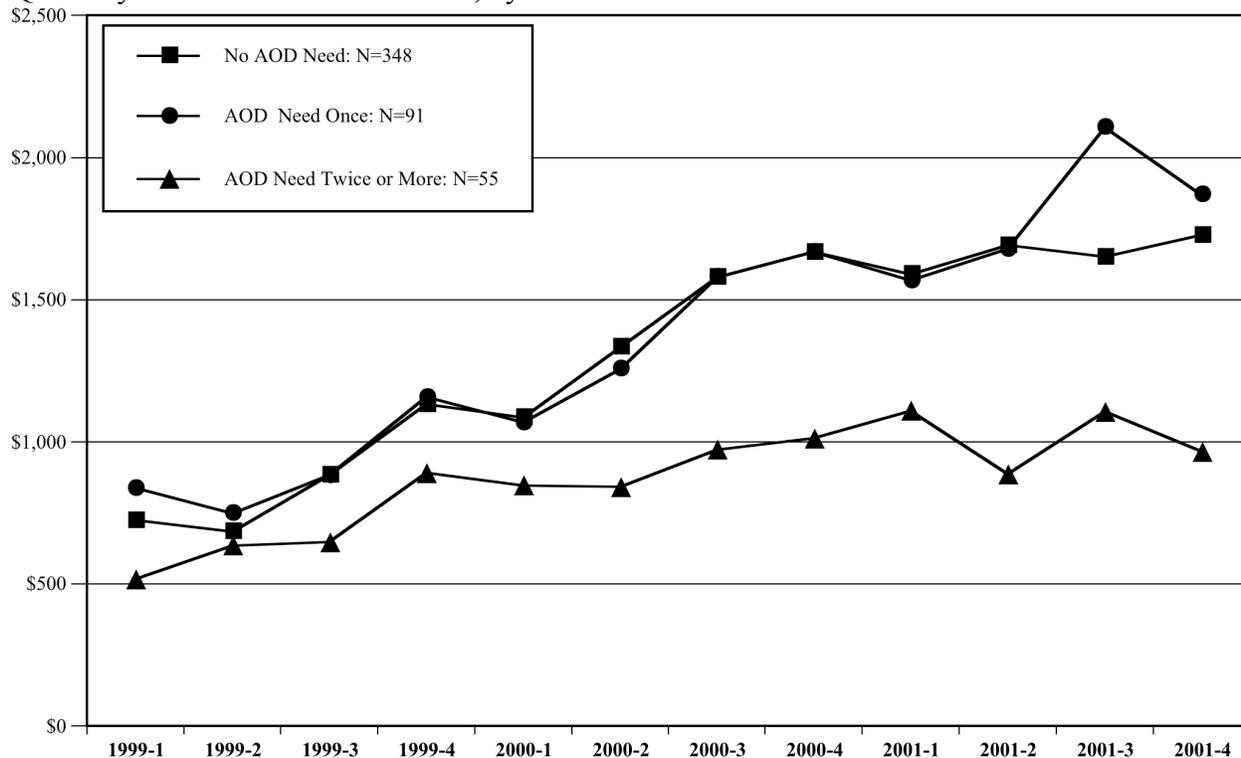


Figure 1
Quarterly earned income 1999-2001, by need for AOD services



Note: AOD stands for “alcohol and other drugs.” Need for AOD services was assessed at each of three interview waves. Graph includes participants present in all three waves. Zeroes are included.

Table 4
Odds ratios from logistic regression of working at least 20 or alternatively 32 hours, by AOD need

	Model A: Worked at least 20 hours a week OR (95% CI)	Model B: Worked at least 32 hours a week OR (95% CI)
Needed AOD services in year	0.49 (0.26 - 0.93)**	0.6 (0.30 - 1.19)
Functional health problems	0.46 (0.29 - 0.71)***	0.55 (0.34 - 0.89)**
Race is African American	1.84 (1.09 - 3.10)**	2.48 (1.47 - 4.17)***
Did not finish high school	0.56 (0.38 - 0.85)***	0.71 (0.46 - 1.09)
Learning disability	0.77 (0.40 - 1.50)	0.53 (0.25 - 1.12)*
Three or fewer of 9 work skills	0.67 (0.42 - 1.07)*	0.6 (0.36 - 1.00)*
No home of own during year	0.48 (0.30 - 0.75)***	0.51 (0.32 - 0.83)***
Child under 3 years	0.67 (0.44 - 1.00)*	0.57 (0.37 - 0.89)**
Lack of child care interferes with work	0.53 (0.31 - 0.93)**	0.49 (0.27 - 0.90)**
County is Kern	0.47 (0.31 - 0.72)***	0.47 (0.30 - 0.72)***
Psychiatric impairment	0.29 (0.14 - 0.60)***	0.37 (0.17 - 0.82)**
No driver's license	0.56 (0.37 - 0.83)***	0.54 (0.35 - 0.83)***
Observations	544	544

Note: AOD stands for "alcohol and other drugs." Two models are compared. Model A takes as the dependent variable working 20 or more hours per week at the time of the wave 2 interview; Model B uses working 32 or more hours a week as the dependent variable. The 95% confidence intervals (CI) for the odds ratios are in parentheses.

* $p \leq 0.10$

** $p \leq 0.05$

*** $p \leq 0.01$

Table 3

Bivariate association of employment measures with AOD service needs

Employment Measures	Needed AOD Services N (%)	Did Not Need AOD services N (%)
Worked at all during the prior year:		
Wave 2	42 (62.7)*	334 (73.7)
Wave 3	60 (82.2)	323 (76.7)
Worked at least 20 hours a week at interview		
Wave 2	17 (24.6)***	221 (46.5)
Wave 3	34 (45.3)	207 (47.6)
Worked at least 32 hours a week at interview		
Wave 2	13 (18.8)**	165 (34.7)
Wave 3	24 (32.0)	167 (38.4)
Lost a job during the year		
Wave 2	20 (29.0)*	91 (19.2)
Wave 3	22 (29.3)*	88 (20.2)
Fired from job during the year		
Wave 2 (Fisher's exact test)	6 (8.7)***	8 (1.7)
Wave 3 (Fisher's exact test)	2 (2.7)	12 (2.7)
Median weeks worked during year prior to interview if worked at all		
Wave 2	32.0	30.5
Wave 3	24.0***	40.0
Median hourly wage if worked (in dollars)		
Wave 2	\$6.25	\$6.47
Wave 3	\$7.00	\$7.55
Median increase in earnings from wave 2 to wave 3	\$647.79*	\$1,512.36

Note: AOD stands for "alcohol and other drugs." Numbers followed by a number in parentheses are the N and percentage, respectively; a number by itself is a median. Statistical tests are chi-square for percentages. Fisher's exact test is used when Ns in cells are less than 5. The Wilcoxon rank sum test is used for medians.

* $p \leq 0.10$

** $p \leq 0.05$

*** $p \leq 0.01$

Table 2
Major categories of AOD prevalence, by year of interview

	1999 N=632	2000 N=544	2001 N=552
Alcohol dependence	5.2	3.1	3.6
Alcohol abuse	2.7	1.9	1.1
Alcohol abuse or dependence	7.9	5.1	4.7
Drug dependence	5.4	3.1	3.1
Drug abuse	1.1	1.4	1.1
Drug Abuse or Dependence	6.2	4.5	4.2
Any dependence	8.9	5.2	6.0
Any abuse	3.6	3.1	2.0
Any abuse or dependence	11.6	7.8	7.6
Any illicit drug (used 5 times in year in wave 1; at least once in year in wave 2 or wave 3)	20.1	18.8	13.4
Use of alcohol or drugs interfered with work (self-report)	1.0	1.9	1.8
Interviewer rated respondent as under the influence	2.8	2.6	2.9
Self-reported unmet need for AOD service in year prior to survey	1.6	1.8	2.2
Received AOD service in year prior to survey	6.8	5.6	6.2
Needed AOD service in year prior to survey (abuse or dependence, or job interference, or unmet service need, or received specialty services)	17.2	13.1	14.7

Note: AOD stands for “alcohol and other drugs.” All numbers are percentages.

Table 1

Demographic characteristics and barriers to employment at wave 1

Participant Characteristics (N=632)	Percentage
Over age 35	31.6
Education	
At least some college	23.5
High school diploma	35.1
9th – 11th grade	35.4
Less than 8th grade	6.0
Race and ethnicity	
White	40.2
Hispanic	37.3
African-American	14.9
Other	7.6
Impaired psychiatric functioning at least 5 of 30 days prior to wave 1 interview	16.9
Serious domestic violence in year prior to wave 1 interview	24.5
Alcohol or other drug dependence or abuse diagnosis	11.6
Functional health problems in 14 days prior to wave 1 interview	23.6
Child under 3 years	35.9
Very low self-esteem	16.5
Difficulties with English	3.2
Learning disabled or was in special education	20.9
Child care problems	28.3
Perceived work discrimination	7.9
Three or fewer of 9 work skills	30.1
Spent time in jail or prison in year prior to wave 1 interview	2.8
Did not work in 12 months prior to wave 1 interview	35.3
No driver's license	46.3
No home of own sometime during year prior to wave 1 interview	20.9

Notes

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1. Wave 2: 14.5 percent vs. 7.6 percent; $\chi^2=3.72$, $df=1$, $p\leq 0.054$; wave 3: 14.7 percent vs. 7.9 percent; $\chi^2=3.65$, $df=1$, $p\leq 0.056$. Note that throughout tests of statistical significance are two-sided.
2. Mean number of spells=2.20 if no AOD need; 2.24 if need in one wave; 2.44 if need in two or three waves; ANOVA $F=2.65$, between $df=2$, within $df=194$, $p\leq 0.073$.
3. Results are not shown. The final logistic regression model included AOD service need, county, domestic violence, psychiatric impairment, time spent in jail during prior year, race, health problems, child under 3, lack of child care, 3 or fewer critical work skills, no driver's license, and did not work during the year prior the wave 1.
4. Results are not shown. The Alameda County study also found statistical significance in relationship to employment was limited to the interaction of substance abuse and jail history (Driscoll, Speigman and Norris 2000). We modeled the predictors of weeks worked (using the statistical package Stata) over the three years combined using Maximum-likelihood generalized ordered regression. We took account of the fact that multiple observations on each individual were recorded by using Stata's cluster option. The final regression model included AOD service need, time spent in jail, the interaction of jail time and AOD need, county, the interview wave, psychiatric impairment, low self-esteem in any year, difficulty with English, race, health problems, having a child under 3, having been homeless during the year, 3 or fewer critical work skills, and lack of a driver's license.

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leaving for "negative" reasons, such as being sanctioned, and if welfare staff focused on participants cycling back on to welfare after leaving.

While showing that AOD problems have pervasive effects, these findings (like those in most other studies of the impact of AOD in welfare reform populations) do not lead to the conclusion that AOD use and abuse, or even dependence, are inevitably associated with failure to achieve the goals of welfare reform. The considerable impact of AOD problems on a significant proportion of the TANF population does, however, support the continuation and expansion of the efforts made in some states and localities to identify and treat those facing serious AOD problems. As a rule of thumb, we suggest that the percentage who should be offered treatment falls somewhere between the 6 percent of TANF recipients actually being served in Stanislaus County and Kern County and the roughly 15 percent we judged to need such services.

reported having to use a food bank that year; among those with no AOD needs that figure was 24 percent.

Participants with AOD needs also have a number of problematic situational factors (child care, health, low self-esteem, transportation) and human capital deficits (lacking a high school diploma, lack of work skills, and experience). In wave 1, those with no AOD service needs had a mean of 5.0 out of 16 barriers (listed in table 1). Those with AOD needs had a mean of 5.5 barriers, not counting the AOD problems. As both the Women's Employment Study (Danziger et al. 2000) and data from the current study (Chandler, Meisel, and Jordan. 2002*a*) reveal, there is a virtually linear relationship between number of barriers and likelihood of not working. TANF participants with AOD problems are at triple jeopardy: from their AOD problem, from the higher number of other barriers they experience, and from the difficulty that AOD problems pose in addressing the other barriers (Chandler, Meisel, and Jordan. 2002*b*).

Stanislaus and Kern counties are among the most successful in California at identifying and serving CalWORKs participants with AOD problems. In 2001-2002 county management information system data show that 5 percent of the Kern County CalWORKs welfare-to-work population received county AOD services. In Stanislaus County, that figure was 6 percent. Rates of reported receipt of AOD services among our survey recipients are basically comparable: 6.8 percent of the entire sample in wave 1, 5.2 percent in wave 2 and 6.1 percent in wave 3 reported receipt of some AOD services during the 12 months prior to the respective interview. However, whether reported by the county management information system or by the survey participants themselves, these percentages are less than half of the percentage we judged to need treatment. The findings here suggest that identification could increase if welfare staff focused on clients

and to having neither earned nor welfare income. However, not all findings were statistically significant in both wave 2 and 3; nor were they consistently confirmed in multivariate analysis.

The only hypothesis not at least partially confirmed was that predicting a longer continuous stay on welfare. However, a 2004 report of findings from the Women's Employment Study suggests that substance abuse may have an effect on total time on welfare only in the range of 40 to 60 months (Seefeldt and Orzon 2004). We were able to test the hypothesis for only 24 months.

Policy implications.—The results show an overall lower trajectory of income over time for those with persistent needs. They also reveal that a substantial percentage of those with AOD needs who leave welfare have no employer or self-reported earnings. While it is plausible that substance abusers with less employer-reported earned income have other income sources (Atkinson 2000), the lack of earnings or welfare seems problematic. Some of this may reflect California's partial sanctions. About 8 percent of the entire sample in wave 2 received TANF support for their children but not themselves. Others may have been between jobs: in wave 2, 58 percent of persons with neither type of income at the time of the interview reported working at some time during the year. This pattern is consonant with that found in other leavers studies (Acs, Loprest and Roberts 2001). However, other evidence shows that the lack of work or welfare is not temporary for some families. In general, those without work or welfare may live hand to mouth on food stamps, child support, and "side jobs" (Nelson and Zedlewski 2003, page 12). Lisa Metsch and associates (2003) find that 10 percent of treated substance abusers who also received welfare report no welfare or earnings one year after discharge from treatment. The data from this study suggest that mothers with AOD problems may fare worse in these circumstances. For example, in wave 2, 45 percent of persons with no welfare, no job, and AOD service needs

percent of participants were included in all three waves and even higher percentages were consistent between wave 1 and wave 2 and between wave 2 and wave 3.

Research implications.—In other studies, alcohol dependence and drug dependence are frequently the measure of AOD problems, which has the effect of severely limiting the percentage of TANF recipients who will be defined as having an AOD problem. The "need for treatment" measure used here encompasses a group twice the size of those found to be drug or alcohol dependent. Findings using this measure still suggest substantial effects of AOD problems. Pollack and colleagues (2002b) rely on studies using CIDI short-form measures of dependence, and thus seem to considerably understate the extent of the problem. Still, efforts should continue to define measures of AOD problems that are directly relevant to welfare-reform outcomes, particularly employment.

Existing studies also tend to present only one or two measures of welfare and employment outcomes, often with no justification for the choice. Although most of the measures reported here showed some relation to the measure of AOD problems, the relation varies greatly depending on the measure. For example, in multivariate analysis, AOD need for services in wave 2 had a statistically significant relation with working 20 or more hours a week, but not with working 32 or more hours a week. In general, the relationships between different measures of problematic AOD use and welfare reform outcomes are not simple, nor do they simply replicate findings in other longitudinal studies. For example, the Women's Employment Study finds no effect of illicit drug use in the prior year on employment, whereas we found a strong effect.

Summary of findings.—In general, each of our broad hypotheses is confirmed in some measure: need for AOD services is related to welfare tenure, employment, the trajectory of earned income,

average earned income. Having an AOD service need in two or more waves is associated with a substantially lower earned income trajectory.

INSERT FIGURE 1 ABOUT HERE

Work or Welfare

Persons with AOD needs are more likely than others to lack a job and welfare support at the time of the wave 2 interview. The relationship does not hold at the wave 3 interview. In wave 2, 32 percent of those with AOD needs had neither source of income, compared to 15 percent of those without AOD needs ($\chi^2=11.89$, $df=1$, $p\leq 0.001$).

Discussion

A strength of the study design is the inclusion of a clearly post-welfare reform population (the new applicants in Stanislaus). While findings are not separate for the two counties, further analyses suggest few differences. The external validity of these findings is limited by differences in how California has implemented its TANF program. Unlike many states, even if a parent is sanctioned the family continues to receive cash for the children. If sanctioning were accompanied by a complete loss of welfare income, employment consequences might have been different (for up to 8 percent of our sample). California also has required a higher number of work activity hours per week than in most other states.

Additionally, the sampling process was not optimal as we were not able to contact potential study participants by means of a home visit. Despite the fact that analysis did not reveal substantive baseline differences between the participants we were able to contact and those we were not, there may well be unmeasured differences. These may be correlated with our welfare and employment measures. As in any longitudinal study, attrition may bias results. However, 84

and lack of a driver's license. African-Americans are significantly more likely to work at least half time than are persons of other racial or ethnic membership.

Loss of jobs, lower wages, lower earnings.—Another hypothesis is that need for AOD treatment makes it more likely for participants to lose jobs, and in particular to be fired from jobs.

Bivariate results in table 3 show AOD need is statistically significantly related to losing a job in both wave 2 and wave 3, and to getting fired in wave 2. It is not related to getting fired in wave 3.

Another possibility is that those with AOD needs have lower wages as measured by pay per hour. This might result from frequent job loss or being fired leading to a poor work history. Table 3 suggests that pay per hour is lower for those with AOD needs in both wave 2 and wave 3. However, the relationship is not statistically significant in wave 2, and is only marginally significant in wave 3 ($p \leq 0.115$).

AOD needs might also limit increases in earnings between wave 2 and wave 3. Unemployment Insurance quarterly earnings data help to determine whether this is the case. As table 3 suggests, for those with wave 2 AOD needs, the median earned income increase is \$647.79 versus \$1,512.36 for those with no AOD needs. This difference is marginally statistically significant (OLS regression with Huber-White robust standard errors, $t = -1.78$, $SE = 1,079$, $p \leq 0.08$, results not shown).

In combination, working less weeks, fewer hours, or at lower wages make it likely that women with AOD needs will have a lower trajectory of quarterly earned income. Figure 1 thus graphs quarterly earnings (as reported by employers) over 12 quarters, including quarters with zero earnings, for respondents present at all three interviews. As seen in figure 1, having a need for AOD services in only one of the three interview waves is not associated with a reduced

week (i.e., working at least half-time) and working at least 32 hours a week (which was the California work activity requirement at the time of the wave 2 and 3 interviews).

As table 3 shows, in bivariate analysis of wave 2, the estimated need for AOD services is statistically significantly related to working 20 hours a week, and to working 32 hours a week. There is no association for either measure in wave 3. Other statistically significant relationships for wave 2 (not shown in a table) suggest that working at least 32 hours a week is related to alcohol dependence. Of those judged dependent, 11.1 percent worked 32 hours a week; 33.5 percent worked 32 hours or more among those judged not dependent ($\chi^2=3.949$, $df=1$, $p\leq 0.04$). Among those who reported any drug use, 22.6 percent worked 32 hours a week or more; 33.5 percent worked at least 32 hours if they did not report any drug use ($\chi^2=5.900$, $df=1$, $p\leq 0.015$). The relation to diagnosis of drug dependence does not attain statistical significance, nor do relations with alcohol abuse or drug abuse. This is true even though half as many participants work at least 32 hours a week if they have one of these problems as do those who do not. The lack of statistically significant relations may reflect the low Ns.

INSERT TABLE 4 ABOUT HERE

Logistic regression modeling of hours worked per week.—As table 4 suggests, need for AOD services in wave 2 remains statistically significantly associated with whether clients work at least 20 hours a week in the regression (model A). However, need for AOD services is not related to working at least 32 hours a week (model B). Among those needing AOD treatment, the odds ratio for working 20 hours a week is .49 ($\chi^2= 4.81$, $df=1$, $p\leq 0.03$). For 32 hours a week the odds ratio is .60 ($\chi^2=2.11$, $df=1$, $p\leq 0.15$). Other strong predictors of lack of employment in both models are the occurrence of functional health problems, not finishing high school, having been without a home during the year, lack of child care, living in Kern County, psychiatric impairment

INSERT TABLE 3 ABOUT HERE

Work at all during the prior 12 months.—The bivariate analysis of table 3 suggests that the reported need for AOD services at wave 2 is marginally associated with whether participants worked in the prior year. Sixty-three percent of those with AOD need worked. Of those without AOD need, 73 percent worked ($\chi^2=3.55$, $df=1$, $p<=0.059$). AOD need is not associated with having worked in the year prior to the wave 3 interview. As found in some other studies (Dasinger et al 2001; Danziger et al. 2000), the wave 2 relationship washed out in multivariate analysis.³

Weeks worked, if worked at all, during the 12 months prior to survey.—Table 3 reports the Wilcoxon rank sum test (due to a heavily skewed distribution) comparing the median number of weeks worked between those needing and not needing AOD services. The difference was not statistically significant in wave 2 but was in wave 3 (24 weeks for those with AOD needs vs. 40 for those without a service need, $p<0.002$). Multivariate analysis covering all 3 years (results not shown) do not confirm a main effect, although the interaction of AOD problems with having served time in jail was statistically significant.⁴ That is, the number of weeks worked was less for those persons who both had AOD service needs and had spent some time in jail during the three years.

Working at least 32 hours a week at time of wave 2 and wave 3 interviews.—In other studies, the most common measure of work involves hours worked per week at the time of the research interview. The Women's Employment Study uses both "working at all" and "working at least 20 hours a week" (Danziger et al. 1999, p.29; Danziger et al. 2000, page 35). The Alameda study uses 26 hours (Driscoll et al., page 13). Here, measures include working at least 20 hours a

analysis eliminates participants who had only one welfare spell (they either stayed on continuously or left and did not return). A total of 38 percent of the 532 persons present in all three interview waves had two or more spells on welfare during this time period. Need for AOD services in 2 or more interview waves was marginally statistically associated with multiple spells on welfare, or cycling.²

Another test was whether persons with AOD problems are less likely than those without them to remain continuously on welfare. Of participants present in all three interview waves, 170 study participants (32 percent of the sample), received welfare in at least 23 of the 24 months. However, having one continuous spell on welfare is not related to having AOD service needs.

There was a very substantial range in the total number of months participants received TANF cash assistance during the 2 years (range=1–24; mean=14.9; median 16). Nevertheless, there are no statistically significant differences in average months receiving welfare between those having AOD service needs in zero, 1, or 2 or more years.

In summary, reported AOD problems are associated with leaving welfare for negative reasons, and weakly associated with having multiple spells on welfare. They are not associated with the actual duration of time on welfare or continuously staying on welfare.

Employment Outcomes

In Wave 2 and 3 about three-fourths of the study participants reported working some during the prior year. The median number of weeks employed during the year (for those working at all) increased steadily over the three waves. However, even in wave 3 (27 months after wave 1), fewer than 40 percent of the sample worked 32 hours a week or more at the time of the interview. AOD problems are hypothesized to relate to lower rates of work, lower number of weeks worked, and lower number of hours worked per week. Results appear in table 3.

INSERT TABLE 2 ABOUT HERE

Other Hurdles to Employment

Results suggest that TANF recipients in the two counties have problems likely to be serious obstacles to moving from welfare to employment. Table 1 reports that many participants must cope with serious health problems (24 percent), domestic violence (24 percent), impaired psychiatric functioning (17 percent), very low self-esteem (16 percent), and learning disabilities (21 percent). Human capital barriers include very limited work skills (30 percent), not graduating from high school (41 percent), not having a driver's license (39 percent), and minority status (60 percent).

Welfare Outcomes

Results (not in tables) suggest that by the wave 3 interview, 27 months after wave 1, 304 (59.6 percent) participants no longer received TANF cash aid. Negative reasons for leaving are specified as sanctioned for failure to comply with welfare-to-work requirements (39 women in wave 2 and 43 in wave 3), lost custody of children (5 women in wave 2 and 7 in wave 3), and lost benefits due to incarceration (4 women in wave 2 and 4 in wave 3). A total of 46 women, or 8.5 percent of all wave 2 study participants, report leaving welfare between the first two interviews for negative reasons. By wave 3 an almost identical 44 (8.5 percent) reportedly left for negative reasons (the across wave overlap is only 16 persons). Participants with negative reasons comprised 21.0 percent of those who left welfare in wave 2 and 14.8 percent of those who left in wave 3. Those with estimated need for AOD services are almost twice as likely to leave welfare for negative reasons as those with no AOD needs.¹

Monthly TANF eligibility data from the state welfare system was used to generate the number of welfare spells that participants had from January 2000 through December 2001. The

Results

Prevalence of AOD Problems

In table 2, measures of AOD prevalence, including need for AOD services, are shown over the three interview waves. Three key points emerge. First, initial rates reported by the full CIDI show that 12 percent of the study population qualified for an alcohol or drug diagnosis, either dependence or abuse, at the time of the first interview. This is a rate is similar to that found by others using this instrument. When service receipt and other relevant factors are included, the percentage in wave 1 with estimated AOD service needs at the time of enrollment in welfare-to-work activities is found to be over 15 percent in both counties. This substantial percentage is twice that identified by even the very good welfare programs in California. However, only 8 percent are judged to need AOD services according to results from two separate interview waves. Only 3 percent are found to need services in all three waves.

Second, initial rates of reported illicit drug use are much higher in Stanislaus County (29 percent), where participants are new applicants to TANF, than in Kern County (9 percent), where on-going recipients are studied. By wave 2 rates largely evened out (20 percent in Stanislaus County; 17 percent in Kern County). The most common types of drug use reported in wave 1, in both counties combined, included use of marijuana (8 percent), misuse of prescription opioids (7 percent), misuse of prescription sedatives (3 percent), use of non-prescription sedatives (2 percent), use of non-prescription stimulants (3 percent), cocaine use (1 percent), and PCP use (1 percent).

Third, rates for most measures of AOD problems went down after the first year, However, since waves 2 and 3 relied on the short-form rather than long-form CIDI module, the lower rates after wave 1 may be at least partially due to underreporting.

have an effect (being without a home of her own, having a child under 3 years of age at home, lacking a driver's license, lacking child care, or having been in jail during the year before the interview). The prevalence of these factors are presented in table 1 and discussed at various places in the analysis. In addition, 26 persons, or 4.1 percent, of those initially interviewed became Supplemental Security Income recipients during the study period. This group is not included in the analysis below because the current focus is on how AOD problems affect those subject to (or eligible for) welfare-to-work requirements in all 3 years.

INSERT TABLE 1 ABOUT HERE

The section presenting results begins with prevalence of substance abuse and other barriers to employment. We then consider four major hypotheses. First, we hypothesize that need for substance abuse services might affect welfare use by causing participants to leave for negative reasons (like being sanctioned), by causing clients to cycle on and off welfare, or by causing participants to remain continuously on welfare during the 3 study years (thus using up a major part of their lifetime allotment of 5 years). Second, we hypothesize that need for substance abuse services will affect employment outcomes in several negative ways. Namely, it will reduce the percentage of participants who work at all during the year prior to survey, reduce the number of weeks worked during that time, and reduce the percentage working at least 32 hours a week. Subsidiary hypotheses include the expectation that persons with AOD service needs will be more likely to lose jobs and receive lower wages.

The third hypothesis is that over time the trajectory of earnings will be lower if clients have AOD service needs. Fourth, participants with AOD needs are more likely to have neither wage income nor welfare income.

either during the study period or the 3 years prior to the study. If any of these respondents reported not working in the relevant time period, the quarterly earnings were coded as zero. In each year, it was not possible to match SSNs for between seven and nine persons, yet the clients in question reported having worked during the year. Quarterly earnings were imputed for these clients using randomly chosen values from the non-missing in each quarter (Schonlau 2003).

The interview measured other factors that are, or appear likely, to be associated with reduced likelihood of working within a welfare population. Human capital factors (including, in this study, not working the year before the initial interview, having less than a high school education, and having difficulty with English) have been demonstrated to affect welfare reform employment outcomes (General Accounting Office 2001) Lack of critical work skills also affects finding employment (Holzer 1996). A primary measure is having a health problem sufficient to impair the functional capacity to work, as measured by a health scale called the SF-12 (Ware, Kosinski, and Keller 1995). A related problem that is prevalent among welfare recipients is learning disability. We use a scale developed and validated in the state of Washington (State of Washington 1998). Domestic violence has also been associated with employment problems and more time on welfare (Tolman and Raphael 2000) We measure serious domestic violence within the year prior to the survey based on (a modified version of) the Conflict Tactics Scale (Straus et al. 1995). Psychiatric impairment is also associated with employment problems. We use a self-report scale to measure functional impairment during at least 5 of the 30 days prior to the survey due to psychiatric symptoms (Kessler et al. 2001). Other factors we hypothesize will affect employment include very low self-esteem, defined as lower than one standard deviation from the mean on the Rosenberg Self-Esteem Scale (Rosenberg 1979), and demographic barriers (age over 35, African-American or Latino race or ethnicity). Situational factors also appear likely to

Measurement of AOD problems

The full Composite International Diagnostic Interview module for substance abuse was used (Wittchen 1994) in wave 1. The short form of the CIDI was used in wave 2 and wave 3 (Kessler et al. 1998). Information on use of specific drugs as well as diagnoses of dependence and abuse are derived from the CIDI. No drug testing was performed, though respondents were asked whether they had taken an employer-administered drug test in the year prior to the survey and if they had passed. Other questions consider specific ways in which drug or alcohol use interfered with obtaining or retaining a job and the interviewer rating of whether the respondent was under the influence of alcohol or drugs during the interview. Self-reported use of substance abuse services was also recorded. A measure of "need for services" is constructed from the data. This includes as needing services: persons with an abuse or dependence diagnosis, respondents who said alcohol or drugs interfered with employment in the year prior to survey, respondents who reported needing services but not getting them, or respondents who received specialty substance abuse services.

Employment and related measures

Employment status for the samples was assessed using data from two different data sources. Each interview included questions on current employment status (whether the respondent worked at all in the year prior to the survey, and, if working at the time of the survey, the number of hours of work per week). It also contained questions about the number of weeks worked in the year prior to the survey. The data source for the amount of earned income is Unemployment Insurance (UI) records. Formal, but not informal, earnings from all employers are recorded in this database. Social Security numbers (SSNs) are used to match data to sample members. However, for 38 persons, 7.7 percent of the sample, SSNs did not appear in the UI database

attrition was due to the inability of interviewers to schedule an interview by letter or phone. In order to detect possible bias created by survey non-response, the characteristics of the Stanislaus and Kern interviewees were compared with those who were eligible but did not participate. In Stanislaus County, subjects and nonsubjects did not differ to a statistically significant degree on any measure. (Measures compared were race and ethnicity, age, education, employment status, and hours working.) In Kern there were statistically significant but substantively unimportant differences on mean age (31.3 for interviewees vs. 29.8 for those not interviewed; $t=2.237$ $p\leq 0.026$), mean years on welfare (4.02 for interviewees and 3.38 for those not interviewed; $t=2.364$, $p\leq 0.02$), and percent speaking Spanish (15 percent for interviewees and 11 percent for those not interviewed; $\chi^2=7.8741$ $df=1$ $p\leq 0.005$). As a further test of the sample's representativeness, we replicated a series of our analyses using post-stratification weights from the population for race, age, and time on welfare; results differed little from those obtained without the weights.

Of the 356 Stanislaus applicants, 32 were eligible and participating in Welfare-to-Work activities when interviewed, but did not subsequently receive cash aid. These individuals are included here when measuring the prevalence of AOD problems. They are omitted from analyses of employment and welfare tenure. In Stanislaus County, 311 (87 percent) clients were re-interviewed in wave 2; and 309 in wave 3 (87 percent). Comparisons of the Kern County study sample with state eligibility data showed 71 persons to have been ineligible for the Welfare-to-Work program, resulting in a final sample of 276. Of the 276 Kern County subjects, 262, or 95 percent were reinterviewed in wave 2 and 243 (88 percent) were reinterviewed in wave 3. Three interviews were completed with 84 percent ($N=534$) of those eligible for Welfare-to-Work and interviewed in wave 1.

relationships in a way that is only possible using longitudinal data along with a more inclusive measure of AOD problems.

Method

Sampling

For this study a randomly selected group of TANF recipients from the central valley California counties of Kern and Stanislaus was interviewed by contracted research staff three times: at baseline in the summer of 1999, 1 year later (after welfare-to-work requirements were applied), and again 15 months later (fall 2001). Interviews are referred to as the wave 1, wave 2 and wave 3 interviews. Study participants were aged 18-59, fluent in either English or Spanish, female heads of household (relative caretakers and two-parent families were not eligible), and either a TANF applicant (in Stanislaus) or TANF recipient for at least 1 year (in Kern).

In Stanislaus County, a research associate attended TANF orientation sessions in May through mid-August, 1999, to ask TANF applicants to participate in the study. Seventy-one percent of Stanislaus County applicants during this period who met study eligibility criteria were interviewed. There were 356 interviews. In Kern County, a random sample was drawn from 4,732 CalWORKs recipients living inside Bakersfield who had received TANF at least 1 year and were recertified during the sampling period. A total of 347 interviews was completed during the May through mid-September sampling period. This is 55 percent of those in the sampling frame.

Domestic violence was another focus of the study (Meisel, Chandler, and Rienzi. 2003). We feared that if a woman's participation in the research interview was known it could endanger her. Therefore, home visits were not part of the study design. Refusal accounted for 5 percent of non-responders in Stanislaus County and 7 percent in Kern County. Most nonresponse and

investigators finds somewhat higher rates of substance abuse among those sanctioned than among voluntary leavers, but much higher AOD rates among those who failed to get welfare for non-financial administrative reasons, such as incomplete paperwork (Gritz et al. 2001).

Starting in 1989, Laura Schmidt, Constance Weisner, and James Wiley conducted a 6-year prospective study with Bay Area recipients of Aid to Families with Dependent Children. Results suggest that substance abuse did not affect welfare tenure or going on and off welfare repeatedly (Schmidt, Weisner, and Wiley 1998). A recent analysis by one of the investigators (Zabkiewicz and Schmidt 2003) examines clients in the Bay Area since welfare reform. Results show that although substance abusers are more likely than non-abusers to have a prior history of welfare receipt, they are not more likely to return to welfare after being sanctioned or removed from aid. They also are equally likely to report a job loss (Zabkiewicz and Schmidt 2003).

Contribution of This Study

Studies that use data collected after welfare reform to analyze the effect of AOD problems on welfare tenure, employment while receiving welfare, and employment after leaving welfare, find no effects, weak effects, or effects limited to the small percentage of clients believed to be drug dependent. Although counterintuitive, these findings are consistent with the mixed findings regarding the association of substance use and employment in the larger labor market (Atkinson et al. 2000). Still, the measurement problems noted above continue to compromise many findings.

Accordingly, this article reports on a study that is based on a randomly selected TANF population. It measures the prevalence and effects of AOD problems both before and after clients leave TANF. It samples both new applicant and long-time user populations. It clarifies causal

drinking rate was 10 percent, and the drug abuse (almost all marijuana) rate was 12 percent. The alcohol dependence rate was 5 percent. A bivariate analysis shows that at the time of the first interview, heavy drinking (but not drug abuse) was associated with not working (Speiglmán et al. 1999). However, multivariate analysis of later waves suggests that the relationship of working with drinking is only marginally statistically significant (Driscoll, Speiglmán, and Norris 2000). The exception was when drinking was in combination with a criminal justice history (Driscoll, Speiglmán, and Norris 2000). Respondents judged their own need for services at rates that were considerably lower than those found in objective measures. It was not related to employment rates (Speiglmán et al. 1999).

Two studies match statewide data from welfare programs and substance abuse treatment programs (Wickizer et al. 2000; Metsch et al. 2003). In both studies, treatment of welfare recipients (primarily before the 1996 implementation of TANF) is found to be associated with employment gains.

Leavers studies

A Utah follow-up study of welfare leavers (Utah has a 3-year time limit on welfare receipt) does not show a statistically significant difference in alcohol or drug use between those clients who left welfare with increased income and those who left due to time limits (Taylor and Barusch 2000; Taylor and Barusch 2002). A study in Sonoma County, California, compares persons who left welfare voluntarily in 1999 to those who were sanctioned during that year. A year later, substance abuse was reported (self-reported and reported by other household members) to be about twice as high among those sanctioned as among those who voluntarily left welfare. In addition, substance use was higher among those who returned to welfare within the study period (Mancuso and Lindler 2001). A similar study in nearby Contra Costa County by the same

Most other findings on work are based on cross-sectional interviews with those who have left welfare. However, three studies (in addition to WES) are prospective and longitudinal. A 2-year study in Houston recruited a convenience sample of substance abusing welfare recipients and a nonabusing comparison group (Atkinson et al. 2003). Analysis focused on the subsequent employment among members of the two groups. Results suggest that in the course of six interview waves, drug use went down, and employment up. However, the reduction in drug use is questionable because 32 percent of the sample attrited over the two years. A primary concern of the investigators was with the relationship between substance use and employment across adjacent waves. In three of six wave-to-wave comparisons, lower work hours are associated with drug use in the prior wave. In only one of the comparisons was higher work hours in one wave associated with lower drug use in the next (Atkinson et al. 2003*b*). After 2 years, drug use does not directly affect total earnings, but drug users' income is less likely to be from employment (Atkinson et al. 2003*a*). In essence, study findings are equivocal.

Amanda Barusch and Mary Jane Taylor (1999) interviewed long-term welfare recipients in Utah. Using self-reported data, they find that the alcohol abuse rate is 20.1 percent, and the drug abuse rate is 19.6 percent. Among those with reported drug abuse problems, only 24 percent were working at least 20 hours per week, compared to 38 percent of those who did not report a drug abuse problem (Barusch and Taylor 1999).

Richard Speiglman and colleagues (1999) interviewed a random sample of welfare recipients in Alameda County, California, in 1998, and in 2 succeeding years (Speiglman et al. 1999; Driscoll, Speiglman, and Norris 2000; Dasinger et al. 2001). Defining heavy drinking as "five or more drinks at one sitting at least once a month in past year" and drug abuse as "past year drug use at least weekly," (Speiglman et al. 1999, p. 33) they find that the first wave heavy

Evidence of Work Interference

Although the assumption among welfare administrators usually is that AOD problems will prevent TANF recipients from finding employment, this is an empirical question. Indeed, the 2000 NHSDA reports that 77 percent of illicit drug users are employed (*National Household Survey of Drug Abuse 2000*). Pollack and colleagues (2002b) cite evidence from the NLSY and the NHSDA showing some association of AOD problems with differential receipt of welfare and employment rates for those on or leaving welfare. Yet, they also note that AOD problems represent a small part of the overall human capital barriers facing welfare participants.

The Women Employment Study is the primary study that examines employment after the 1996 reforms. The WES is methodologically sound, uses a representative sample (of welfare recipients in an urban area), and is longitudinal. Results of the WES suggest that, by 1999, a significant percentage of the study sample had left welfare. Of leavers who did not work, 8.6 percent reported drug dependence. Among women still on welfare and not working, 6.4 percent reported drug dependence. By comparison, fewer than 1 percent of respondents who left welfare and were working at least 20 hours per week and none of those working but remaining on welfare reported being dependent on drugs. The difference in dependence between those working or not is statistically significant. However, differences in illicit drug use (rather than dependence) between the employed and unemployed were not statistically significant (Pollack et al. 2002b). Multivariate outcomes show a marginally statistically significant effect of substance dependence on the weeks worked between the 1997 and 1998 interview waves (Danziger, Kalil and Anderson, 2000).

test for heavy cocaine use. Out of 1,328 sampled recipients, 150 (11.3 percent) are judged by self-reports to have either an alcohol or a drug dependence or abuse disorder within the 18 months prior to survey; 6.1 percent had alcohol dependence or abuse and 7.8 percent abused or were dependent on other drugs. Nine percent admitted to cocaine usage during the interview. However, 18 percent of the hair samples showed cocaine use within the 3 months prior to survey (Kline et al. 2000). Twenty percent of sample members were judged by investigators to need treatment. Need is defined as having three symptoms of dependence or a hair sample that tested positive, revealing evidence of cocaine use.

Through experiments in New Jersey, Morgenstern and colleagues (Morgenstern et al. 2000) demonstrate that identification of persons needing substance abuse treatment increases by over 100 percent when using special screening methods. Over 10 percent of the population was referred for treatment (Morgenstern et al. 2000). The same author compares substance abusing and non-substance abusing women welfare recipients, finding that those with substance abuse face more significant barriers to employment (Morgenstern et al. 2003).

In California, the Legislature allocates over \$100 million annually to identify and serve persons with mental health or AOD problems. Counties range greatly in the percentage of persons assessed and treated. By 2001, in the counties most successful at identifying those with AOD service needs, 6 percent of the entire CalWORKs population received AOD treatment within a calendar year (Meisel, Chandler, and Jordan 2002), though rates in Los Angeles and many other counties hovered around 1 percent. In summary, while rates of identification of recipients with AOD problems have generally been low, there is evidence that this stems from underreporting in some states and that concentrated attempts to identify cases can increase the rate of identification.

Only a few report on results of drug testing or rates of receipt of treatment (Kline 2000; Metsch et al. 2003).

National and Longitudinal Findings

Research associations between AOD problems and welfare are most fully summarized by Harold Pollack and colleagues in an earlier issue of *Social Service Review* (Pollack et al. 2002b). They primarily discuss data from the National Household Survey of Drug Abuse (NHSDA) and the National Longitudinal Survey of Youth (NLSY), both of which predate welfare reform, and the longitudinal Women's Employment Study (WES) in Michigan. The WES drew its sample early in 1997 (Pollack et al. 2002b). There is general agreement in the studies cited by Pollack and colleagues that alcohol dependence in welfare populations is in the range of 3 to 9 percent with illicit drug dependence in the range of 3 to 6 percent. Use of illicit drugs is in the range of 15 to 25 percent. The NHSDA data suggest no clear trend in illicit drug use by welfare recipients between 1990 and 1998.

Identification of Persons with AOD Problems by Welfare Departments

Florida state officials (Merrill et al. 2001) used the Addiction Severity Index to assess substance abuse problems in the Florida TANF population. The assessment found rates of substance abuse to be far lower than expected—only 3 percent admitted alcohol or drugs caused problems in the 30 days prior to the survey. The researchers hypothesize that drug users are dropping off welfare, perhaps "returning to the streets" (Merrill et al. 2001, p.25).

The studies cited by Pollack and colleagues (Pollack et al. 2002b) all rely on self-reports of substance use, usually as measured by the short form of the Composite International Diagnostic Interview (CIDI; Kessler et al. 1998). A New Jersey state health agency (Kline et al. 2000) reports on a study that uses a similar diagnostic instrument but supplements it with a hair-sample

Substance abuse among welfare recipients has been of special interest since the 1996 welfare reform legislation, which is generally called the Personal Responsibility and Work Opportunity Reconciliation Act (U.S. Public Law 104-193). Some early observers feared that substantial percentages of Temporary Assistance for Needy Families (TANF) clients would have sufficiently severe alcohol and other drug (AOD) problems to interfere with their ability to meet welfare reform requirements. For example, the American Psychological Association estimated that 16 to 20 percent of female TANF participants have serious AOD problems. The organization's report stated, "Women on welfare with drug and alcohol problems, like other Americans with these problems, will not be able to rise to the challenge of becoming self-sufficient without first receiving appropriate treatment for their addiction" (American Psychological Association 1998, online at <http://www.apa.org/pi/wpo/health.html#alc>). Yet, over several years, welfare offices have generally identified very low percentages of participants who have AOD problems. How much has research clarified issues of prevalence, identification, and need for treatment?

Post-Welfare Reform Research

Definitions

In the context of welfare reform, AOD problems are defined in different ways by different investigators. Investigators with the most stringent definition focus on persons who meet diagnostic standards for alcohol or drug dependence or abuse (Danziger et al. 2000.). Those using broader definitions define AOD as problem drinking or problem drug use (Speigman et al. 1999), use of any illicit drug that might show up on an employer's drug test (Pollack et al. 2002a), or need for treatment (Morgenstern et al. 2000). Most studies use self-reported data.

Abstract

A random sample of 632 female head of household welfare recipients in two California counties was interviewed three times in the period between 1999 and 2001 to assess the correlates of substance abuse. Results suggest that a need for substance abuse services is associated with going on and off welfare more than once, leaving welfare for negative reasons, failing to find employment, and a low trajectory of earned income. These findings suggest that welfare administrators might usefully work with substance abuse providers to identify and serve welfare recipients with substance abuse problems.

WORKING PAPER: Substance Abuse, Employment and Welfare Tenure

Running head: Substance Abuse and TANF

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