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Just Say Know: An Examination of Substance Use Disorders among Older Adults in Gerontological and Substance Abuse Journals

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Abstract

This article examines the extent to which studies of alcohol abuse, illicit drug use, and prescription drug abuse among older adults appear in the leading gerontological and substance abuse journals. The authors reviewed articles published in the 10 social science gerontological journals and the 10 social science substance abuse journals with the highest 5-year impact factors in PubMed from 2000 to 2010. Articles were selected that presented original research on alcohol, substance, or prescription abuse with older adults aged 50 and older; and were identified through aging and substance abuse-related Medical Subject Headings and word searches of titles and abstracts ($N = 634$). Full text of each article was reviewed by the authors, and consensus determined inclusion in

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the final sample. Of the 19,953 articles published respectively in the top 10 gerontological and substance abuse journals, 181 articles met the inclusion criteria of reporting findings related to substance use disorders among older adults. Specifically, 0.9% (102 of 11,700) of articles from the top 10 gerontology journals and 1.0% (79 of 8,253) of articles from the top 10 substance abuse journals met the criteria. Most published articles addressed alcohol misuse/abuse or polysubstance abuse with few articles addressing illicit drug use or the misuse of prescription medications. Less than 1% of articles published in the 10 gerontology journals and the 10 substance abuse journals with the highest 5-year impact scores addressed substance abuse in older adults. Practitioners treating health and/or mental health problems are at a disadvantage in accurately identifying and treating these conditions in older adult populations without a proper understanding of the role of comorbid substance use disorders.

Keywords

Older adults; substance-related disorders; alcohol-related disorders; bibliometric analysis; prescription drug abuse; addiction

INTRODUCTION

In 1999, the U.S. surgeon general issued a call to action to generate knowledge on mental health and substance abuse disorders (U.S. Dept of Health & Human Services, 1999). Since that time, the gerontological canon has seen a burgeoning literature develop on the biological, neurological, and psychosocial impact of mental health disorders among older adults. Yet substance and alcohol use disorders and related treatment modalities have not received the same attention within leading gerontology journals (Wu & Blazer, 2011).

Older adults represent a growing at-risk population group for substance use disorders (SUDs). In 2000, an estimated 568,000 persons age 55 or older had used illicit drugs in the past month and more than 5 million were “binge” alcohol users (Substance Abuse and Mental Health Services Administration [SAMHSA], 2001). Projections are that the number of adults age 50 and older with an alcohol or SUD will double to 5.7 million by 2020 (Han, Gfroerer, Colliver, & Penne, 2009), and that the proportion of this age group using illegal substances and using prescription drugs for nonmedical purposes will substantially increase (Colliver, Compton, Gfroerer, & Condon, 2006). The percentage of adults age 55 and older with a first-time admission to substance abuse treatment has increased by nearly 65% in 11 years, with a reported 5.51% in 1998 growing to 9.09% in 2008 (Arndt, Clayton, & Schultz, 2011). Concomitantly, the population of older adults seeking treatment mentioning alcohol alone or in combination with other drugs has declined whereas the proportion mentioning illicit drugs only has grown (Arndt et al., 2011). These older adults differ in important ways from younger adult admissions in their clinical presentation and needs (Arndt, Gunter, & Acion, 2005).

Older adults are at particular risk for negative health outcomes from SUDs including falls, hypertension, cancer, early onset dementia, cognitive deficits, and a host of chronic medical health conditions (Coulton et al., 2008; Rosen, Hunsaker, Albert, Cornelius, & Reynolds, 2011). The additional burden of comorbid mental health disorders associated with SUDs

further complicates effective diagnosis and treatment. Of particular concern are the trends in the last decade of increasing analgesic abuse among older adults and their effect on morbidity and mortality (Kalapatapu & Sullivan, 2010).

In past decades, there was little discussion about older adults abusing alcohol and the misuse of prescription drugs, let alone substance abuse (Atkinson, 1990; Benshoff, Harrawood, & Kock, 2003; Minnis, 1988). This is of particular concern for the social work profession that is addressing an aging population. Often, social workers will come into contact with an aging population outside of traditional substance abuse service settings. The ability to screen for and refer to appropriate substance abuse services for older adults is a critical skill for social workers addressing an aging population in the United States. Social workers employed in traditional substance abuse settings will also need to have the knowledge and skills to treat an older adult population.

The Surgeon General's 1999 report was a deliberate attempt by the National Institutes of Health (NIH) and the Substance Abuse and Mental Health Services Administration (SAMHSA) to chart a course for the next decade on "illnesses of the mind." Has this clarion call been answered? The goal of this article is to assess the extent to which issues related to alcohol and illicit drug use is addressed in the social work, gerontological, and substance abuse literature. Specifically, we examine the degree to which studies of alcohol abuse, illicit drug use, and prescription drug abuse among older adults appears in the leading social work, gerontological, and substance abuse journals and whether the rate of publication has increased in the decade since the surgeon general's report.

METHOD

Data Sources

Publications were retrieved for the 10 social work journals, 10 social science gerontological journals, and the 10 social science substance abuse journals with the highest 5-year impact factors for 2009, according to Journal Citation Reports. Gerontological journals, in ranked order, included the *Journal of the American Geriatrics Society*, *Psychology and Aging*, *American Journal of Geriatric Psychiatry*, *Journals of Gerontology, Series A: Biological Sciences and Medical Sciences*, *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, *The Gerontologist*, *International Psychogeriatrics*, *International Journal of Geriatric Psychiatry*, *Journal of Aging and Physical Activity*, and *Journal of Aging and Health*. Substance abuse journals included *Addiction*, *Psychology of Addictive Behaviors*, *Journal of Substance Abuse Treatment*, *Journal of Studies on Alcohol and Drugs*, *Addictive Behaviors*, *Alcohol Research & Health*, *Drug and Alcohol Review*, *The American Journal on Addictions*, *Journal of Addictive Diseases*, and *The American Journal of Drug and Alcohol Abuse*. The *Journal of Gambling Studies*, ranked 9, was replaced by *The American Journal of Drug and Alcohol Abuse*, ranked 11, given the former's narrow focus on gambling-related issues.

Publications for the social work journals were excluded that had a child welfare focus (*Child Abuse and Neglect*, *Child Maltreatment*, *Children and Youth Service Review*, *Child Welfare*), predominantly included manuscripts outside of the United States (*Health and*

Social Care in the Community, *Journal of Social Policy*, *British Journal of Social Work*) or were psychology journals (*American Journal of Community Psychology*, *Journal of Community Psychology*). The final sample of journals searched included *Family Relations*, *Social Work*, *Research on Social Work Practice*, *Social Service Review*, *Health and Social Work*, *Social Policy & Administration*, *Journal of Social Work Education*, *Administration in Social Work*, *Social Work in Health Care*, and *Families in Society*. From searches in these journals conducted through PubMed and on each journal website, a total of five articles were located that focused on substance abuse among older adults. The small number of articles within social work journals led us to omit these articles from our analyses. The focus of the inquiry turned to the two literatures, substance abuse and gerontology, that we felt social works would turn to in an attempt to understand older adult substance abuse issues.

Study Selection

Data were obtained for these journals from PubMed (the National Library of Medicine) and included all research articles with abstracts published from January 1, 2000 to December 31, 2010. A total of 11,944 citations were retrieved from gerontological journals whereas 8,438 citations were retrieved from substance abuse journals. Figures 1 and 2 illustrate the selection process. The total number of citations was reduced by limiting the sample to articles with abstracts and under the article types, Clinical Trial, Meta-Analysis, Practice Guideline, Randomized Controlled Trial, Journal Article, or Multicenter Trial. Citations described as book reviews, editorials, and letters to the editor were excluded. In addition, as PubMed included citations that were electronically published in advance of their paper publication date, those articles with paper publication dates later than December 31, 2010 were removed from the sample. Implementing these inclusion criteria produced final samples of 11,700 gerontological journal citations and 8,253 substance abuse journal citations.

The key variable for this analysis is whether a journal citation addressed alcohol abuse, substance abuse, or the misuse of prescription drugs by older adults age 50 and older. The decision to focus on individuals age 50 or older is consistent with the age-cohort cutoff utilized by reports for the National Institute of Drug Abuse (NIDA; Han, Gfroerer, & Collier, 2009; SAMHSA, 2001).

The following steps were used to create this variable. First, the aging-related Medical Subject Headings (MeSH) *Aged*, *Aged 80 and over*, and *Aging* were used to identify aging-oriented articles in both sets of journals. A total of 10,781 aging journal articles and 813 substance abuse journal articles were identified by aging-related MeSH.

Next, substance-abuse related MeSH terms were used to identify articles on substance-related disorders and included Substance Abuse Detection; Substance Abuse Treatment Centers; United States Substance Abuse and Mental Health Services Administration; National Institute on Drug Abuse (U.S.); National Institute on Alcohol Abuse and Alcoholism; Substance-Related Disorders; Alcohol-Related Disorders; Alcohol-Induced Disorders; Alcoholic Intoxication; Alcoholism; Amphetamine-Related Disorders; Cocaine-Related Disorders; Inhalant Abuse; Marijuana Abuse; Opioid-Related Disorders; Heroin Dependence; Morphine Dependence; Phencyclidine Abuse; Substance Abuse, Intravenous;

Street Drugs; Crack Cocaine; and Designer Drugs. To better capture articles on prescription misuse, the MeSH term *Health Services Misuse paired with Pharmaceutical Services, Pharmaceutical Preparations or Prescription Drugs* was also included in the search protocol. A total of 5,824 substance abuse journal citations and 101 gerontological journal citations were identified with substance-abuse related MeSH terms. After combining the results from the two searches, there were 511 substance abuse journal articles and 96 aging journal articles that included aging and substance abuse MeSH terms.

In addition to using MeSH terms to identify articles, the titles and abstracts of articles were searched using aging-related terms within the substance abuse journals and substance-abuse related terms in the gerontological journals. Aging-related search terms included *aged, aging, elder, late life, older, and senior*. Substance abuse-related search terms included *abuse, addict, alcohol, amphetamine, benzodiazepine, crack, cocaine, drug, heroin, illegal, illicit, marijuana, methadone, misuse, morphine, opiate, opioid, pharmaceutical, phencyclidine, prescription, and substance*. Using these search methods, we identified an additional 15 substance abuse journal articles and 22 gerontological journal articles.

Based on these search methods, we identified a total of 526 substance abuse journal citations and 118 gerontological journal citations for our review. Article titles and abstracts were first examined by the authors and the following inclusion criteria were applied to determine whether the article was inclusive of older adults: (a) the sample wholly comprised individuals age 50 and older, (b) a disaggregated subsample of older adults was presented in the research findings, or (c) the article used longitudinal data to present aging-related findings. Next, we applied four criteria to determine whether each article was inclusive of substance abuse content: (a) participants in the study were alcohol, substance and/or medication abusers; (b) the research did not control for any type of alcohol, substance or medication abuse in the study; (c) the main findings of the study were related to alcohol, substance or medication abuse; and (d) the primary issue of interest was not gambling or tobacco smoking/use.

Of the 526 substance abuse journal citations, 393 were excluded, 23 met the above criteria, and 110 could not be included or excluded without further review. Of the 118 gerontological journal articles, 74 met the criteria and 44 could not be included or excluded without additional examination. To assess the status of the inconclusive substance abuse and gerontological journal articles, the full article texts were reviewed by the authors, applying the above criteria and consensus agreement as to whether the articles would be included in the final sample. Among the substance abuse journals, 56 met the study criteria for inclusion in the final sample and 54 articles were excluded, resulting in a final sample of 79 articles. Among the gerontological journals, 28 articles met the study criteria and 16 articles were excluded, resulting in a final sample of 102 articles. Additionally, the references of two recent review articles (Moy, Crome, Crome, & Fisher, 2011; Wu & Blazer, 2011) of illicit and nonmedical drug use and treatment among older adults were searched to confirm the content of the final samples.

Data Extraction

Once the final sample for each set of journals was determined, we grouped the articles by type of substance use (alcohol, illicit drug use, prescription misuse or polysubstance use) for analysis. Finally, we identified the funding sources for each article through a review of the article text or in queries sent to the principal author of the article. Funding sources were categorized by type of funding and included NIH, SAMHSA, U.S. Department of Veteran's Affairs, international, and other types of funding.

RESULTS

Table 1 provides the summary of articles on SUDs among older adults from the years 2000 through 2010. Of the 19,953 articles published in top 10 gerontological and substance abuse journals, 181 articles met the inclusion criteria of reporting findings related to SUDs among older adults. Specifically, 0.9% (102 of 11,700) of articles from the top 10 gerontology journals and 1.0% (79 of 8,253) of articles in the top 10 substance abuse journals met the criteria.

The percentage of articles devoted to SUDs among older adults has remained relatively uniform. Within the gerontological literature, the percentage of substance abuse articles ranged from 0.7% (four articles) in 2000 to 1.2% (12 articles) in 2010; the peak percentage was 1.6% (10 articles) in 2003. A similar pattern exists for the percentage of articles identified in the substance abuse journals related to older adults with .6% (five articles) published in 2000 and 1.4% (18 articles) published in 2009.

Table 2 provides publication percentages and the focus of the articles for the top ten gerontology journals. Three journals (*Journal of American Geriatrics Society*, *American Journal of Geriatric Psychiatry*, and *International Journal of Geriatric Psychiatry*) accounted for more than three fourths (76.5%) of the articles published in the top 10 journals. The *American Journal of Geriatric Psychiatry* had the highest number of articles and percentage of articles with 2.8% ($n = 28$) of their 815 articles focusing on older adult SUDs. Two journals, *Psychology and Aging* and the *Journal of Aging and Physical Activity*, had no published articles related to SUDs during the 11 years under review.

Nearly two thirds (65.7%) of the 102 articles appearing in the gerontology journals focused on alcohol-related problems. Polysubstance abuse accounted for slightly less than one fourth (24.5%) of the articles with relatively few articles on either illicit drug use or the nonmedical use of prescription drugs. Four of the 10 journals did not publish a single article on either illicit drug use or the nonmedical use of prescription drugs.

Table 3 presents analogous information on the types of articles related to aging published in the top ten substance abuse journals. The journal *Addiction* accounted for more than one third (35.4%, $n = 28$) of the articles published in the top 10 substance abuse journals. Eight of the top 10 journals published 10 or fewer articles over the 11-year period.

In a pattern similar to the top gerontology journals, over two thirds (67.1%, $n = 53$) of the articles focused on problem alcohol use among older adults with another 18 articles (22.8%)

addressing polysubstance abuse. There were few articles addressing illicit drug use ($n = 7$) and nonprescription use of prescription medication ($n = 1$). In the 11-year period under review, only one of the top 10 substance abuse journals published an article on prescription drug abuse and only five of the top 10 journals published at least one article on illicit drug use among older adults.

Funding for studies on older adults and SUDs was primarily initiated by the NIH (see Figure 3). Slightly more than one half (51.9%) of the articles on aging and substance abuse were funded by the NIH compared to slightly less than one half (42.2%) of similar articles in the gerontology journals. Of particular note is that over one third (36.3%) of the gerontology journal articles and one fourth (24.1%) of the substance abuse journal articles were funded outside of the United States.

COMMENTS

For social workers interested in learning more about substance abuse issues among older adults there were virtually no articles in the leading relevant social work journals in a 10-year period. Turning to the discipline specific literature of gerontology and substance abuse that social workers rely on, less than 1% of articles published in the 10 aging journals with the highest 5-year impact scores and 10 substance abuse journals with the highest 5-year impact scores addressed substance abuse by adults age 50 and older. The publication rate has been fairly flat during the 11 years since the publication of the 1999 surgeon general report. Most published articles addressed alcohol misuse/abuse or polysubstance abuse with few articles addressing illicit drug use or the misuse of prescription medications. In sum, these findings suggest that social work, aging, and substance abuse continue to be neglected in the leading gerontology and substance abuse journals.

Why the lack of published scholarship? In the past, various reasons were offered to explain this dearth of work. One argument was that alcohol and substance abuse were not perceived as problems associated with older adults; Winick (1962) argued that people aged out of substance abuse whereas Drew (1968) suggested that the risk of alcohol abuse was quite low for people older than age 40. Such ageist biases may have driven the lack of research (SAMHSA, 1998).

It also had been argued that older adults and/or their families underreported alcohol and substance abuse because of the shame and stigma associated with abuse, or families confused abuse with other conditions (SAMHSA, 1998). Along with a lack of appropriate screening tools for older adults, social workers, doctors, and other formal providers are less likely to identify SUDs that would lessen the demand for research and treatment.

A third explanation was that the federal government's interests were focused on younger age cohorts. Therefore, the federal government put their resources in research related to specific age cohorts and specific types of drugs believed not to be used by the elderly, such as cocaine and heroin (Atkinson, 1990; Benshoff et al., 2003). Ironically, recent reports show that the use of illicit drugs among older adults is growing (Arndt et al., 2011).

Alternatively, concerns about alcohol and substance abuse may be inconsistent with the missions of particular journals. If this were the case, then it would be reasonable for such journals to have no articles about aging and substance abuse. Even if the two journals (*Psychology and Aging* and *Journal of Aging and Physical Activity*) with no alcohol and/or substance abuse-related articles were deleted from the study population, the overall publication percentage only increases by one hundredth of a percent from 0.95% to 0.96%, and the publication percentage for only gerontology journals increases from 0.90% to .95%. Yet the mission statements of the two journals are sufficiently broad to suggest that substance abuse is an appropriate topic.

These explanations fly in the face of the state of current knowledge and practice. The number of older adults abusing alcohol, illicit substances, and prescription medications is growing, as is the number of older adults seeking treatment. Further there is governmental funding available for research efforts. If not ageism, perhaps the lack of research and published scholarship is a consequence of years of neglect in which newer researchers lacked mentors or support for such research. It might also be attributed to a lack of connection between research and practice.

Whatever the reason, alcohol abuse, substance abuse, and the misuse of prescription drugs are issues demanding greater attention. There is available government funding for support of research efforts. There are many existing data sets available for analysis about prevalence and trends (Gum, King-Kallimanis, & Kohn, 2009; Lin et al., 2011). Some data sets use samples of the general population while some are age-specific, focusing on older adults. The National Institute of Alcohol Abuse and Alcoholism publishes a summary of available data sets, Alcohol Epidemiologic Data Directory, whereas SAMHSA provides an online data base archive. Substance abuse and its co-occurrence with mental health and physical health may be a relevant area of study for researchers who have these other conditions as a primary focus.

There are several limitations to this study. The decision to use the top 10 journals in each subject area was arbitrary, and it might be argued that if the list had been expanded, there might have been a different outcome. The Journal Citation Reports database includes 30 journals under the gerontology subject heading and 29 journals under the substance abuse heading. Therefore, it is possible we underestimated the prevalence of articles if that work is disproportionately published in the remaining 39 journals with lower 5-year impact scores. We suspect that actually the percentage of published articles would have declined if more journals had been included. Wu and Blazer's review (2011) included only one article from a journal on the Journal Citation Reports list that was not included in this study's journal list, and none of the other 38 JCR journals was cited. What we do not know is whether a similar pattern would have occurred for studies on alcohol abuse.

Another challenge involved using the Medical Subject Heading terms. There was no unique term for misuse of prescription drugs. The articles that we found on prescription misuse were mainly coded with a MeSH term *Substance-related Disorders* and then the type of drug as an additional MeSH term. Therefore, locating the body of research on prescription

abuse may be more difficult than other types of substance abuse and it is possible we missed articles on this topic.

The burgeoning older adult population in the United States requires a greater attention to SUDs among older adults. Social work practitioners treating health and/or mental health problems are at a disadvantage in accurately identifying and treating these conditions in older adult populations without a proper understanding of the role of comorbid SUDs. The top tier journals in social work, gerontology, and substance abuse play an essential role in defining the direction of the field. The omission of a well-developed literature is puzzling, given the current state and projected increase of older adults in need of alcohol and SUDs treatment and will need to be addressed in the coming years.

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FIGURE 1.
Substance abuse journals.

1. Articles extracted from PubMed

2. Initial article pool identified via:

- MeSH term searches
- Word searches of titles and abstracts

3. Article review:

- Inclusion criteria applied to abstract to identify relevant articles
- Full text of articles with inconclusive relevance reviewed by authors applying inclusion criteria
- Consensus agreement to determine inclusion for final sample

FIGURE 2.
Gerontology journals.

FIGURE 3.

Percent of articles on substance abuse and aging receiving each type of funding. Percentages for aging and substance abuse journals sum to greater than 100% due to multiple sources of funding. NIH D National Institutes of Health; SAMHSA D U.S. Substance Abuse and Mental Health Services Administration; VA D U.S. Department of Veterans Affairs; SA D substance abuse.

TABLE 1

Number and Percentage of Articles Focusing on Older Adults and Substance Use Disorders by Year

Year	Substance Use Journals, n (%)		Gerontology Journals, n (%)	
	No	Yes	No	Yes
2000	530 (98.9)	4 (0.7)	850 (99.4)	5 (0.6)
2001	459 (98.9)	5 (1.1)	882 (99.4)	5 (0.6)
2002	512 (99.0)	5 (1.0)	937 (98.7)	12 (1.3)
2003	631 (98.4)	10 (1.6)	947 (99.4)	6 (0.6)
2004	644 (98.9)	7 (1.1)	937 (99.3)	7 (0.7)
2005	652 (99.1)	6 (0.9)	1,198 (98.9)	13 (1.1)
2006	827 (99.3)	6 (0.7)	1,033 (99.4)	6 (0.6)
2007	1,061 (99.3)	8 (0.7)	1,123 (99.3)	8 (0.7)
2008	944 (99.4)	6 (0.6)	1,183 (99.3)	8 (0.7)
2009	925 (98.9)	10 (1.1)	1,236 (98.6)	18 (1.4)
2010	989 (98.8)	12 (1.2)	1,272 (98.9)	14 (1.1)
Total	8,174 (99.0)	79 (1.0)	11,598 (99.1)	102 (0.9)

TABLE 2
Summary of Substance Use Disorder (SUD) Topics for Older Adults by Gerontology Journal

Journal Title	Total Articles	Total SUD Articles, n (%)	Alcohol Abuse, n	Illicit Drug Abuse, n	Prescription Drug Abuse, n	Poly-substance Abuse, n
<i>Journal of American Geriatrics Society</i>	2,945	24 (0.8%)	18	0	4	2
<i>Psychology and Aging</i>	815	0	0	0	0	0
<i>The American Journal of Geriatric Psychiatry</i>	995	28 (2.8%)	15	2	0	11
<i>The Journals of Gerontology, Series A</i>	1,896	2 (0.1%)	2	0	0	0
<i>The Journals of Gerontology, Series B</i>	968	3 (0.3%)	2	0	0	1
<i>The Gerontologist</i>	923	5 (0.5%)	0	2	0	3
<i>International Psychogeriatrics</i>	807	10 (1.2%)	4	1	1	4
<i>International Journal of Geriatric Psychiatry</i>	1,703	26 (1.5%)	23	0	0	3
<i>Journal of Aging and Physical Activity</i>	204	0	0	0	0	0
<i>Journal of Aging and Health</i>	444	4 (0.9%)	3	0	0	1
Total	11,598	102 (0.9%)	67	5	5	25
SUD area focus, %		65.7	4.9	4.9		24.5

TABLE 3
Summary of Substance Use Disorder (SUD) Topics for Older Adults by Substance Abuse Journal

Journal Title	Total Articles	Total SUD Articles, n (%)	Alcohol Abuse, n	Illicit Drug Abuse, n	Prescription Drug Abuse, n	Poly-substance Abuse, n
<i>Addiction</i>	1,939	28 (1.4)	23	2	0	3
<i>Psychology of Addictive Behaviors</i>	658	3 (0.5)	2	0	0	1
<i>Journal of Substance Abuse Treatment</i>	953	10 (1.0)	6	1	0	3
<i>Journal of Studies on Alcohol and Drugs</i>	436	14 (3.2)	13	0	0	1
<i>Addictive Behavior</i>	1,851	9 (0.5)	6	0	0	3
<i>Alcohol Research and Health</i>	172	1 (0.6)	1	0	0	0
<i>Drug and Alcohol Review</i>	634	5 (0.8)	1	2	0	2
<i>American Journal of Addiction</i>	576	4 (0.7)	1	0	1	2
<i>Journal of Addictive Disorders</i>	413	2 (0.5)	0	2	0	0
<i>American Journal of Drug and Alcohol Abuse</i>	621	3 (0.5)	0	0	0	3
Total	8,253	79 (1.0)	53	7	1	18
SUD area focus, %			67.1	8.9	1.3	22.8