center for Substance Abuse Prevention (CSAP) provides an on-line course for professionals on substance abuse among older adults. This course can be accessed at: http://www.samhsa.gov/preventionpathways/courses/courses.htm.

Because the elderly often have multiple health and social service needs, non-health professionals can benefit from training in dealing with substance use issues among aging adults. In addition, inter-agency coordination is also recommended. Pinter (1995) describes a county-wide project to identify and refer older adults in need of alcohol and other drug treatment; recommendations from a review of this project were that professionals receive training in alcohol and other drug abuse, mental health, and the specific issues of the elderly. Specifically, physicians need information on the incidence of prescription misuse/abuse among older adults. Similarly, Coogle, Osgood and Parham (2000) describe a statewide detection and prevention program for geriatric alcohol abuse and its impact on both the knowledge of service providers regarding alcohol issues as well as the positive impact on service delivery systems for older adults.

In addition to training health-care and other professionals, older adults and their families can benefit from more education about contraindications of using various medications (both prescribed and over-the-counter) in combination and with alcohol and about how best to manage medications (Fink, Beck, & Wittrock, 2001; Gomberg, 1992; Ruben, 1992). One resource for this type of information is an on-line course offered by CSAP entitled, “Alcohol, Medication and Older Adults. For Those Who Care About or Care For an Older Adult” (http://www.samhsa.gov/preventionpathways/courses/courses.htm.).

5. COSTS ASSOCIATED WITH SUBSTANCE ABUSE AMONG AGING ADULTS

The cost of substance abuse among older populations has not received a great amount of attention in the literature. Only a handful of publications were identified that provided data on expenditures related to substance abuse and older adults. One, by a U.S. House subcommittee,

estimated that the cost of alcohol-related hospital care for older adults was $60 billion in 1990 (H.R. Report 102-852, 1992). Another study estimated that the cost to Medicare for hospital admissions with a primary diagnosis of alcohol were over $233 million in 1989 (Adams et al., 1993). The National Center on Addiction and Substance Abuse at Columbia University (CASA) (1994) study documented the impact of substance abuse on the Medicare hospital program and found that about one out of every four dollars Medicare spends on inpatient hospital care, and one out of every five Medicare hospital admissions, can be attributed to substance abuse. The CASA study projected that substance abuse will cost the Medicare program one trillion dollars over the next 20 years.

Only one study examined the actual cost of alcohol treatment for aging adults. Kashner, et al. (1992) examined outcomes and costs for 137 older VA patients randomly assigned to either age-specific or traditional inpatient alcohol treatment. The cost of care for the age-specific program was approximately 3 percent lower than traditional care, and those in age-specific care were more likely to be abstinent at follow-up. None of the available literature provided cost estimates related to illicit substance abuse or prescription medication misuse/abuse. In addition, no studies were identified that addressed such issues as societal costs of substance abuse or the cost-benefits of treatment for this population.

There were a number of publications identified, however, that discussed costs in general terms. For example, given that substance abuse can be misdiagnosed as a physical health problem, health-care resources may be used ineffectively by not treating the root problem (Closser & Blow, 1993). In addition, older adults are at higher risk for health problems, which can be exacerbated by substance use (Finch & Barry, 1992; Rigler, 2000). In turn, exacerbated medical problems may lead to increased health-care costs.

The implications of the findings presented here for practice, policy and further research/evaluation needs on substance abuse among aging adults are discussed in the following chapter.

IV. Implications for the Field

IV. Implications for the Field

Substance abuse/misuse among older adults is not widely studied, but based on the available evidence in the field there is a general consensus that substance abuse in this population is a serious problem. According to the available literature, alcohol, and to a somewhat lesser extent, prescription medications, are currently more widely abused by this population than illicit drugs. The wave of baby boomers will soon be reaching older adulthood. By their sheer numbers alone, the substance abuse treatment system could be faced with an expanded older population. Additionally, unlike the current population of older adults, many baby boomers experimented with illicit drugs in their earlier years. This potential influx of older substance abusers could present the treatment system with new challenges. This chapter summarizes the available literature on substance abuse among aging adults and their implications for substance abuse treatment practice, policy, and services research/evaluation.

1. SUMMARY

This literature review encompasses recent peer-review journal articles, books, and reports on substance abuse among aging adults. While many publications address the issues and concerns of substance use/misuse among aging adults, there is not a large body of evidence-based studies focused on this target population. Most of the data on prevalence is on alcohol use, and a much smaller proportion of the studies includes data on misuse of prescription and over-the-counter medications. Little data are available on prevalence rates for illicit drug use among aging adults. The evidence-based literature has focused primarily on the identification of substance abuse among aging adults and on the health consequences of alcohol abuse. Little data have been found on the health consequences of illicit drug use by aging adults. Of the empirical studies addressing treatment, the majority are comparisons of treatment subpopulations (age, gender). There are few data-based studies of treatment outcomes and fewer still on the cost of substance abuse treatment for this population.

The data-based studies range widely in sample size and methodological rigor. Some are ongoing national studies (e.g., National Household Survey on Drug Abuse), while others involve very small samples in a single community or treatment facility. Few use random assignment and control groups, while the majority do not.

This section summarizes the literature on substance abuse among aging adults in terms of prevalence, consequences of use, treatment, diagnosis and training, and cost.

1.1 Prevalence and Patterns of Substance Use/Abuse

Recent studies in the literature show that alcohol is the most common substance of abuse among older adults and that more men than women abuse alcohol. Older adults often begin abusing alcohol later in life (late-onset) in response to negative life events such as grief over the loss of loved ones, loss of friends, and isolation. Late onset of alcohol abuse is more common for women than men, and women are less likely than men to seek treatment for their alcohol problems.

Aging adults use prescription medications nearly three times as often as the general population. Prescription and over-the-counter drugs are often misused by older adults, but this misuse is often unintentional. Physicians may contribute to unintentional misuse by prescribing age-inappropriate medications. Older women are more likely than men to see a doctor and to be prescribed a psychoactive drug, and older women are at greater risk of prescription misuse than older men.

Illicit drugs are the least abused substances among the current population of aging adults, but this trend may change as the baby boomer generation reaches older adulthood.

1.2 Consequences of Substance Use

Alcohol intake generally decreases with age, but due to the interaction of alcohol with various medications and over-the-counter drugs, as well as the fact that older people metabolize alcohol more slowly than younger individuals, even minimal alcohol consumption can be problematic for this population. Alcohol can also cause or exacerbate medical problems in aging adults (e.g., hypertension, stroke, liver cirrhosis, cognitive deficits). The literature shows that, like alcohol, chronic use of psychoactive drugs can decrease cognitive functioning in aging adults. With treatment, however, these problems can be greatly reduced.

1.3 Substance Abuse Treatment of Aging Adults

Treatment of older alcohol abusers, using a variety of methods, appears to be successful. The issue of age-specific versus traditional treatment is widely discussed in the literature. Age-specific services may be preferable to "mainstreaming" older adults into traditional services due to such issues as differences in the antecedents of drinking and the existence of co-occurring medical conditions.

A number of treatment approaches have been examined with this population, including cognitive-behavioral treatment, brief interventions, and pharmacotherapy. Studies have shown positive results for all of these approaches. Pharmacotherapy should be used cautiously, however, since older adults are more likely to have health problems and suffer more severe side-effects.

Differences exist between older adults whose alcohol problems emerged early versus later in life, and these differences could have an impact on treatment. For example, late-onset alcohol problems are often triggered by life stressors such as loss of a loved one. In such instances, treatment often focuses more on the stressors and less on the drinking patterns.

It should be noted that very little information exists on the treatment of older adults who are solely illicit drug users. If the literature does discuss the treatment of illicit substance use, it is usually in addition to alcohol abuse and/or prescription medication abuse.

1.4 Diagnosis and Training Needs

The literature shows that diagnosis is often difficult because co-morbidity, cognitive deficits associated with chronic medical conditions, and the effects of multiple medications on cognitive processes often mask substance abuse in aging adults. Existing screening tools that were developed for younger populations are often inappropriate for older adults and therefore add to the difficulty of making an accurate substance abuse diagnosis in this population.

Health-care and other professionals working with the elderly could benefit from training to recognize and address substance abuse problems in this population, as well as training in geriatric medicine in order to prevent inappropriate prescribing practices. Family members and older adults themselves could also benefit from education regarding the interaction of various medications with each other, as well as with alcohol.

1.5 Costs Associated with Substance Abuse Among Aging Adults

There is little data-based literature on the costs associated with substance abuse among aging adults. The data-based literature that is available focuses on health-care expenditures related to alcohol abuse. For example, one study estimated that Medicare paid over $233 million in one year for hospital admissions with a primary diagnosis of alcohol. Only one study examined the cost of substance abuse treatment for aging adults. This study found that the cost of care for an age-specific program was approximately 3 percent lower than the cost of a

traditional program, and that those in age-specific care were more likely to be abstinent at follow-up.

2. IMPLICATIONS FOR PRACTICE

A number of studies found in the literature examine treatment approaches for older alcohol abusers. Cognitive-behavioral treatment is one treatment approach that may be effective with older alcohol abusers. Another approach, brief interventions, offers the advantage of being able to be conducted in a variety of settings such as health-care clinics and hospitals where many aging adults are already being treated for their medical problems. Certain pharmacotherapies, such as the use of naltrexone, may also be effective with this population, but the individual's physical health status, current medications, and other individual circumstances should be carefully considered in order to prevent negative side effects. The field may benefit from continued efforts to further develop and implement treatment practices that are appropriate and effective for aging alcohol abusers and to explore new interventions for prescription and illicit drug abusers.

A number of studies indicate that available assessment tools to diagnose substance abuse are often inappropriate for older populations. Because identifying substance abuse among aging adults is difficult, it is important that medical professionals and others who have frequent contact with older adults be trained in assessing and diagnosing substance abuse problems, as well as distinguishing substance abuse problems from physical and mental health problems. These professionals could benefit from training in geriatric health issues and effective techniques for working with this population. Moreover, professionals may want to consider providing aging adults and their families with more education on how to properly manage their prescription regimens and avoid the potential negative side effects of combining prescriptions with over-the-counter drugs and alcohol.

Aging substance abusers often have a myriad of needs in addition to substance abuse treatment. For example, many have physical and mental health problems, are isolated, and have limited resources. For these reasons, it is important that a strong network be created between substance abuse treatment providers, health-care providers, and social service providers in the community. Such linkages can foster better communication between various service systems, ensure appropriate services are being received, and could ultimately lead to better outcomes.

3. IMPLICATIONS FOR POLICY

Although no publications were identified for this literature review that deal specifically with substance abuse policy related to aging adults, many of the findings from the literature have direct policy implications. First, the treatment system must be prepared for increased capacity to treat aging adults because of the expected growth in the number of aging substance abusers in the coming decades. Similarly, in order to meet the wide array of needs of this population (e.g., physical and mental health services, basic needs), policies to encourage collaboration between the treatment community and other service systems for aging adults may deserve further consideration. Strengthening communication and partnering between systems can ultimately lead to improved client outcomes.

Because aging adults often come in contact with health-care professionals, it is important that these individuals are able to distinguish substance abuse problems from physical or mental health problems, and be knowledgeable about effective treatment approaches available. Given the difficulties in diagnosing substance abuse in this population, policies that support geriatric education and training for health-care professionals and others working with the aging may be beneficial. Additionally, training of health-care workers in the areas of geriatric health and medication issues may also help prevent inappropriate prescription practices.

4. IMPLICATIONS FOR RESEARCH/EVALUATION

Due to the relatively small number of treatment outcome studies with older adults, evaluation of treatment effectiveness with this population is a potential area for further exploration. Some of the conventional outcome measures, such as increased employment and reduced criminal behavior, are less appropriate for this population than younger cohorts. Further, evaluation of outcomes over a longer period of time could provide insight into the long-term impact of various treatment services.

Although there is some recognition that older adults are not a homogenous group (e.g., male/female and early/late-onset differences have received some attention), most of the literature treats older adults as a homogenous group. More information is needed to determine if the patterns of use and treatment needs of subgroups of older adults, such as racial and ethnic minorities, differ from the generic group of older adults described in the literature.

Much of what is currently known about aging adults and substance abuse is related to the use of alcohol. Future exploration could focus on the abuse of prescription and over-the-counter drugs by aging adults, both through over-medication and through inappropriate combinations of

medicines and alcohol. As the baby boom generation continues to age, more research/evaluation of illicit drug abuse among this population could benefit the field. Avenues of exploration could include whether the profile of older illicit drug abusers differs from older alcohol abusers, and whether treatment approaches developed for aging alcohol abusers are also effective for aging illicit drug abusers.

There are currently few studies of the costs associated with substance abuse and substance abuse treatment in this population. Most of the information available on this subject focuses on the health-care costs of aging alcohol abusers. Calculating the costs/benefits of treating alcohol and other drug abuse among an older population is complicated by the higher costs of general health-care among aging adults. In addition, cost considerations for this population are different from those associated with younger treatment populations. The societal costs of substance abuse for younger individuals often includes such measures as lost wages and the cost of incarceration. Such social costs may be inappropriate for aging adults, who are often retired and not involved with the criminal justice system, suggesting that other measures may be needed. More study of treatment cost benefits and cost effectiveness could help determine whether, for example, age-specific treatment is more cost effective than mixed-age treatment, or whether specific treatment approaches are more cost effective with the aging population. For example, the cost of providing specialized services for aging adults may be resource intensive, but such costs need to be weighed against the outcomes of these services compared to age-mixed services.

The field is somewhat hampered by the lack of substance abuse screening and diagnostic tools that are age-appropriate and validated for the aging population. Most available screening instruments focus on alcohol and were not designed with the special circumstances of aging adults in mind. Consequently, in order to correctly diagnose substance abuse among older adults, future research could focus on refining existing tools and developing age-appropriate diagnosis and screening tools for substance use and abuse.

Census figures have long predicted that this country will see a greater percentage of older adults in the population in the very near future. The current substance abuse treatment system serves an older population that primarily abuses alcohol, and to a lesser extent prescription and over-the-counter medications. Few of these individuals have had a history of illicit substance abuse. Additionally, these older recipients of treatment come from a generation that, by and large, do not seek treatment services due to shame and the perceived stigma associated with substance abuse. As baby boomers reach older adulthood, they may bring new and different challenges to the substance abuse treatment system. By their sheer numbers alone, the treatment system will likely be faced with an increased demand for treatment. Additionally, unlike the

previous generation, baby boomers are more likely to use illicit substances in addition to alcohol and licit drugs. Moreover, substance abuse treatment has become more widely accepted over the years and therefore this generation may not be as reticent to seek out treatment. Understanding what works currently, as well as the differences between the current and future generations of aging substance abusers, will help the treatment field develop appropriate treatment methods and services to meet future needs.

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APPENDIX
GOVERNMENT PUBLICATIONS ON SUBSTANCE ABUSE AMONG AGING ADULTS

APPENDIX
GOVERNMENT PUBLICATIONS ON SUBSTANCE ABUSE AMONG AGING ADULTS

A number of publications produced by the Substance Abuse and Mental Health Services Administration and its Center for Substance Abuse Treatment offer basic background information and practical guidelines for the assessment and treatment of aging adults. These publications include:

- *Substance abuse among older adults*. CSAT Treatment Improvement Protocol (TIP) Series 26 (Blow, 1998)

- *A guide to substance abuse services for primary care physicians.* CSAT Treatment Improvement Protocol (TIP) Series 24 (Sullivan & Fleming, 1997)

- *Treating alcohol and other drug abusers in rural frontier areas.* CSAT Technical Assistance Publication (TAP) Series 17 (Cowart, 1995). Articles include "Identification and treatment of senior citizens with addiction problems" and "Late-onset alcoholism: Gaining understanding."

- *Promoting older adult health: Aging network partnerships to address medication, alcohol and mental health problems* (SAMHSA, 2002b)

- *The NHSDA report: Substance use among older adults* (SAMHSA, 2001a)

- *The DASIS report: Older adults in substance abuse treatment* (SAMHSA, 2001b)

- *Substance abuse resource guide: Older Americans* (CSAP/SAMHSA, 1997).

Copies of these documents can be downloaded at no cost from the SAMHSA Web site: www.samhsa.gov.