

CHAPTER 3: STRENGTHS AND VULNERABILITIES ASSOCIATED WITH OLDER AGE AND SUBSTANCE USE

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While there are many unknowns about the prevalence and incidence of alcohol and drug use in future older cohorts, some concomitants of the aging process are important to note in the assessment and treatment of older adults.

Age-related Physiological Changes

- ◆ In general, increases in chronological age bring decreases in lean body mass, increases in the percentage of body fat, and decreases in absorption, distribution and disposition of alcohol, drugs and medications (Steiner, 1996).
- ◆ Age-related physical changes serve to increase the effects of alcohol and other drugs on older people (U.S. Department of Health and Human Services, 1998).
- ◆ The various physiological changes associated with aging have a significant impact on an older adult who uses or misuses alcohol or drugs, since these substances can have potentially harmful effects in older adults, even at low levels of consumption (U.S. Department of Health and Human Services, 1998).
- ◆ Age-related pharmacokinetic and pharmacodynamic changes result in an increased sensitivity to alcohol, prescription drugs, over-the-counter drugs, and other substances in older adults.
- ◆ Pharmacokinetics (the process by which drugs are absorbed, distributed, metabolized and eliminated by the body) changes with age and has a significant impact upon the efficacy of prescription drug use in the older person (Dowling, Weiss, & Condon, 2008). Prescription drugs may cause potentially adverse reactions in the individual if the physiological changes of aging are not considered.

The physical changes that accompany aging are important to understand because they often have a direct impact on the effects of alcohol and other drug use in older adults. Because of these metabolic and body composition changes, appropriate

quantities and frequencies of alcohol and various drug use must be evaluated and standardized for older age groups. Alcohol use has a profound physiological effect on older adults because of the decrease in lean body mass versus total body mass, which results in a decrease in total body volume, as well as decreased efficiency of liver enzymes that metabolize alcohol.

Risk of alcohol or drug-related problems may be associated with much lower consumption levels in older adults than in younger populations. However, chronological age is not the only risk factor for the many diseases and problems related to age. Care needs to be taken in designing studies, recruiting appropriate samples, and interpreting data to understand the relationships between age and other factors and risks for particular problems in later life (Kaplan, Haan, & Wallace, 1999).

The Aging Brain

- ◆ Age-related changes in the brain itself, effects of past substance use on the aging brain, and the impact of current substance use on the aging brain are all important for understanding the etiology of substance-related problems in older people (Dowling, Weiss, & Condon, 2008).
- ◆ The literature contains minimal information on how illicit drugs may affect the aging physiological processes; however, there *is* some understanding of how the brain changes throughout the lifespan. This understanding of the brain implies a need for special consideration of the effects and consequences of alcohol and other drug use in older populations (Dowling, Weiss, & Condon, 2008).

The 1990s were declared the decade of the brain. The National Institutes of Health initiatives widely focused on addiction as a brain disease, and researchers and clinicians showed increased interest in neurobiological aspects of the etiology and treatment of substance use disorders (Spence, DiNitto, & Straussner, 2001). These topics will most likely be popular areas of research as the prevalence of substance-related problems among older adults increases and as brain imaging technology improves and becomes more accessible to the research community.

Substance Use and Health among Older Adults

- ◆ As a result of age-related physiological changes, substance use, particularly alcohol use, can trigger or exacerbate medical problems (U.S. Department of Health and Human Services, 1998).

- ◆ There are gender differences in health risks related to alcohol consumption. For example, growing evidence suggests a relationship between alcohol consumption and risk of breast cancer in women (Aronson, 2003).
- ◆ In a study of 211 primary care medical patients, older women were more likely than older men to stop drinking in response to health problems (Satre & Areán, 2005).
- ◆ In a small, unpublished study of people diagnosed with possible or probable Alzheimer's disease, heavy smoking and heavy drinking in middle age were associated with earlier onset of symptoms of dementia (Edelson, 2008).
- ◆ Studies show that long-term illicit drug use, particularly amphetamine and cocaine abuse, may predispose an individual to premature atherosclerosis, ventricular hypertrophy, and cardio-myopathy; these conditions may have severe consequences in an older individual who is already prone to aging-related cardiovascular disease (Dowling, Weiss, & Condon, 2008).
- ◆ With increases in substance use and abuse in older cohorts comes increased risk for HIV/AIDS (Topolski, Gotham, Klinkenberg, O'Neill, & Brooks-Ashley, 2002)..

As a result of the age-related physiological changes, substance use, particularly alcohol use, can trigger or exacerbate medical conditions including an increased risk for hypertension, heart problems, and stroke; impaired immune system and capacity to combat infection and cancer; liver disease; decreased bone density; gastrointestinal bleeding; and malnutrition (U.S. Department of Health and Human Services, 1998). The association between substance use, health, and medical problems among older adults presents issues in assessment, treatment, and prevention for substance abuse professionals. Understanding the complex relationships between substance use, health, and specific medical problems among older adults provides important avenues for intervention and health promotion activities

Among the emerging health issues for addictions professionals working with older adults is HIV infections and AIDS (Emlet & Farkas, 2001). While there is relatively little empirical work on this issue, the need to develop specific educational and treatment strategies to decrease HIV/AIDS risk is well documented (Topolski, Gotham, Klinkenberg, O'Neill, & Brooks-Ashley, 2002).

- ◆ Evidence from a prospective cohort study provides support for the hypothesis that alcohol consumption may be associated with lower risk for coronary disease in older adults (Mukamal et al., 2006).

Another important area for future study includes the relationship between alcohol consumption and cardiovascular health among older adults. Age- and gender-specific

quantity and frequency tables developed from the National Epidemiological Survey on Alcohol and Related Conditions (NESARC) can be used to provide normative feedback to individuals and groups (Chan, Neighbors, Gilson, Larimer, & Marlett, 2007). However, the NIAAA guidelines still suggest one drink per day for all adults over 60.

Drug Interactions

- ◆ Negative interactions between psychoactive medications and alcohol can be harmful for an older person. Benzodiazepines, barbiturates, and antidepressants are particularly hazardous when combined with alcohol because of risk for harmful interactions (U.S. Department of Health and Human Services, 1998).
- ◆ Many psychoactive medications impair alertness and cognitive functioning and may lead to an increase in blood alcohol levels (Moos, Schutte, Brennan, & Moos, 2004). Smoking also compromises the performance of some prescription drugs resulting in a need for a potentially higher dose of psychoactive medication to achieve the same result (U.S. Department of Health and Human Services, 1998).

The interactions between prescribed or over the counter drugs and alcohol or other substances are of particular concern for older adults because of their increased sensitivity and because of their increased use of all types of medications. Inclusion of over-the-counter and prescription drug use is an important aspect of alcohol and other drug screening for older adults.

Social Context of Later Life and Substance Use

- ◆ Sociological changes and context in older adulthood play a critical role in the prevalence of substance use, abuse, and dependence in older adults.
- ◆ Moos, Schutte, Brennan, and Moos (2004) note that life context (such as role changes, loss, or death of loved ones) and coping factors are strongly associated with late-life drinking, though it is not clear whether these sociological effects increase an already present drinking habit or predict a future one.
- ◆ Being divorced or separated, without health insurance, and in relatively poor health are associated with increased rates of nonmedical use of psychotherapeutic drugs (analgesics, stimulants, and sedatives/tranquilizers), according to the National Household Survey on Drug Abuse, 1994-2002 (Zarba, Storr, & Wagner, 2005).

Various sociological changes across the life-span may increase the risk for substance use or abuse. An increase in these changes in older adulthood may play a significant role in assessing an older individual for substance use, misuse, abuse, and/or dependence. Zarba et al. (2005) found that older persons who used alcohol or tobacco were approximately twice as likely as non-users to also have used psychotherapeutic drugs non-medically in the previous year.

A consistent predictor of substance use in later life, particularly alcohol use and abuse, is family and friends' approval of the individual's drinking. Families and friends who promote heavy drinking do so at all stages of the life span. Moos et al. (2004) noted that comparable to recommendations for young adult alcohol users, older individuals "should embed themselves in a social network composed of low- or non-drinking peers" (p. 836).

Sociological changes in later life may also serve as a protective factor, particularly for older women. According to Moos et al. (2004), the frequency of alcohol consumption among older women drinkers declined throughout the 10-year study, and this may be attributed to social circumstances that differ from those of older men; i.e., women are less likely to be married and possibly less likely to participate in social functions where alcohol is available. Cultural issues, including gender, racial/ethnic identification, sexual orientation, and socioeconomic status, all influence the social context of aging and substance use. Sensitivity to these differences and perspectives is important for understanding the social context of aging and working with older adults in the substance abuse treatment arena.

- ◆ Sociological factors include significant cohort effects.

Few studies have assessed the impact of cohort effect on older adults and substance abuse, although many authors and researchers speculate that it plays a significant role in current and future generations of older persons. For example, Moos et al. (2004) found an overall 10-year decline in the alcohol consumption habits of their participants and attributed some influence on these findings to the history (less social acceptance of alcohol use due to prohibition) of the cohort they studied. The challenge will be to separate cohort effects in consumption habits and attitudes from the physiological effects of aging in future studies.

- ◆ Data from a retrospective analysis of the 1996 Medical Expenditure Survey (MEPS) show that a relatively high education level is a common predisposing factor for sedative/hypnotic drug usage among community-dwelling older adults; those with high school degrees including those who went on to obtain undergraduate degrees were more likely to use sedatives and/or hypnotic drugs than were those with no degrees (Aparasu, Mort, & Brandt, 2003).

Later life is a time of many physiological and social changes. These changes may impact decisions to use or to stop using alcohol and other drugs. The balance of social forces in the lives of older adults can be important in understanding the use of substances, the motivation for treatment, and the support to foster recovery.

Changes in sensory ability and the presence of sensory impairments can also limit social resources in later life. Hearing or vision loss can be mistaken for dementia or depression and need to be evaluated. Hearing or vision loss can affect assessment as well as treatment participation among older adults.

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Curriculum Resources

The following resources include recommended key curriculum resources, course readings, and Web resources.

Suggested Readings:



- Dowling, G., Weiss, S., & Condon, T. (2008). Drugs of abuse and the aging brain. *Neuropsychopharmacology*, 33, 209-218.
Dowling, Weiss & Condon present an overview of both age-related brain changes as well as drug-related brain changes. It is an excellent, but challenging, discussion of the important aspect of neurophysiology in both addictions and aging.
- Kaplan, G., Haan, M., & Wallace, R. (1999). Understanding changing risk factor associations with increasing age in adults. *Annual Review of Public Health*, 20, 89-108.
This review article is not about addictions, but presents issues of age-related risks and common diseases in older people. Given the view of addiction as a chronic disease, addictions specialists will find it useful to know more about age-related physiologic and metabolic changes among older adults.

Web Resources:



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

This document provides an outstanding summary of current research about risks, research, and evidence-based interventions related to alcohol, tobacco, and drug use in older adults. See full document or “Alcohol Misuse Section” or “Medication Misuse Section” for highlights of correlates and consequences of alcohol, tobacco and other drug use. Free from the Older Americans Substance Abuse and Mental Health Technical Assistance Center: <http://www.samhsa.gov/OlderAdultsTAC/>.