CalWORKS Project Research

Alcohol & Other Drug,

Mental Health, and

Domestic Violence Issues:

Effects on Employment and Welfare Tenure After One Year

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EXECUTIVE SUMMARY

Background

This report demonstrates the effect of alcohol and other drug (AOD), mental health (MH), and domestic violence (DV) issues on employment success and welfare tenure in a research sample of women receiving Temporary Assistance to Needy Families (TANF). Research participants were randomly selected from single female heads of household in two California counties. In both samples, the participants were aged 18-59 and fluent in English or Spanish. The Kern County participants had received TANF for at least one year, and the Stanislaus participants were new applicants to TANF.

Two rounds of intensive interviews were conducted in 1999 and 2000. A total of 646 women were interviewed in Round I and 579 were re-interviewed in Round II.

In addition to AOD/MH/DV barriers to employment, the research also assesses the prevalence and effect of 15 other potential health, human capital, and situational barriers to employment. At the time of the second research interview in the summer of 2000, from which most information in this report is drawn, study participants had been subject to welfare-to-work activity requirements for a year.

The report is divided into five sections:

> The first section focuses on welfare and employment status of the study participants in the year between the first and second interviews the first year of welfare-to-work requirements.

> Section two examines the effects of AOD/MH/DV barriers or a variety of other human capital and situational barriers on employment.

> Section three looks at the combined or cumulative effects of all 18 barriers on employment rates.

> The fourth section uses multivariate regression analysis to look at the effects of each barrier independent of the effects of the other barriers.

> The final section is devoted to predicting the potential effect on employment of remediating AOD/MH/DV and other barriers.

Section One: Welfare and Work Status One Year After Welfare-To-Work Requirements Were Implemented

The work and welfare status changed significantly over the year between interviews.

At the time of the second interview, 36 percent of participants in Kern County and 51 percent in Stanislaus County were no longer receiving cash assistance.[1] Of these, 44 percent in Kern and 59 percent in Stanislaus were working. A recent synthesis of 15 leavers studies in the aggregate reported that a median of 57 percent of leavers were working in the first (and fourth) quarter after leaving welfare. Of most concern are the 10 percent of the total sample in Kern and 15 percent in Stanislaus who report neither working nor receiving any cash assistance for themselves or their children.

The pattern of work in the welfare-to-work implementation year (the year between interview rounds) was similar in the two counties.

At the time of the second interview:

- 65 percent of the Kern participants and 70 percent of Stanislaus participants had worked during the prior 12 months;

- 85 percent of those who were working when interviewed reported working 26 or more hours per week in both counties, and over 20 percent of the women in each county worked more than 40 hours a week.

> I am not lacking hope, but I am not happy. I am not happy with my life because I know I can do much better than this.

The increase in employment status of the study population between the two interview rounds differed partly due to the differences in initial welfare status of the two county samples.

From the first to the second interview, the percent of those working at least some amount in Stanislaus increased from 22 to 51percent, while in Kern, the increase was from 36 to 40 percent. The small increase in Kern reflects in part the long-term welfare tenure of Kern respondents.

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[1] This includes 10 percent of the sample in Kern and 6 percent in Stanislaus in which the parent received no cash assistance but the children still did.

Section Two: The Effect of AOD/MH/DV Issues and Other Barriers on Employment

A. The Effect of AOD/MH/DV Issues on Employment

This section compares different measures of AOD problems, MH problems, and DV issues some of which are strongly and others weakly predictive of measures of employment.

Meeting the minimum work standard

Most measures of MH status indicate that mental health problems significantly reduce the likelihood that study participants will be working the minimum welfare-to-work activity standard of at least 26 hours per week particularly those associated with greater severity.

Three measures were highly predictive of whether a participant would be working at least 26 hours a week. Each identified roughly 15-18 percent of the sample in the two counties combined. The three measures are as follows:

- Whether the respondent indicated impaired functioning five out of the last 30 days due to mental health symptoms. Fifteen percent of the total sample fell into this group. In Stanislaus, 16 percent of those reporting impairment worked at least 26 hours a week vs. 47 percent of those not reporting impairment. In Kern, only 5 percent of those reporting impairment worked vs. 38 percent of those who did not.

- Using a cut-off on the BASIS-32 equivalent to an outpatient level of symptom scores, 17 percent of the sample in the two counties combined met this standard. In Stanislaus, 28 percent worked if they had scores this high vs. 45 percent of those with lower scores; in Kern, 9 percent of those with higher scores worked vs. 39 percent with lower scores.

- Having two or more of five psychiatric diagnoses. In both counties, 18 percent had two or more psychiatric diagnoses. In Stanislaus, 30 percent with at least two diagnoses worked vs. 46 percent of those without two diagnoses; in Kern, 4 percent of participants with at least two psychiatric diagnoses worked vs. 39 percent working without two diagnoses.

Having a single mental disorder was less predictive. The five diagnoses we tested (major depression, panic attack, post traumatic stress disorder, attack, social phobias, and generalized anxiety disorder) were inconsistently predictive: Each was statistically significant in one county, but none were in both counties.

The roughly 13 percent of the sample in each county who are judged in need of services for AOD problems are significantly less likely to be working at least 26 hours a week.

In Stanislaus, 26 percent of those identified as needing AOD services worked at least 26 hours a week vs. 45 percent of those not meeting these criteria; in Kern, 15 percent needing AOD services worked vs. 36 percent who did not need AOD services.

Other measures that were predictive of lower likelihood of working 26 hours or more at a statistically significant level were alcohol dependence (but not drug dependence[2]) and any illegal drug use.

The presence of serious domestic violence was highly predictive of not working at least 26 hours a week in Kern, but only in some subgroups in Stanislaus.

Virtually all measures of DV showed a statistically significant relationship in Kern, while only one measure (overall need for DV services) approached significance in Stanislaus.

Eighteen percent of the overall sample reported serious abuse, the measure we use most frequently in the report. Of these in Kern, 17 percent were working at least 26 hours a week compared to 31 percent of those without serious DV. In Stanislaus, 40 percent with DV worked at least 26 hours compared to 43 percent without DV.

> Interviewer: What kind of difficulties has domestic violence caused in your life?
>
> Respondent: Never stay at a job, number one; I got fired from so many jobs. You don t feel confident about yourself, any confidence at all, your self-esteem goes down, you feel lonely, rejected, you just don t feel good.

Subgroup analysis of the "need for DV services" measure accounts for some of the difference between the effects of DV on work in the two counties and sheds light on factors associated with negatively affecting working in both counties.

   a) *Partner status.* Among those women who live with their husband, there is a strong negative impact of DV need on working at least 26 hours in *both* counties (although it is stronger in Kern). While among those women not living with their husband, the impact of DV need or services on working is not significant in *either* county.

   b) *Age*. In both counties, participants *over* age 35 showed a significant effect of DV. Counties differed significantly among participants under the age of 36: only 7 percent of women in Kern worked at least 26 hours a week while 60 percent of those in Stanislaus worked at least 26 hours per week.

   c) *Education.* Stanislaus respondents without a high school degree showed a significant difference in working at least 26 hours per week (23 percent if DV needs, 38 percent otherwise), but no difference (46 percent with DV needs vs. 48 percent otherwise) for participants with a high school degree. In Kern, DV had an effect at both levels of education, although a greater one with no high school degree.

   d) *DV services.* In Stanislaus, 50 percent of those who received professional DV services were working at least 26 hours a week. In Kern, only 8 percent of those who saw a domestic violence professional were working at least 26 hours. This difference means that among those *not* having seen a DV professional in Stanislaus the association of having DV needs with working 26 hours is statistically significant: 31 percent worked if they had DV needs vs. 45 percent if not.

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[2] The small size of some groups lessens the chance that we will find statistically significant associations.

Having more than one of the three (AOD, MH, DV) issues greatly limits the likelihood of working at least 26 hours a week.

Approximately 11 percent of the study participants in both counties have two or more AOD, MH, or DV issues. In Kern, none of the 18 cases with overlap were working 26 hours or more compared to 38 percent working among those with no overlapping conditions. In Stanislaus, seven of 31 persons with overlapping conditions were working (23 percent) as opposed to the 45 percent of those with no overlapping conditions.

Sustained MH impairment was associated with significantly lower likelihood in both years of working at least 26 hours; this effect was not found with AOD or DV.

A strong indication of difficulty in employment is that a participant was not working at least 26 hours a week at the time of *either* interview round. That is, at both interviews the respondent was working less than 26 hours a week. We examined whether having a serious AOD/MH/DV condition for both years was associated with not working at least 26 hours a week in both years.

MH problems which persisted over both years had a strong negative effect on employment in both years. For respondents who reported impairment five out of the last 30 days due to MH symptoms in both Round I and Round II interviews, only 5 percent in Kern and 15 percent in Stanislaus worked 26 or more hours in *either* of the two years.

The same relationship was not found for either sustained AOD need for services or sustained serious domestic violence.

Job finding, retention and loss

Failure to work at all during the second year was associated only with MH.
Overall, 72 percent of Stanislaus and 69 percent of Kern respondents answering this question worked at least one week in the year prior to the interview, considerably more than were working at the time of the second interview. However, only the mental health measure was significantly related to working during the year in both counties, although DV was in Kern and AOD was nearly significant in Stanislaus.

AOD, MH, and DV issues do not impact the number of weeks worked among those who work at all.
A threshold effect is apparent for all three of the AOD/MH/DV conditions: CalWORKs participants are less likely to work if they have any of these conditions. However, if the threshold is passed and those with AOD/MH/DV issues work at all, then the overall number of weeks worked in either year is not significantly different from those without these issues.

AOD, MH, and DV issues result in greater job loss, including being fired.
Both impairment due to MH symptoms and need for AOD services were statistically associated with having lost at least one job. Of those with MH impairment, 27 percent had lost a job vs. 19 percent of those without impairment. Of those with AOD service needs, 28 percent had lost a job vs. 19 percent of others. Members of all three AOD/MH/DV groups were significantly more likely to have been fired than those without these conditions: AOD needs (7.9 percent vs. 1.6 percent), serious DV (4.8 percent vs. 1.9 percent, p†0.08), and MH impairment (5.9 percent vs. 1.8 percent).

Training and schooling

AOD/MH/DV issues had a minimal effect on participation in training or education.

Overall considering participation in training, adult education, ESL, and college courses there was little association of training with AOD, MH or DV issues. MH impairment had a negative association with receiving vocational training: 19 percent of the population overall reported some vocational training, but only 10 percent of those with MH impairment did. Those with DV issues were somewhat more likely to have taken college courses than those without DV issues (in both counties): 18 percent of those with DV service needs took college courses vs. 12 percent of those not having DV issues. And those with AOD needs were more likely than those without to have taken adult education courses: 22 percent vs. 14 percent. Given the number of statistical tests performed, however, even these limited findings are likely to be overstated.

No job and no cash assistance

More study participants with AOD, MH, and DV issues in Round II were in the vulnerable position of neither working nor receiving cash assistance.

A higher percentage of those with an AOD, MH, or DV issue were totally reliant on cash assistance in Round II. For example, in both counties combined, 57 percent of those with MH impairment were totally reliant on cash assistance at the Round II interview, in contrast to 40 percent of those without a MH problem.

Even more troubling, however, is the significantly higher percentage of participants with these issues who are not working and who report receiving no cash assistance. Roughly one-quarter of those with a serious MH or AOD problem reported no income from either welfare or work compared to 12 percent overall.

AOD/MH/DV measures used in the rest of the report

The rest of the Executive Summary and the Report use those measures that show the greatest effects on employment:

> For mental health: mental health impairment as defined by being unable to carry out activities of daily life at least five of the prior 30 days due to mental health symptoms.

> For domestic violence: serious abuse, defined as physical injury; having been choked or beaten; stalking; threats by the abuser to kill the woman or himself, or threats to kidnap the children or call Child Protective Services (CPS); and preventing the woman from working or harassing her at work.

> For AOD: overall need for AOD services as defined by dependence/abuse diagnosis or stated need for treatment, having received treatment, or having work-related AOD issues (including being under the influence at the research interview).

B. Human capital, health and structural barriers

In addition to AOD, MH and DV, this study measured 15 other barriers, including health or disability, demographic (age, race), situational/structural factors (e.g. being without a home, having a very young child, lacking a driver s license), and human resources (e.g. low education, poor work history).

Eight individual barriers (besides AOD, MH, and DV) had a significant negative impact on the probability of working at least 26 hours a week.

The potential barriers are listed according to whether or not in a bivariate analysis they were significant in both counties, one county or neither county. The variables that changed with the multivariate analysis are indicated as well. The following were significant in both counties:

Health problems sufficient to impair functioning (based on SF-12 scale)

No driver s license

No home of own (at time of interview)

Very low self-esteem

Three or fewer of nine work skills

Did not work in year before first interview

Grade 11 or less (not significant in multivariate analysis)

Race not African-American (African-Americans were more likely to be working at least 26 hours in both counties than were other racial/ethnic groups)

The following were significant in one but not the other county:

Learning disability in Stanislaus (not significant in multivariate analysis)

Child under age three in Stanislaus (not significant in multivariate analysis)

Child care very hard to arrange (Kern only)

A few characteristics that we expected to have a negative impact on employment were not statistically significant in either county:

Difficulty with English

Reports job discrimination often (but *was* significant in multivariate analysis)

Disabled child at home

Age 36 and over

Overall time on welfare

A number of variables appeared to become less problematic between interviews. These include difficulty arranging childcare (in both counties), lack of driver s license (in both counties), having a disabled child at home (Kern), having very limited work skills (both counties), and reports discrimination occurring often (Kern). Thus, it appears that respondents eliminated some of these work-related hurdles between the two interview rounds. On the other hand, the percentage of low self-esteem and health problems increased.

Section Three: The Effect of Multiple Hurdles on Employment

The study found a very strong relationship between the number of potential barriers encountered and the reduced likelihood of working.

The number of potential barriers was strongly predictive of not working at least the minimum 26 hours per week. Twenty-one percent of participants had to cope with seven or more potential barriers and only 13 percent worked; 47 percent faced four to six hurdles and only 37 percent worked; 25 percent had two or three hurdles and 69 percent worked. The number of hurdles also directly influences the number of weeks worked, if any[3]

> I know what I would like to do, but I wonder can I do this. I have five kids, that is a lot of kids and to me that is really, really scary, because you have to make an effort, food and bills, your rent, your accessory for the kids, you know. That is a lot of money. I mean where are you going to get it from? It is scary; I am scared.

***The study found that women with AOD/MH/DV issues** also have a higher number of human capital, situational and health obstacles than women who do not have AOD/MH/DV issues.*

Of the 15 human capital, health and situational barriers this study measured in addition to AOD/MH/DV, the mean number of barriers for study participants without AOD/MH/DV issues was 4.0, while the means for participants with any of the issues or a combination of these issues were consistently higher.[4] For example, the means for women with MH issues only were 5.9 in Kern and 5.4 in Stanislaus.

Study results clearly demonstrate the effect of multiple hurdles on employment: overall, those who were not working (whether on welfare or not) had significantly more barriers than those who were working.

The effect of multiple barriers on four different measures of employment not working, working at least 26 hours a week, at least 32 hours a week, and 40 hours or more per week were similar in both counties. In both counties, more barriers clearly mean fewer women working. Multiple barriers also seem to reduce the ability to sustain employment over two years.[5]

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[3] The correlation between the number of hurdles and number of weeks worked is .39, and the amount of variance explained by the number of hurdles is approximately 11%.

[4] With the exception of AOD in Kern County, where the mean was 3.9.

[5] In both counties the mean number of barriers among those whose work status was worse (working in Round I, but not in Round II) was higher than among those whose work status improved.

Section Four: Multivariate Analysis of the Impact of Potential Barriers on Employment

Multivariate analysis slightly decreases the negative impact of AOD/MH/DV on the likelihood of working at least 26 hours a week.

In general, multivariate analysis confirmed the earlier bivariate analyses of the effect of AOD/MH/DV measures on working at least 26 hours a week, although it actually accentuated the lack of impact of serious domestic violence in Stanislaus County. Graphs in the full report present the relationship of the predicted probability of persons with AOD/MH/DV working at least 26 hours to self esteem, age and prior welfare history.

Multivariate analysis also confirmed the minimal effect of AOD/MH/DV measures on the *duration* of employment.

AOD and MH problems and DV (in Kern) as well as some human resource and situational barriers reduced the likelihood of participants working at a level indicative of stable full-time employment.

The goal of TANF is not just that parents stop receiving cash assistance after specified time periods but that participants use the period of support to become economically self-sufficient without any cash assistance. We assume that those who reported working at least 44 weeks out of the year who *also* reported working at least 32 hours a week at the time of the interview were good candidates for achieving economic self-sufficiency. Seventeen percent of the sample in each county met these criteria.

Only 7 percent of those with a MH impairment were working at this level, compared to 18 percent of those without a MH impairment. Eight percent of those who reported using any illicit drug worked at a stable full-time level compared to 18 percent without such use. And in Kern, 7 percent of those with serious DV worked at that level vs. 18 percent of those without serious DV.

Other negative predictors were the human resource barriers of not having worked in the year before the first interview, and low work skills. The situational barriers of having a child under 3 years of age, no driver s license, no home of own, and difficulty arranging child care also had a negative effect on whether or not someone was working at least 44 weeks and at least 32 hours per week.

It seems unlikely that being on welfare itself contributes to the impact of AOD/MH/DV issues on employment.

Does being on welfare contribute to substance abuse? Does being on welfare exacerbate domestic violence? Does it make recipients depressed? (A related hypothesis is that working itself will alleviate depression.)

We performed instrumental regression modeling to test simultaneous causation for a) depression, b) functional impairment due to mental health symptoms, c) serious domestic violence (in Kern only), and d) need for AOD services. In no case were we able to show at a statistically significant level that causation worked both ways.

The related hypothesis, that becoming employed alleviated depression, finds some support although the finding might also be due to selection.

Section Five: Predicting the Impact of AOD/MH/DV and Other Barriers on Employment, and the Cumulative Impact of Removing Obstacles to Employment

Using multivariate analysis, the report indicates how much the probability of working at least 26 hours per week would change if barriers were remediated. The first step in this analysis was to select those potential barriers that could theoretically be remediated by supportive services. These included, besides AOD/MH/DV, problems arranging child care, health difficulties, not having own housing, no driver s license, low work skills, and low self esteem.

Multivariate analysis then determined the relative effect that each of these potential barriers had on working at least 26 hours per week at the time of the second interview. The change in discrete probability of working at least 26 hours suggests the amount would increase if that particular barrier were prevented or eliminated.

Calculating the total impact of remediating these potential barriers required not only the discrete change for each variable but the prevalence of that barrier in the population. That is, the more people who have the particular barrier, the larger the impact of remediating it. Note that this analysis makes a strong assumption of causality regarding the effect of barriers on employment.

Removing all of the remediable barriers would increase the percentage of the sample working at least 26 hours a week from 38 percent to 71 percent.

This finding indicates a large potential improvement from addressing those barriers that are amenable to improvement or removal. A few caveats are necessary. This is a result from statistical modeling that would be stronger if it could be demonstrated through an experimental design, i.e. calculating what actually happened as a result of removing barriers. Second, a large infusion of resources would be required, including funds for child care, transportation, and housing. Removing just the AOD, MH, and DV barriers would increase the percentage in the population working at least 26 hours from 38 percent to 45 percent.

Additionally, if all the barriers were remedied, predicted stable employment (44 weeks a year, 32 hours a week) would increase from 16 to 38 percent of the population.

Using a statistical model allows prediction of individuals likely to need special supportive services if they are going to be able to work at required levels.

Welfare-to-Work staff may be most interested in predicting which individuals will *not* work at least 26 hours a week so that they can provide services to eliminate some of the hurdles. The regression model can be applied to the particular constellation of potential barriers for any individual participant, yielding an individual probability of working. The advantage to such prediction is clear it would allow TANF staff to target resources most effectively to those who are least likely to be successful with the usual program. If we wanted to be 90 percent certain which individuals at assessment would *not* work absent special supports, the regression model predicts 32 percent of the population would meet this standard.

This remains at this point, however, a theoretical model which makes assumptions that may in reality not be fulfilled, e.g. that the assessments of the barriers would be accurate.

INTRODUCTION

A. Background

Historically the primary purpose of welfare has been to provide a minimum safety net for dependent children. Under the 1996 welfare reform legislation[6], the purpose shifted so that moving parents from welfare to employment became the focus. However, because welfare benefits are low, leaving welfare for work may in itself benefit the children.[7]

The effects of welfare reform so far show major reductions in use of cash aid in all states. In California there was a 50 percent decline in the welfare rolls between 1994 and 2001.[8] Studies of employment by those who have left welfare find on average 75 percent were employed at least part of the time in the follow-up period although only 57 percent were employed at the time of leaving welfare. However, only about a third of those leaving worked all four quarters of the next year in a row.[9] Evidence from New Jersey shows that while job turnover is high 40 months after the study sample began receiving welfare, the average wage has increased over time, and the average income of those working is far greater than that of those not working, whether still on welfare or not.[10] Nationally, 28 percent of those on welfare in 1999 also worked for pay.[11]

As the caseloads have dropped, attention has increasingly shifted to women who are hard to employ. [12] These may be women who remain on welfare without working, or who work only a few hours a week, or

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[6]The Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996 replaced the AFDC program of cash assistance with Temporary Aid to Needy Families (TANF) block grants. The California legislation implementing TANF is called CalWORKs (California Work Opportunity and Responsibility to Kids). Unless temporarily or permanently exempt, recipients of cash aid must participate in work activities or employment as a condition of receiving aid. Receipt of aid is limited to a maximum of two years at one time and five years lifetime.

[7] Source: US. Census Bureau. Prepared by Brookings Institute, Welfare Reform and Beyond Initiative, 2002. A substantial part of this effect is due to the earned income tax credit. On the average, a woman with two children who receives welfare also receives food stamps and has a total income of less than $10,000 a year, well below the poverty threshold. The same woman working at minimum wage is still below poverty level if her wages and food stamps alone are considered, but the earned income tax credit lifts her total income to over $15,000 about $3,000 above the poverty line. These calculations, however, are ideal since they leave out increased living costs, particularly child care and transportation, and ignore the difficulty of retaining work experienced by many who leave welfare. They also ignore the widespread failure of persons leaving welfare to retain food stamps or their Medicaid benefits.

The Women Employment Survey also found advantages to work: We find that mothers who were working in Fall 1999, about 34 months after the sample was drawn, had higher household incomes and lower poverty rates, experienced similar levels of material hardship, engaged in fewer activities to make ends meet, and had lower expectations of experiencing hardship in the near future than did nonworking welfare recipients. Danziger , S., Heflin, C. M., Corcoran, M. E., & Oltmans, E. (2001). *Does it Pay to Move From Welfare to Work?* Ann Arbor: University of Michigan: http://www.ssw.umich.edu/poverty/pubs.html.

[8] Brookings Institute, Welfare Reform and Beyond Initiative, 2002.

[9] Moffitt, R. (2002). *From Welfare to Work: What the Evidence Shows* (Policy Brief Number 13). Baltimore: Brookings Institute Welfare and Beyond Initiative.

[10] Rangarajan, A., & Johnson, A. (2002). *Work First New Jersey Evaluation: Current and Former WFNJ Clients: How Are They and Their Children Faring 40 Months Later?* Princeton: Mathematica Policy Research, Inc.

[11] Historically rates were much lower, e.g. 7 percent in 1992. Health and Human Services Department Third Annual Report to Congress: http://www.acf.dhhs.gov/programs/opre/annual3execsum.htm

[12] United States General Accounting Office (2001). *Welfare Reform: Moving Hard-to-Employ Recipients Into the Workforce* (GAO-01-368). Washington: United States General Accounting Office.

women who have left due to sanctions or for other reasons. Without information about the numbers of persons in the caseload with different barriers and information regarding the impact of those barriers on finding employment, California (and other states) will find it difficult to continue to increase the percentage of welfare recipients finding jobs or at least participating fully in work activities.[13]

This report focuses on the characteristics that alone or in combination can impede finding employment. The primary focus of the CalWORKs Project is on three such potential hurdles: having mental health problems (MH), alcohol or other drug problems (AOD), or suffering from domestic violence (DV). However, these hurdles cannot be understood except in relationship to other barriers the silent barriers of learning disability and very low self-esteem, structural constraints like limited child care, and human capital barriers such as low education level and no previous work history.

The CalWORKs Project

CalWORKs (California Work Opportunity and Responsibility to Kids) is California s implementation of the federal Temporary Assistance to Needy Families (TANF) program. The CalWORKs Project is a collaborative effort of the California Institute for Mental Health, Children and Family Futures, and the Family Violence Prevention Fund. Funding from the California Department of Social Services, voluntary contributions from California counties, the David and Lucile Packard Foundation, the California Wellness Foundation, and a grant from the National Institute of Justice support the Project s work. Additional information about the Project and products from the Project are available at www.cimh.org or by calling (916) 556-3480, ext. 111.

In particular major results and recommendations are summarized in four policy briefs:

Chandler, D., Meisel, J., & Jordan, P. (2002). *Policy and Practice Brief #1: Mental Health, Domestic Violence and Substance Abuse: Need for and Use of Services Among Adult Female TANF Participants*. California Institute for Mental Health. Available: www.cimh.org/calworks.

Chandler, D., Meisel, J., & Jordan, P. (2002). *Policy and Practice Brief #2: Impact of Alcohol and Other Drugs, Mental Health Problems and Domestic Violence on Employment and Welfare Tenure*. California Institute for Mental Health. Available: www.cimh.org/calworks.

Chandler, D., Meisel, J., & Jordan, P. (2002). *Policy and Practice Brief #3:Multiple Risks Threaten Children of TANF Recipients with Alcohol and Other Drug, Mental Health or Domestic Violence Issue*. California Institute for Mental Health. Available: www.cimh.org/calworks.

Chandler, D., Meisel, J., & Jordan, P. (2002). *Policy and Practice Brief #4 Welfare Reform: Personal Stories of Four Women Who Have Faced Alcohol and Other Drug, Mental Health and Domestic Violence Issues*. California Institute for Mental Health.

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[13] The GAO states that 60 percent of those receiving welfare in the year 2000 did not participate in work activities. The states we visited had not collected and analyzed caseload data on the incidence of characteristics that impede employment, such as substance abuse or mental and psychological conditions, making it difficult for them to make informed programmatic decisions to meet the needs of hard-to-employ recipients and to plan for recipients who are likely to reach their time limit on federal benefits. United States General Accounting Office (2001). *Welfare Reform: Moving Hard-to-Employ Recipients Into the Workforce* (GAO-01-368). Washington: United States General Accounting Office.

The Research

In this report we look both at welfare tenure and employment in relationship to AOD/MH/DV issues and to a wide range of other potential hurdles. We present here information drawn from two rounds of intensive research interviews with a random sample of 579 women half had received CalWORKs for at least one year (Kern County) and half were applying for CalWORKs (Stanislaus County[14]) in the spring and summer of 1999.

Participants were required to be:

_ Age 18-59

_ Fluent in English or Spanish

_ Female head of the household (relative-caretakers and two-parent families were not eligible)

Of the Stanislaus study-eligible applicants 71 percent were interviewed (5 percent refusal rate). In Kern, 55 percent of the recertification sample were interviewed (7 percent refusal rate). In both counties most of the attrition was due to the inability of interviewers to reach CalWORKs participants by phone in order to try to schedule an interview. The completion rate for Stanislaus is comparable to that in the two post-welfare reform surveys that have focused on AOD/MH/DV issues of 63 percent and 70 percent.[15] We compared characteristics of the Stanislaus and Kern interviewees with those who were eligible but did not participate in order to detect possible bias created by attrition. In Stanislaus the groups did not differ to a statistically significant degree on any measure. In Kern there are no significant differences between the sample actually interviewed and the population on demographic, geographic, and welfare tenure measures.

As a further test of representivity we replicated a series of analyses using post-stratification weights for race, age, and time on welfare. The raw percentages for AOD/MH/DV need measures (alone and cross-tabulated with whether participants worked at least 26 hours) usually did not differ more than one percentage point from the post-stratification adjusted percentages; in no case did they differ by more than 2 percent.[16] Thus, we feel fairly confident that the study samples are representative of the sampled populations in Stanislaus and Kern. We do not know, however, the extent to which these populations themselves are similar to welfare reform populations in other California counties or in other counties around the country.

Round I and Round II interviews were completed at an interval of 12 months. In Kern County, a total of 273 of 287 Round I respondents were re-interviewed in Round II (95 percent). In Stanislaus County, 311 of the original 356 respondents were re-interviewed (87 percent), however, only 306 of these were

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[14] However, 79 percent had previously received cash aid in the years 1996-1998.

[15] Barusch, A. S., & Taylor, M. J. (1999). *Understanding Families with Multiple Barriers to self-sufficiency* . Salt Lake City: Social Research Institute, University of Utah; Speiglman, R., Fujiwara, L., Norris, J., & Green, R. S. (1999). *Alameda County CalWORKs Needs Assessment: A Look at Potential Health-Related Barriers to self-sufficiency* . Berkeley, CA: Public Health Institute.

[16] Another welfare reform study carefully kept track of the efforts required to increase sample size and concluded home visits did not appear to be worth the effort. They too showed no differences when post-stratified on demographic factors. Teitler, J., Reichman, N., & Sprachman, S. (July 2001). *Cost-Benefit Analysis of Improving Response Rates for a Hard-to-Reach Population* (2001-12-FF). Center for Research on Child Well-Being, Princeton University. Available: http://crcw.princeton.edu/CRCW/papers/papers.htm

eligible for welfare-to-work activities.[17] Unless stated otherwise the tables in this report use these numbers as the denominator of percentages. Tables showing persistence across the two interview rounds use the Round II numbers as only those respondents were present both years.

At the time of the initial interview in the summer of 1999 the welfare-to-work status of study participants in the two counties differed greatly. In Stanislaus, all study participants were just applying for aid. While waiting they were required to participate in orientation and initial training in how to find work (Job Club). In Kern, all study participants had (by the time of their interview) received cash aid for at least one year. They were all mailed a notice of the new welfare to work requirements by December 30, 1998. However, few of the study participants had at the time of the first interview been enrolled in any kind of work activity as it took the county many months to work through the thousands of female head of household cases.

At the time of the second interview, in the summer of 2000, Stanislaus study participants had been subject to welfare-to-work activity requirements for a year. In Stanislaus, only persons working 32 or more hours per week were exempt from work activities (unless meeting other exemption criteria). In Kern, the standard was 26 hours per week. The plan start date was indicative of when the welfare-to-work activities actually were required to start. In Kern, 96% of those with a plan date had a date prior to September 1, 2000 (near the end of the Round II interviews) while 98% of those in Stanislaus did. However, large numbers in each county did not have a plan start date on record 34% of the total sample in Kern and 42% in Stanislaus.[18]

B. Methodology

The variables we used are from the Round II interview. We have not yet compared them with management information system data from welfare, Medicaid and unemployment system data.

The purpose of this analysis is different from that in our recent *Need, Incidence, and Services* report.[19]
 Need for services is a more generic concept than symptoms or situations that interfere with work. We included work interference (harassment at work for DV, getting fired or failing drug test for AOD) in the overall concept of need but were focused on the larger picture of who might need or benefit from treatment, regardless of work status. This involved developing a measure of severe need for each domain which we called objective need. A category of overall need included those who met the objective need category *or* who actually received treatment or services.

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[17] Five persons were initially interviewed after applying for welfare but were then denied eligibility. Details about the research design and methodology are summarized in Appendix A of the *Technical Report* and described in more detail in the first research report, *The Prevalence of Mental Health, Alcohol and Other Drugs, and Domestic Violence among CalWORKs Participants in Kern and Stanislaus Counties,* September 2000. Both reports are available at the CIMH website: www.cimh.org

[18] A Stanislaus representative explains: A plan start date is not entered into GEMS until a WTW contract is completed with the participant. This is sometimes delayed if they did not go through the usual track i.e., were employed full-time, or diverted into behavioral health services. Until that first contract is signed (or a refusal to sign is made), then there is no plan start date. The 18 or 24 month time clock is started by signing the first WTW contract. This usually occurs at assessment after the completion of Job Readiness and Job Track. This is the only means to trigger the beginning of the time clock for WTW. In both counties combined about 13% of those missing a plan start date were child only cases, 17% were neither working nor on welfare, and 26% were working and not receiving welfare. For reasons that are unclear, about 25% had no plan start date but were not working at all and were receiving cash assistance.

[19] Chandler, D., & Meisel, J. (2002). *Alcohol & Other Drugs, Mental Health, and Domestic Violence Issues in CalWORKs Programs: Need, Incidence, and Services*. Sacramento: California Institute for Mental Health.

This way of formulating need for services is appropriate given the approach counties have taken: a) They have not waited for people to fail at employment or employment retention before trying to identify and serve persons with AOD/MH/DV issues; and b) they have not used an employment specific model of treatment.

It is quite possible that someone might need AOD/MH/DV services even if that need is not a direct barrier to *finding* a job. For example, a woman who has escaped an abusive situation may be able to work but still need help dealing with the abusive ex-partner. Or a woman may find employment but perform poorly (due to an alcohol problem, say). Or a woman may find a job but not be able to retain it over time due to mental health problems. Or AOD/MH/DV issues may keep a woman locked in a minimum wage position so that she never can achieve economic independence.

This broad approach to need we took is thus somewhat different from that appropriate to modeling the impact of AOD/MH/DV and other barriers to employment. For example, since overall need also includes those who sought treatment/services, it confounds the impact of treated and untreated AOD/MH/DV issues on finding work. So, instead of using need for services as *the* measure of the extent to which AOD/MH/DV issues are a barrier to work, we explore which of several measures of AOD/MH/DV best predicts working or working more than 26 hours in a week.[20]

C. Organization of the report

The first part of this report focuses on understanding how both welfare and employment status changed for the study participants overall in the year between the first and second interviews. At the time of the first interview, welfare to work requirements were just coming into effect. What changes occurred in both welfare status and work in that year?

The next section profiles each of the individual barriers or hurdles to employment which have been suggested in other studies as having an effect on employment rates. This includes AOD/MH/DV and other silent barriers but also a variety of human capital and situational barriers.

Section three discusses the *combined effect* of these individual barriers on employment rates.

The fourth section models AOD/MH/DV and other barriers using multivariate analysis. This means that we attempt to see what the effect of each hurdle is independent of the effects of other hurdles. Statistical methods permit us to look at the effects of any individual variable (or combination of variables) while all the rest of the variables are artificially held at their mean value. So, for example, we can see the effects of a learning disability independent of the effects of not having worked in the previous year or the effects of low levels of education independent of race/ethnicity.

In the last section we have made the strong assumption that these barriers are causal and then calculated the extent to which employment overall would increase if the barriers were removed or remediated.

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[20] After an initial training (Job Club) and a relatively unstructured job search, CalWORKs clients were required to develop a welfare-to-work plan. The statewide requirement for this plan was 26 hours a week of work or work activities, but some counties adopted a more stringent standard. Stanislaus used 32 hours a week.

PART I: WELFARE AND WORK STATUS AFTER ONE YEAR OF REFORM

A. Welfare

At the time of the first interview 100 per cent of the women in each county were receiving cash aid as new applicants in Stanislaus or recipients for over a year in Kern.[21] By the time of the second interview one year later, at least a quarter no longer received cash aid nor did their children. However, the pattern differed considerably in the two counties.

Table 1: Welfare status at the time of the second interview

Status	Kern N Percent	Stanislaus N Percent
	176	151
Child & Parent Received Cash Aid	64.5	49.7
Child Only Received Cash Aid	31 11.4	29 9.4
Neither Received Cash Aid	66 24.2	124 40.8
Total	273 100.0	304 100.0

Chi-square = 18.0699   p†0.000

While similar percentages in Kern and Stanislaus opted for or were sanctioned to produce the child only status, a considerably higher percentage of Kern respondents were still receiving cash aid along with their children. In Kern a quarter of the clients no longer had any contact with CalWORKs while in Stanislaus it was 41 percent.

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[21] In fact, in Stanislaus because the county required clients to attend Job Club (where they were interviewed) before eligibility was determined 16 of the interviewed clients were ultimately found ineligible. They have been included in previous analyses because they were putatively eligible when interviewed. In the next year seven of the 16 reapplied for aid and were granted it. Those seven have been kept in this analysis, though the other 9 were dropped.

Table 2: Kern Recipients: Years on Welfare at Time of First Interview (first interview timed to closely match recertification date)

Time On Welfare	Number	Percent
One year as of recertification date	45	12.9
Two Years	85	24.5
Three Years	42	12.1
4-5 Years	95	27.4
6-25 Years	80	23.0
Total	347	100.0

B. Employment

The employment status of study participants also differed greatly between Kern and Stanislaus in both rounds largely reflective of their welfare status when sampled. The changes in employment status over a year may also reflect the different approaches to welfare reform in Kern and Stanislaus Stanislaus being considerably more proactive. [22]

Employment change from Round I to Round II. At the time of the Round I interview, 36 percent of the Kern sample was working some amount versus 22 percent in Stanislaus. In Round II, the percentage rose very modestly in Kern to 40 percent but jumped to 49 percent in Stanislaus. The percentage in Kern working at least 26 hours a week (the standard in most counties necessary to be exempt from welfare-to-work activities) in Round I was 24 percent, but only 6 percent in Stanislaus. The increase in Kern was to 33 percent in Round II but to 43 percent in Stanislaus. Thus it appears that in the long-term population in Kern, a fairly high percentage was already working and most of them worked at least 26 hours a week.[23] In Stanislaus, the new applicants were much less likely to be working (especially 26 hours or more a week) but a substantial percentage moved rapidly into employment that met welfare to work activity requirements.

Tables 3 and 4 below show the actual pattern of change across two years for those working at all and those working at least 26 hours a week. Table 5 shows a breakout of the range of hours worked at the time of the second round interview. Over 20 percent of the women in each county worked *more* than forty hours a week a higher percentage than those working less than 26 hours per week (if working at all).

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[22] Stanislaus required applicants to conduct job search and go to Job Club while their application was pending. Stanislaus required 32 hours of work activity rather than the more common 26 hours (prior to July 1999). Stanislaus was one of few counties to require from the beginning community service of those who did not find a job rapidly. In addition, Stanislaus was better organized to follow through on employment issues with participants, since county staff performed both eligibility and employment functions while in Kern the employment function was contracted out.

[23] We used 26 hours as a standard for most analyses. It corresponds to the requirement in most counties prior to July 1999. After that time welfare-to-work requirements increased to 32 hours per week (averaged over the month) for all participants. This does not mean that much employment was required as job search, training etc are also work activities.

Table 3: Change in work status from first to second interview

Working at all at time of interview	Kern N=273 N Percent	Stanislaus N=306 N Percent
Neither year	131 49.2%	137 44.8%
First year only	28 10.5	14 4.6
Second year only	39 14.7	101 33.0
Both years	68 25.6	54 17.6

Table 4: Change in percentage working at least 26 hours a week from first to second interview

Working at least 26 hours a week at time of interview	Kern N=273 N Percent	Stanislaus N=306 N Percent
Not 26 in I or II	158 57.9%	168 54.9%
Over 26 in I Only	25 9.2	7 2.3
Over 26 II Only	48 17.6	118 38.6
Over 26 in I and II	42 15.4	13 4.2

Table 5: Hours worked per week if working (at time of second interview)

Work hours per week	Kern N=108 N Percent	Stanislaus N=153 N Percent
26 or less	18 16.7%	24 15.7%
27-32	23 21.3	28 18.3
33-40	44 40.7	59 38.6
Over 40	23 21.3	42 27.4

Table 6: Time since last worked for pay, by county

Time Since Last Worked for Pay	Kern N Percent	Stanislaus N Percent
Working now	108 39.6%	155 50.9%
In past 6 months	52 19.0	36 11.8
6-12 months ago	18 6.6	23 7.6
1-3 years ago	28 10.3	51 16.8
4-10 years ago	30 10.9	24 7.9
Over 10 years ago	23 8.4	6 2.0
Never for pay	14 5.1	9 3.0
Total	273 100.0%	304 100.0%

Other measures of employment at the time of the second interview. Because job status may change quickly for CalWORKs recipients (hours may change, a second job may be taken or dropped, or a job may be lost or found), the number of hours working at the time of the interview is not a sufficient measure of employment success during the first year of CalWORKs activities.[24]

Table 6 above shows that the 11 percent differential between Stanislaus and Kern among those working now disappears if one looks at work during the prior six months. The percent working now or in the past *year* is also similar (65% for Kern and 70.4% for Stanislaus). And although the Kern sample has somewhat larger percentages in the time periods over four years ago in general the overall distribution does not reveal radically different employment histories.

Table 7 below goes into more detail and shows a frequency distribution for the number of weeks interview respondents reported working in the 12 months prior to the second interview. The differences between the counties in each time range are very small and the percentage having worked some is quite a bit higher than the percentage working at the time of the interview.

Table 7: Weeks or months worked in previous year, by county (Round II)

Time Worked in Past Year	Kern N Percent	Stanislaus N Kern
Did Not Work	81 31.3%	84 28.5%
1-4 Weeks	12 4.6	12 4.1
5-12 Weeks	32 12.4	30 10.2
3-6 Months	38 14.7	44 14.9
6 to 9 Months	21 8.1	40 13.6
9-12 Months	75 29.0	85 28.8
Total	259 100.0%	295 100.0%

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[24] Although all Stanislaus applicants were immediately subject to welfare-to-work requirements, the process of inducting on-going recipients into welfare to work activities in Kern was not rapid, even though the notification of CalWORKs requirements was completed before January 1, 1999 and the Round I interviews were conducted 5 to 9 months later.

C. The intersection of welfare and employment

We constructed a four-fold typology. Clients are classed as either: Working but not receiving welfare at the time of the interview; receiving welfare but not working; working and receiving welfare at the same time; or not working and not receiving welfare. As before we use Round II results since they reflect approximately a year of welfare to work activities/requirements.

Below is what this typology looks like in the random samples overall.

Table 8: Welfare and employment categories at Round II (N-579)

Category	Kern Recipients Percent	Stanislaus Applicants Percent	Combined Percent
Working No Cash	15%	26%	21%
Working & Cash	25	25	25
Only Cash	51	34	42
No Work or Cash	10	15	12

Stanislaus respondents were considerably more likely to have left welfare and be working and less likely to remain on welfare without working. Included in these figures are 10.4 percent of the overall group who became child only cases during the year. They receive the cash aid (or vouchers) that would ordinarily go to their children but do not get their own part of the grant. Their access to food stamps and Medicaid is also more limited than for those still receiving a full grant. Three fourths of the mothers receiving child-only aid are not working. For those working, the same income exemptions apply as ordinarily. Child-only cases where the mother is not working are considered as Only Cash and where working as Working & Cash.

We also did this analysis separating out the persons who were child only welfare recipients. Here is a table showing the breakdown with the added category. The category of not working but not receiving CalWORKs turns out to be comprised in Kern about half and half of those with a child only case. In Stanislaus, there are fewer child only cases: half as many as exist in Kern.

Table 9: Welfare/work status (child only welfare shown separately)

Welfare and work status (child only counted as not receiving cash aid)	Kern N=272 N Percent	Stanislaus N=306 N Percent
Work Not Welfare	43 15.8%	91 29.7%
Welfare Not Work	110 40.4	87 28.4
Work & Welfare	65 23.9	64 20.9
Not Work, Not Welfare	26 9.6	46 15.03
Not Work, Child Only Welfare	28 10.3	18 5.9

Table 10 presents the mean number of weeks worked in the year before the second interview for each of these work/welfare types. In both counties together, those working (and not getting cash aid) at the time of the second interview worked an average of 39 weeks; those working and getting cash worked 35 weeks on average; those getting only cash had worked an average of 8 weeks; and those with no work and no cash aid 13 weeks.

Table 10: Mean number of weeks worked by welfare/work type, by county

Number of weeks worked in past year (based on work and welfare status at time of second interview)	Kern N	Kern Mean Weeks Worked	Stanislaus N	Stanislaus Mean Weeks Worked
Working No Cash	40	41	75	38
Working & Cash	68	37	79	33
Only Cash	125	9	99	7
No Work or Cash	26	14	42	12
TOTAL	259	22	295	23

We also looked at whether in Kern there was an impact on status deriving from prior time spent on welfare. Overall, years on welfare had a minimal effect. For example, of those who had received welfare for only a year at the time of the first interview 18 percent were working and not on welfare compared to 14 percent for those who had received welfare 5 to 25 years. The one group that had a longer time on welfare was those working *and* receiving welfare. This result was true as well when we looked at the months spent on welfare in the 36 months prior to the first round interview among participants in both counties (since 79% of Stanislaus applicants had received cash aid in the prior three years). Again, the most months on aid was among those both working and receiving welfare (significantly more even than those not working or receiving welfare).

Because of a high income disregard in California, overall income is increased if welfare recipients also work. Before time limits this was a viable strategy and so may explain the longevity on welfare of this group.

Another critical factor is the number of times respondents left jobs (voluntarily or were fired or laid off) during the year, as frequent transitions are stressful to parents and children alike.[25] A total of 21% of the sample lost a job during the year (43% left voluntarily, while 45% were laid off or the job ended; 11% were fired). None of the persons who, at the time of the interview, were working and not on welfare or working and on welfare had lost a job. Among those receiving cash only at the interview, a third had lost a job. Among those with neither cash nor a job, 47% had lost a job during the year.

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[25] Moffitt, R., A. Cherlinm, et al. (2002). The Characteristics of Families Remaining on Welfare. Baltimore, Welfare, Children, And Families: A Three-City Study. Working Paper 0202. Also Michelle Ver Ploeg, Preexit Benefit Receipt and Employment Histories and Postexit Outcomes of Welfare Leavers, in Ver Ploeg, M., Moffitt, R., & Citro, C. F. (Eds.). (2002). *Studies of Welfare Populations: Data Collection and Research Issues*. Washington, D.C.: National Research Council, National Academy Press.

PART II: THE EFFECT OF AOD/MH/DV AND OTHER INDIVIDUAL CHARACTERISTICS ON EMPLOYMENT

A. The impact of AOD/MH/DV on employment and welfare tenure

Previous studies of the impact of AOD/MH/DV issues on employment and welfare tenure.

A limited number of studies focus on the effect of AOD/MH/DV on employment and welfare tenure in the TANF era. Below we present the main studies, or in some cases reviews of studies.

Effects of Mental Health

MH problems affect various work-related capacities,[26] but the extent of impact varies by disorder, severity, the presence of other supports and barriers and the receipt of treatment. There is not yet a consistent picture regarding the effects of mental health issues on the employment or welfare tenure of low-income persons. Major recent studies are summarized below:

- Mintz27 performed a meta-analysis of ten studies of depression, which included measures of work impairment. A total of 44 percent of the depressed showed substantial work impairment, including 11 percent who were unemployed.

- Results to date in the Michigan Women Employment Study of welfare recipients are complex. First round results showed major depression, but not other mental disorders, as having a statistically significant negative effect on working 20 hours a week or more.[28] However, the impact of mental health issues on the number of months worked between the first and second round of interviews was significant only when mental health problems co-occurred with human capital or physical health deficits.[29] An analysis over three years shows marginally significant results for mental health diagnoses for employment but not welfare tenure.[30]

- National Household Survey of Drug Abuse data from 1994-1996 show psychiatric disorders to be considerably more prevalent among those on welfare than among other low-income single women (22 vs. 15%). Having a psychiatric disorder was associated with a 25% lower likelihood of working among poor single females.

- Polit and others interviewed 3,400 women receiving welfare in 1995 and reinterviewed them three years later. At follow-up, significant symptoms of depression were less frequent among those working (20%) than among those not working (32%).[31]

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[26] Massel, H. K., Liberman, R. P., Mintz, J., Jacobs, H. E., Rush, T. V., Giannini, C. A., & Zarate, R. (1990). Evaluating the capacity to work of the mentally ill. *Psychiatry, 53*(February), 31-41.

[27] Mintz, J., M. LI, et al. (October 1992). Treatments of depression and the functional capacity to work *Archive of General Psychiatry* 49(10): 761-8.

[28] Danziger, S. (2001). Commentary on Will TANF work for the Most Disadvantaged Families? by Pamela Loprest and Sheila Zedlewski. In R. M. Blank & R. Haskins (Eds.), *New World of Welfare* (pp. 328-333).

[29] Danziger, S., Kalil, A., & Anderson, N. J. (2000). Human Capital, Health and Mental Health of Welfare Recipients: Co-occurrence and Correlates. *Journal of Social Issues, 54*, 637-656:Available on the web at:www.ssw.umich.edu/poverty/pubs.html.

[30] Danziger, S. K., & Seefeldt, K. S. (2002). Barriers to Employment and the "hard to serve": Implications for services, sanctions and time limits. *FOCUS, 22*(1), 76-81.

[31] Polit, D. F., Widom, R., Edin, K., London, A. S., Scott, E. K., & Valenzuela, A. (November 2001). *Is Work Enough? The Experiences of Current and Former Welfare Mothers Who Work*. Manpower Demonstration Research Corporation. Available: http://www.mdrc.org/Reports2001/UC-IsWorkEnough/Overview-IsWorkEnough.htm.

- A Utah study of long-term welfare recipients found that only 11% of respondents who screened positive for the presence of an anxiety disorder were working 20 hours a week compared to 37% of those who did not.[32]

- A survey of over 700 employers of welfare recipients found that rates of mental health problems (as judged by employers) were 7 times as high among those no longer employed as among those currently employed. Effects are strong for those discharged but not for those quitting.[33]

- Moffitt, in a large-scale study of welfare reform in three cities, found that stayers (those who did not leave welfare) were overall highly disadvantaged in comparison with leavers, and that in depression was over-represented among the stayers and the unemployed leavers.[34]

- Wilson did extensive testing on 69 inner-city women who had repeatedly failed to be able to work. He found 67% were screened positive for mental health problems needing service using the SCl-90 caseness criteria. Even more potent as a barrier were severe cognitive deficits.

- Speiglman s welfare reform study of barriers to employment in Alameda County found mental health problems to be a significant barrier to work fifteen months after the initial interviews.[35]

Effects on Employment of Alcohol and Other Drugs

Although there is a wide perception that alcohol and drug problems constitute a significant barrier (significant both in size of group and size of effect) to working under welfare reform, there is relatively little evidence yet to support this view (or its contrary). Most information refers to pre-reform studies or focuses on prevalence estimates or treatment effects not assessing the impact of AOD on employment of TANF recipients.

- Pollock et al. summarize several national surveys and the Women Employment Survey in Michigan concluding that while illegal drug use affects approximately 20 percent of welfare recipients, dependence is actually relatively rare (under 10%) and does not affect overall work rates substantially.[36]

- The best analysis of the prevalence of substance abuse among TANF recipients has taken place in New Jersey. One study showed similar findings to other CIDI studies when based on self-report but much higher rates of serious cocaine use based on hair analysis.[37] Morgenstern demonstrated

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[32] Barusch, A. S., & Taylor, M. J. (1999). *Understanding Families with Multiple Barriers to Self-Sufficiency*. Salt Lake City: Social Research Institute, University of Utah.

[33] Holzer, H., Stoll, M. A., & Wissoker, D. (2001). *Job Performance And Retention Among Welfare Recipients.* Washington, DC: Urban Institute.

[34] Moffitt, R., Cherlinm, A., Burton, L., King, M., & Roff, J. (2002). *The Characteristics of Families Remaining on Welfare*. Baltimore: Welfare, Children, And Families: A Three-City Study. Working Paper 0202.

[35] Dasinger, L., Miller, R. E., Norris, J., & Speiglman, R. (2001, November 20, 2001). *Alameda County CalWORKs Needs Assessment and Outcomes Study: Changes in Economic, Work, Welfare, and Barrier Status 15 Months Post-Baseline*. Public Health Institute. Available: www.phi.org/

[36] Pollack, H. A., Danziger, S. H., Seefeldt, K. S., & Jayakody, R. (2002). *Substance Use Among Welfare Recipients: Trends and Policy Responses*. Chicago: Joint Center for Poverty Research: http://www.jcpr.org/policybriefs/vol4_num2.html. Note, however, that all these studies used the same short form of the CIDI, which is likely to result in a significant undercount. Rates in the current study are considerably higher (based on the full CIDI and other measures of work interference).

[37] Kline, A., Bruzios, C., Rodriguez, G., & Mammo, A. (2000). *1998 New Jersey Substance Abuse Needs Assessment Survey of Recipients of TANF*. Trenton: Department of Health and Senior Services, Division of Alcoholism, Drug Abuse and Addiction Services.

experimentally that determination of persons needing substance abuse treatment was increased by over 100% using special screening methods. Over 10% were referred for treatment considerably higher than the 6% in the best of California counties.[38]

‒ Florida used the ASI to assess substance abuse problems (and other barriers) in the Florida TANF population and found rates far lower than expected. The researchers hypothesized that drug users are dropping off welfare, perhaps returning to the streets. [39]

‒ Metch[40] reviews the literature on the effects of AOD on employment and reports on 100 welfare eligible women who received drug treatment in Florida. Treatment improved work outcomes.

‒ Schmidt performed a six year prospective study with AFDC recipients. Substance abuse did not affect welfare tenure.[41] A later study of depression and substance abuse found negative effects on tenure of depression but not substance abuse.[42]

‒ A meta-analysis of AOD treatment outcomes in California (prior to welfare reform) found a number of positive effects on employment but was neutral on welfare utilization.[43]

‒ Wickizer drew a random sample of those on AFDC in Washington state who had been treated. Compared to a quasi similar group who did not get treatment the study found favorable outcomes in reduction of welfare among those treated including an increase in employment and wages.[44]

‒ Speiglman s welfare reform study of barriers to employment in Alameda County found heavy drinking to be a barrier to work in bivariate analysis but the association was not statistically significant in multivariate analysis.[45] Fifteen months after the initial interviews alcohol dependence but not illegal drug use had significant bivariate relationships with working.[46]

Morgenstern, J., Riordan, A., Dephilippis, D., Irwin, T., Blanchard, K., McCrady, B. S., & McVeigh, K. (2000). Specialized Screening Approaches Can Substantially Increase the Identification of Substance Abuse Problems Among Welfare Recipients. *New Jersey Department of Human Services Research Notes*.

[38] Morgenstern, J., Riordan, A., Dephilippis, D., Irwin, T., Blanchard, K., McCrady, B. S., & McVeigh, K. (2000). Specialized Screening Approaches Can Substantially Increase the Identification of Substance Abuse Problems Among Welfare Recipients. *New Jersey Department of Human Services Research Notes*.

[39] Merrill, J. C., Ring-Kurtz, S., Olufokunbi, D., Aversa, S., & Sherker, J. (2001). Women on welfare: a study of the Florida WAGES population. *J Health Soc Policy, 14*(2), 25-43.

[40] Metsch, L. R., McCoy, C. B., Miller, M., McAnany, H., & Pereyra, M. (1999). Moving substance-abusing women from welfare to work. *J Public Health Policy, 20*(1), 36-55.

[41] Schmidt, L., Weisner, C., & Wiley, J. (1997). Substance Abuse and the Dynamics of Welfare Dependency. *Submitted to American Journal of Public Health*.

[42] Zabkiewicz, D. M., Schmidt, L., Wiley , J. A., & Dohan, D. (2001). *Patterns of welfare receipt among women: The role of depression and substance abuse*. Berkeley: Public Health Institute, Alcohol Research Group.

[43] Gerstein, D. R., Johnson, R. A., Foote, M., Suter, N., Jack, K., Harwood, H. J., Fountain, D., & al., e. (1994). *Evaluating Recovery Services: The California Drug and Alcohol Treatment Assessment (CALDATA). Submitted to California Department of Alcohol and Drug Programs*. Sacramento: NORC & Lewin-VHI, Inc.

[44] Wickizer, T. M., Campbell, K., Krupski, A., & Stark, K. (2000). Employment Outcomes among AFDC Recipients Treated for Substance Abuse in Washington State. *The Milbank Quarterly, 78*(4), 585-608.

[45] Driscoll, A. K., Speiglman, R., & Norris, J. (2000). *Alameda County CalWORKs Needs Assessment Barriers Associated with Working, Hardships of Daily Living, Progress through CalWORKs and Work-related Activities*. Berkeley: Public Health Institute.

[46] Dasinger, L., Miller, R. E., Norris, J., & Speiglman, R. (2001, November 20, 2001). *Alameda County CalWORKS Needs Assessment and Outcomes Study: Changes in Economic, Work, Welfare, and Barrier Status 15 Months Post-Baseline*. Public Health Institute. Available: www.phi.org/

Effects on Employment of Domestic Violence

The impacts of domestic violence on welfare tenure and employment are complex and appear multi-directional depending on the situation, DV can either result in reduced employment or increased employment.

- High prevalence of DV among AFDC populations has been thoroughly documented.[47] The CalWORKs Project *Prevalence Report* contains a table summarizing this research.

- Tolman and Raphael have reviewed the literature investigating DV and welfare and work through 1999.[48] A number of studies document active interference with work or training by an abuser.

- One study with AFDC recipients have shown not only high prevalence rates but also negative impact on employment.[49] Others, however, have shown abused women may be *more* likely to work and to work full-time, possibly in an effort to become financially independent and leave the abuser.[50]

- Speiglman s welfare reform study of barriers to employment in Alameda County found domestic violence to be a barrier to work in bivariate analysis but the association was not statistically significant in multivariate analysis.[51] Fifteen months after the initial interviews partner control but not physical abuse had significant bivariate relationships with working.[52]

- Danziger s Women Employment Study did not find that DV had significant effects on employment if DV was experienced only one year (or prior to 1997) but did have an effect if experienced in two or more years.[53]

MH, DV and AOD measures

Mental health. There are a variety of ways of measuring mental health problems. During the 1960s through the 1970s epidemiological studies used symptom scales. Starting in the late 1970s with the Ecological Catchment Area study and continuing through the development of the CIDI, sponsored internationally by WHO, the focus has been on measuring diagnosis-defined cases. In welfare reform studies virtually all measurement has been using one or another version of the CIDI or the CES-D, a depression scale developed by the Centers for Disease Control.

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[47] For example: Allard, M. A., Albelda, R., Colten, M. E., & Cosenza, C. (1997). *In Harm's Way? Domestic Violence, AFDC Receipt, and Welfare Reform in Massachusetts*. Boston: University of Massachusetts;

[48] Tolman, R., & Raphael, J. (2000). A Review of Research on Welfare and Domestic Violence. *Journal of Social Issues, In Press*.

[49] Browne, A., & Bassuk, S. (1997). Intimate Violence in the Lives of Homeless and Poor Housed Women: Prevalence and Patterns in an Ethnically Diverse Sample. *American Journal of Orthopsychiatry, 67*(2), 26-29. Tolman and Raphael, ibid, report an unpublished Washington state study that showed physical and sexual abuse were associated with employment instability.

[50] Allard op cit.

[51] Driscoll, A. K., Speiglman, R., & Norris, J. (2000). *Alameda County CalWORKs Needs Assessment Barriers Associated with Working, Hardships of Daily Living, Progress through CalWORKs and Work-related Activities*. Berkeley: Public Health Institute.

[52] Dasinger, L., Miller, R. E., Norris, J., & Speiglman, R. (2001, November 20, 2001). *Alameda County CalWORKs Needs Assessment and Outcomes Study: Changes in Economic, Work, Welfare, and Barrier Status 15 Months Post-Baseline*. Public Health Institute. Available: www.phi.org/

[53] Danziger, S. K., & Seefeldt, K. S. (2002). Barriers to Employment and the "hard to serve": Implications for services, sanctions and time limits. *FOCUS, 22*(1), 76-81.

In our first report, the *Prevalence Report,* we focused on actual diagnoses (measured with the CIDI), since they are the most widely accepted way of defining a case. However, we also used a well-accepted symptom scale, the BASIS-32, in each interview. In our second report, *Need, Incidence and Services,* a score on the BASIS-32 equivalent to that of persons in a norming group who were entering outpatient treatment served as our criterion for objective need. A major difference between the diagnostic and symptom scale approaches is that the diagnoses apply to any time within the prior year whereas the symptom scale asks about behaviors in the previous week. In the interviews, we also used an auxiliary scale of the BASIS-32 which asks how many days of the last 30 the mental health symptoms required the respondent to be unable to carry out normal activities of daily life (and the number of days that daily activities needed to be cutback). Finally, our measure of overall need included whether a respondent had seen a mental health professional a substantial number of women had, some even though they did not meet our objective criteria for serious mental health issues.

These various measures have some overlap but there is also considerable dispersion. Since there is little evidence in the literature which type of measure is most likely to be associated with employment success or failure we explore this issue empirically. In Table 11 we show the percentage in each county who had each measure of mental health issues in Round II. In Table 12 we present percentages of persons who do and do not have each of these mental health characteristics who worked at least 26 hours a week at the time of the second interview. The overall N for Stanislaus is 306 and for Kern is 273 (with small variations by variable).

Table 11: Comparison of different measures of mental health status, by county

Measure of Mental Health Status	Kern N	Kern Percent of Sample	Stanislaus N	Stanislaus Percent of Sample
Overall mental health need	91	33.3%	101	33.0%
Outpatient level symptom score	54	19.8	46	15.0
Unable to do daily activities 5 of last 30 days	41	15.0	43	14.0
Unable to do daily activities at least 1 of last 30 days	58	21.0	54	17.6
Unable to do or had to cut down daily activities at least 5 of last 30 days	61	22.3	62	20.3
Diagnoses				
Major Depression	52	19.0	70	22.9
Generalized Anxiety	30	11.0	42	13.7
Social Phobia	35	12.8	23	7.5
Panic Disorder	38	13.9	33	10.8
PTSD	28	10.2	45	14.7
Any of five diagnoses	87	31.9	113	36.9
At least two of five diagnoses	48	17.6	56	18.3

As seen in Table 12, virtually all of the mental health measures are strongly related to working 26 hours a week in Kern; in Stanislaus many of the measures are less strongly related (smaller percentage difference) and five rather than one measure are not statistically significant at the 0.05 level (gray shading). Seemingly the individual diagnoses are least predictive, since all five are significant in only one of the two counties.

In national studies of the influence of mental health problems on disability (lost work days) depression, panic attack, multiple diagnoses, and co-morbidity with AOD or health problems have the greatest influence.[54] Co-morbidity with AOD is discussed later. Co-morbidity with the SF-12 measure of serious health problems is presented below, and health is used as a covariate in multivariate analyses later.

Table 12: Effect of alternative measures of mental health on working at least 26 hours a week, by county

Measure of Mental Health Issues	KERN			STANISLAUS		
	Percent Over 25 if No MH	Percent Over 25 if Have MH	Probability Due to Chance	Percent Over 25 if No MH	Percent Over 25 if Have MH	Probability Due to Chance
Overall mental health need	41%	18%	0.00	45%	38%	0.20
Outpatient level symptom score	39	9	0.00	45	28	0.03
Unable to do daily activities at least 5 of last 30 days	38	5	0.00	47	16	0.00
Unable to do daily activities at least one of last 30 days	39	10	0.00	47	22	0.00
Unable to do or had to cut down daily activities 5 of last 30 days	41	5	0.00	48	24	0.00
Diagnoses						
Major Depress.	35	25	0.17	46	31	0.03
General. Anxiety	37	3	0.00	45	31	0.09
Social Phobia	37	9	0.00	44	30	0.21
Panic Disorder	37	8	0.00	45	27	0.06
PTSD	36	7	0.00	44	33	0.16
Any of five diagnoses	39	20	0.00	47	36	0.08
At least two of five diagnoses	39	4	0.00	46	30	0.04
Unable to do daily activities 5 of last 30 days *and* significant health problem	36	7	0.00	45	19	0.01

[54] Goldberg, R. J., & Steury, S. (2001). Depression in the workplace: costs and barriers to treatment. *Psychiatric Services 52*(12), 1639-1643. Zwerling, C., Whitten, P. S., Sprince, N. L., Davis, C. S., Wallace, R. B., Blanck, P. D., & Heeringa, S. G. (2002). Workforce participation by persons with disabilities: the National Health Interview Survey Disability Supplement, 1994 to 1995. *J Occupational and Environmental Medicine, 44*(4), 358-364. Kessler, R. C., Greenberg, P. E., Mickelson, K. D., Meneades, L. M., & Wang, P. S. (2001). The effects of chronic medical conditions on work loss and work cutback. *J Occupational and Environmental Medicine, 43*(3), 218-225.

In order to get an indication of the extent to which the variables are measuring the same thing (affect the same people), we have selected the three that appear to have the most effect on working 26 hours a week across both counties, namely, being equivalent to outpatient symptom scores,   unable to do daily activities 5 of out of past 30 days or more, and at least two of five diagnoses. Figure 1 below is a Venn diagram of the overlap between them *using measures from the two counties combined*, since they are strongly significant in both counties. Each of the measures affects roughly the same proportion of respondents overall, somewhere between 15 and 20 percent. The biggest subgroup is those that are positive on all three measures (9 percent of the population). Twenty-six percent of the population (in each county and overall) fits the criteria for one or more of these conditions.

Overall, 45 percent of those without *any* of the three factors worked at least 26 hours a week compared to 19 percent with any of the three.

We will use inability to perform daily activities five of the last 30 days as the primary mental health measure in what follows, not only because it has the greatest face validity in reference to work but because the regression analyses to be presented later show that it is a better predictor of work activity than the other two most likely measures when the other barriers are controlled statistically.

Figure 1: Overlap of three MH measures (both counties combined)

Venn Diagram
N = 579

Unable Daily (15 %)
16 — 3 %
11 — 2 %
7 — 1 %
50 — 9 %
18 — 3 %
21 — 4 %
26 — 4 %
High Symptoms (17 %)
Min 2 Dx (18 %)
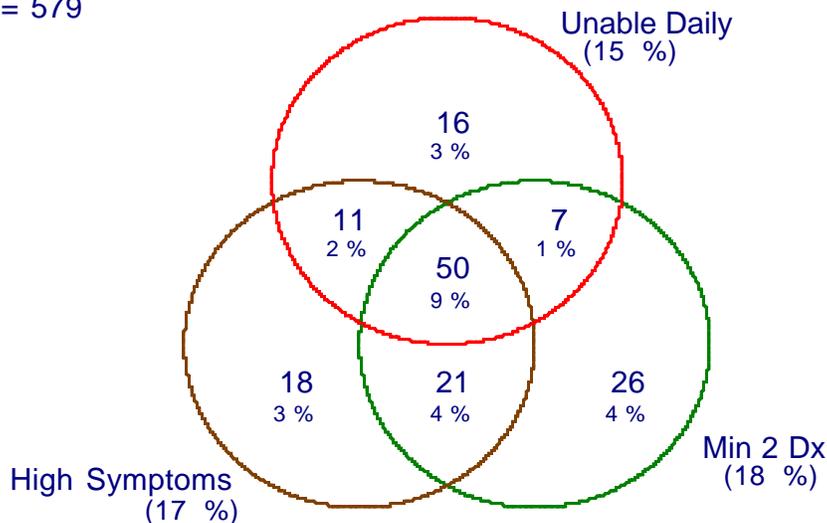
Domestic violence. With regard to domestic violence, or intimate partner abuse, there is no widely accepted epidemiological definition of a case. The instrument most often used, the Conflict Tactics Scale (CTS), is limited in the range of behaviors it measures and the model of violence it measures. We have, however, used many of the items in the CTS as they permit comparability. We have adopted measures of emotional abuse and controlling behaviors from a 1993 national survey in Canada and the

1995 National Institute of Justice survey in the United States.[55] We restricted our definition, as well, to acts committed by a current or past partner. Incidents were recorded separately for the previous year and any time in the past. Separate measures were included for having experienced child physical and sexual abuse.

Table 13 shows the percentage in each county meeting the criteria for each measure of domestic violence. In Kern, most of the measures show a strong effect (percentage difference) on working 26 hours or more a week (Table 14). In Stanislaus, none of the measures rises to statistical significance, although the overall measure of needing or getting DV services comes closest. We looked at a number of other possible measures but the Ns were too small for analysis: these included the recency of the abuse, whether the woman had left her partner at sometime in the year due to abuse, and how much a woman still saw her abuser even if she was separated from him.

Table 13: Comparison of different measures of domestic violence in prior year, by county

Measure of Domestic Violence	Kern N	Kern Percent of Sample	Stanislaus N	Stanislaus Percent of Sample
Any reported domestic violence	83	30.4%	115	37.6%
More types of abuse than mean of 4.7	31	11.4	46	15.0
Nine or more types of abuse	15	5.5	24	7.8
At least 1 type physical abuse	37	13.5	57	18.6
At least 2 extreme control behaviors	43	15.7	60	19.6
Current partner was the abuser	41	15.0	46	15.0
Partner interferes with work	16	5.9	38	12.4
Serious abuse[56] in Round II	41	15.0	62	20.3
Serious abuse in Round I *and* Round II	19	7.0	37	12.1
Common and less serious abuse [57]	33	12.0	47	15.4
Partner still violent at second interview	32	11.7	45	14.7
Needed or got DV services	59	21.6	99	32.3
PTSD due to adult trauma	17	6.2	41	13.4
Child sexual/physical abuse[58]	50	18.3	46	15.0

[55]Johnson, H., & Sacco, V.-F. (1995). Researching violence against women: Statistics Canada's national survey. *Canadian-Journal-of-Criminology, 37*(3), 281-304; Tjaden, P., & Thoennes, P. (1998). *Prevalence, Incidence, and Consequences of Violence Against Women: Findings From the National Violence Against Women Survey* (http://www.ncjrs.org/txtfiles/172837.txt): National Institute of Justice, Violence Against Women Office.

[56] Defined as: physical injury; having been choked or beaten-up; stalking; threats by the abuser to kill the woman or himself or threats to kidnap the children or call CPS; and preventing the woman from working or harassing her at work.

[57] This category encompasses frequent types of non-physical abuse (insults, jealousy) that were judged less serious than what we have termed serious abuse.

[58] This category encompasses only those reporting child sexual or physical abuse who reported it was worse than abuse experienced as an adult (if any).

Table 14: Effect of different measures of domestic violence[59] on working at least 26 hours, by county

Measure of Domestic Violence Issues	KERN			STANISLAUS		
	Percent Over 25 if No DV	Percent Over 25 Hours If DV	Probability Due to Chance	Percent Over 25 if No DV	Percent Over 25 Hours If DV	Probability Due to Chance
Any reported domestic violence	37%	24%	0.04	42%	43%	0.85
More types of abuse than mean of 4.7	35	19	0.08	44	37	0.38
Nine or more types of abuse	34	20	0.37	44	33	0.32
At least 1 type physical abuse	35	19	0.05	43	40	0.68
At least 2 extreme control behaviors	35	23	0.14	43	43	0.92
Partner was abuser	35	22	0.10	43	43	0.92
Partner interferes with work[60]	35	6	0.02	43	42	0.92
Serious abuse in Round II	37	17	0.02	43	40	0.66
Serious abuse in Round I *and* Round II	35	10	0.03	43	41	0.77
Common & less severe abuse	33	36	0.38	42	49	0.66
Needed or got DV services	37	19	0.01	46	36	0.11
Partner still violent when interviewed	35	19	0.07	44	36	0.29
Abuse escalated from Round I to II	33	22	.49	43	31	0.37
PTSD due to adult domestic violence	35	6	0.01	44	34	0.23
Child sexual/physical abuse	32	36	0.61	42	46	0.67

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[59] More information on these variables is contained in the *Prevalence Report* and the *Need, Incidence and Services: Technical Report*, available at: www.cimh.org/calworks
[60] At least one of seven measures of work interference was endorsed.

Unlike mental health measures, which affected respondents in both counties in similar ways, the domestic violence measures show little consistency across counties a quite unexpected result. Below we explore some of the possible reasons for the difference in the impact of DV in the two counties.

First, not *all* measures were different in the two counties. Measures that include the less severe and more frequent types of abuse, in particular, did not show this difference. Look, in Table 14, at common and less severe abuse. In *both* counties women who only reported these common but less severe types of abuse worked *more* than women not reporting them (although the difference is not statistically significant). Another measure compares women who reported a very high number of types of abuse (nine or over). In this case we find that the percentage difference between those with and without this type of abuse in Kern is 14 percentage points while in Stanislaus it is 11 percentage points, so a very small difference. In neither case, though, is this percentage difference large enough to be significant. A similar pattern is found with the variable measuring whether abuse escalated from Round I to Round II (in terms of seriousness). The percentage difference is about the same in both counties, but in neither county is it significant (due to the small N).

Second, while the anomaly is very strong for serious abuse and for physical abuse, it is less so for needed DV services (which includes those who *got* services). Women with DV service needs are less likely to work in *both* counties, though the difference (46% to 36%) is not quite significant in Stanislaus. That is, not only do some measures not show a difference, but the most inclusive measure, DV service need, shows much *less* of a county difference than do other more objective measures.

Third, there is confounding with whether or not the woman lives with her husband. That is, while living with a husband is not in itself associated with working at least 26 hours a week (38% worked if living with husband or not), it *is* associated with county (46% in Kern live with their husband vs. 35% in Stanislaus) as is need for DV services (18% in Kern, 25% in Stanislaus). Table 15 shows what happens to the differential impact by county of need for DV services on work when we control for living with husband.[61] Among those women who live with their husband, there is a strong negative impact of DV need on working at least 26 hours in *both* counties (although it is stronger in Kern). While among those women not living with a husband, the impact of DV need on working is not significant in *either* county. There is still some differential by county for both those living with a husband and not, so partner status does not explain the county difference entirely, but it does go quite a ways toward an explanation. This finding makes intuitive sense, too, since women not living with a husband are solely responsible for the economic well-being of themselves and their children and are thus likely to be highly motivated to find employment. Note that the variable that is useful here is whether the woman currently lived with her husband, *not* whether she had any current romantic partner or whether the current partner had committed the abuse.

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[61] In multiple logistic regression, county was significant, the interaction of county and partner-status was significant, and the interaction of DV need and partner-status was significant. The interaction of county and DV need was no longer significant.

Table 15: Effect of DV service needs on working 26 hours a week, by county and partner status

| PARTNER STATUS | KERN: Percentage who work at least 26 hours | | STANISLAUS: Percentage who work at least 26 hours | |
	Have DV Need N %	No DV Need N %	Have DV Need N %	No DV Need N %
Live with Husband	2 8%	47 46%***	5 21%	34 40%+
Do not Live with a Husband	5 20%	36 29%NS	24 44%	68 47% NS

N is the numerator not the denominator. I.e. of 24 persons (figure not shown), 2 or 8% worked if they had a need and had a partner. The denominator is different for the two rows but can be calculated by solving for N as in: .08*N=2.

Another factor that allows us to specify the effects further is age. (See Table 16). We used over age 35 as a indicator of likely difficulty in finding/retaining work. There are significantly more persons in Kern over age 35 than in Stanislaus (40% vs. 31%). When the effects of needing DV services on working at least 26 hours a week are broken out by those over 35 and those under 35, we see that for those *over* age 35 there is a significant effect of DV in both counties. For those under 36, there is a very strong interaction: only 7% of women in Kern working at least 26 hours a week while in Stanislaus the figure is 60%. So women who experienced serious domestic violence had lower rates of working 26 hours in both counties if they were older, but only in Kern if they were younger. In fact, in Stanislaus, younger women with DV needs were much more likely than in the population overall to be working 26 hours.

Table 16: Effect of DV service needs on working 26 hours a week, by county and age

| AGE STATUS | KERN: Percentage who work at least 26 hours | | STANISLAUS: Percentage who work at least 26 hours | |
	Have DV Need N %	No DV Need N %	Have DV Need N %	No DV Need N %
Age 35 and under	1 7%	34 36%**	12 60%	34 45%NS
Over age 35	6 18%	49 38%*	17 29%	68 44%*

N is the numerator not the denominator. The denominator is different for the two rows.

There is also a differential effect of low education (no HS degree). The respondents in Stanislaus are significantly more likely *not* to have at least a high school degree (44% vs. 34% in Kern). In Stanislaus, if the respondent did not have a HS degree there is a nearly significant difference in working at least 26 hours (23% if DV needs, 38% otherwise), but no difference (46% vs. 48%) if she did have a degree. In Kern DV had an impact at both levels of education, although a greater one with no HS degree. (See Table 17.)

Table 17: Effect of DV service needs on working 26 hours a week, by county and education

HIGH SCHOOL STATUS	KERN: Percentage who work at least 26 hours		STANISLAUS: Percentage who work at least 26 hours	
	Have DV Need N %	No DV Need N %	Have DV Need N %	No DV Need N %
No HS Degree	0 0%	28 28%**	7 23%	28 38%
HS Degree	23 7%	45 55%*	22 46%	74 48%

N is the numerator not the denominator. The denominator is different for the two rows.

There is also an important difference in the two counties regarding the effect of receiving DV professional services. (See Table 18.) In Stanislaus, 24 of the women with DV needs had seen a DV counselor, a physician or other DV professional, and 12 (50%) of these were working at least 26 hours a week. In Kern, only 12 persons had seen a DV professional, but only 1 (8%) was working at least 26 hours. This difference is enough so that among those *not* having seen a DV professional in Stanislaus the association of DV needs to working 26 hours is significant: 31% worked if they had DV needs vs. 45% if not.

Table 18: Effect of DV service needs on working 26 hours a week, by county and receipt of services

SERVICE STATUS	KERN: Percentage who work at least 26 hours		STANISLAUS: Percentage who work at least 26 hours	
	Have DV Need N %	No DV Need N %	Have DV Need N %	No DV Need N %
Saw DV Professional	1 8%	0 0%	12 50%	0 0%
Did not see DV Professional	6 16%	82 37%**	17 31%	102 45%+

N is the numerator not the denominator. The denominator is different for the two rows.

Another variable that appears to have an effect (but the N s are too small to be statistically significant) is whether the respondent ever used welfare to escape a DV situation. (Table not shown.) In Stanislaus, there is no difference in the percent working if DV never caused use of welfare (45% if have no DV needs vs. 41% if do); but among those who have used welfare to escape there is a substantial percentage difference (43% of those with no DV needs work [N=30] vs 27% of those with DV needs [N=22]).

Table 19 shows the final multivariate model fitted using the variables described above.[62] Need for DV services is no longer significantly different by county when the interactions with having a partner, age

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[62] Fit was determined by minimizing the AIC.

over 35 and not having a high school degree are included. (None of the three way interactions were significant.)

Table 19: Logistic regression of DV related variables on working 26 hours or more in the week, both counties combined[63]

Predictor	Odds Ratio	Confidence Interval
County	0.51**	0.32 — 0.80
Interaction of Need DV & have a partner	0.34**	0.13 — 0.88
Interaction of Need DV & no high school degree	0.30*	0.12 — 0.75
Interaction of Need DV & over age 35	2.36+	0.97 — 5.74
Interaction of County and have a partner	1.96*	1.15 — 3.34
Interaction of County and Need DV services	0.49 NS	0.18 — 1.35

+ significant at 10%; * significant at 5%; ** significant at 1%

The predicted probabilities of working 26 hours a week based on the model containing these interactions were significantly different for those with and without need for DV services in both counties.

Table 20: Predicted probability of working 26 hours, adjusted for interactions of DV need and County with age, education and partner status[64]

	Probability of working at least 26 hours	
	Kern	Stanislaus
NO DV NEED	.37	.45
DV NEED	.14**	.37**

Although not all measures show the same anomaly of work being much more impacted in Kern than Stanislaus, and although the interactions with partner status, age, receipt of services, applying for welfare to leave an abusive situation, and education explain some of the differences, the overall pattern is still very clear for most measures in Kern domestic violence of almost any type is strongly associated with low rates of working, while the association in Stanislaus is much weaker overall, though strong in some subgroups.

In fact, based on the analyses attempting to explain the anomaly in Stanislaus, there are a number of factors that appear to have a particularly negative effect on women having DV needs in Kern.

⎽ DV and did not graduate from HS: 0 of 19 work at least 26 hours

⎽ DV and under age 36: 7% are working, 1 of 15 work at least 26 hours

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[63] The analysis was redone creating a four-part variable for each interaction, ie Need DV and Over Age 36 included Need+Over 36 Need+Under 36, NoNeed=Over36 and NoNeed+Under36. The basic results are similar, although in this version of the model, county was not significant. The predicted values are from this model.

[64] Statistical significance of differences in probabilities tested with t test. For Kern t=15.15, p<0.000; for Stanislaus t=5.04, p<0.000.

   _   DV and have serious health problems: 4% (1 of 25) work at least 26 hours

   _   DV and no driver s license: 0 of 19 work at least 26 hours

   _   DV and need MH treatment: 0 of 18 work at least 26 hours

So for the Kern respondents, it appears that the *combined* effect of domestic violence and human resource or situational barriers is very strong.

Alcohol and other drugs

Table 21 shows the percentage of each county sample having each AOD indicator. Each county has roughly the same percentage of persons with an AOD need for service (next to last row): about 13%, and a slightly higher percentage, 16% to 20%, who use illegal drugs. Much smaller percentages are actually dependent on alcohol or other drugs.

Table 22 shows the effect of each indicator on being employed at least 26 hours a week at the time of the second interview. Based on the percentage difference between those working and not, the strongest measure appears to be alcohol dependence. Drug dependence is strong in Stanislaus but not Kern, although that may be due to the very small N of 6 persons. Alcohol *or* drug dependence is strong in both counties. Adding abuse dilutes the effect considerably (it is not statistically significant in Kern). On the other hand adding in flunking a job drug test or interviewer report that the respondent was under the influence increased the effect. The overall strongest measure appears to be one that includes dependence or abuse, work-related problems, and whether or not a respondent reported receiving AOD treatment in the prior 12 months. (Almost as many persons received treatment who were not classified as having an abuse or dependence diagnosis as did those who were.)

Table 21: Comparison of different measures of substance abuse, by county

Measure of AOD Issues	Kern N	Kern Percent of Sample	Stanislaus N	Stanislaus Percent of Sample
Alcohol Dependence	11	4.0%	9	2.9%
Alcohol Abuse or Dependence	14	5.1	16	5.2
Any Illegal Drug Use	44	16.1	62	20.3
Drug Dependence	6	2.2	11	3.6
Drug Dependence or Abuse	7	2.6	18	5.9
Alcohol *or* Drug Dependence	15	5.5	16	5.2
Alcohol or Drug Abuse or Dependence	18	6.6	27	8.8
Alcohol or Drug Abuse or Dependence or Work-Related Impairment	23	8.4	36	11.8
NEED: Alcohol or Drug Abuse or Dependence or Work-Related Impairment OR Received AOD Treatment	34	12.4	42	13.7
Alcohol or Drug Abuse or Dependence or Work-Related Impairment or Received AOD Treatment, OR Binge Drinking, or a Self-Definition as an Alcoholic or Problem Drinker or as a Drug Addict or Problem Drug User.	76	27.8	91	29.9

Table 22: Effect of different measures of substance abuse on employment, by county

Measure of AOD Issues	KERN			STANISLAUS		
	No AOD % Over 25 Hours	AOD % Over 25 Hours	Probability Due to Chance	No AOD % Over 25 Hours	AOD % Over 25 Hours	Probability Due to Chance
Alcohol Dependence	34%	9%	0.09	44%	11%	0.05
Alcohol Abuse or Dependence	34	14	0.13	43	31	0.34
Any Illegal Drug Use	35	20	0.05	46	31	0.03
Drug Dependence	33	33	0.99	44	9	0.02
Drug Dependence or Abuse	33	29	0.80	45	11	0.00
Alcohol *or* Drug Dependence	34	20	0.27	44	12	0.02
Alcohol or Drug Abuse or Dependence	34	22	0.32	44	26	0.06
NEED: Alcohol or Drug Abuse or Dependence or Work-Related Impairment	34	17	0.10	45	25	0.02
Alcohol or Drug Abuse or Dependence or Work-Related Impairment OR Received AOD Treatment	36	15	0.01	45	26	0.02

Combined measures of AOD/MH/DV

Unless stated otherwise, from now on in this report we will be using the measures of AOD/MH/DV that appear to have the greatest impact on employment.

> For mental health: mental health impairment as defined by being unable to carry out activities of daily life at least 5 of the prior 30 days due to MH symptoms

> For domestic violence: serious abuse, defined as physical injury; having been choked or beaten-up; stalking; threats by the abuser to kill the woman or himself or threats to kidnap the children or call CPS; and preventing the woman from working or harassing her at work

> For AOD: overall need for AOD services as defined by dependence/abuse diagnosis or stated need for treatment, having received treatment, or having work-related AOD issues (including being under the influence at the research interview)

In Table 23 we show the effect of the AOD, MH, and DV separately and in combination. Because the N s are so small in some categories we also show the combined counties. The differences in each county and combined are statistically significant. However, it is clear that the only consistent large difference is for mental health alone in both counties. AOD and DV behave somewhat differently in the two counties, so while there is an effect it is much smaller. Combinations of conditions (cases in which one woman has two or more conditions) showed a large effect in general, but much less in Stanislaus than Kern.

Table 23: Round II Comparison of impact of AOD/MH/DV measures separately and combined, by county and total (MH=Unable 5 of last 30 days; AOD=Overall need; DV=Serious Abuse)

Measure of Domestic Violence	Kern N in Sample	Kern Percent of N Working 26+ Hours	Stanislaus N in Sample	Stanislaus Percent of N Working 26+Hours	Both Counties N in Samples	Combined Percent of N Working 26+ Hours
None	187	41%	201	48%	388	45%
MH only	27	7	23	17	50	12
AOD only	15	27	13	38	28	32
DV only	26	27	38	47	64	39
MH&AOD	3	0	7	0	10	0
MH&DV	6	0	8	37	14	21
AOD&DV	4	0	11	36	15	27
All Three	5	0	5	0	10	0
Total	273	100%	306	100%	573	100%

Table 24 deals with the issue of small N s by combining all instances of overlap of two or three conditions. That is, overlap is two or more conditions of AOD, MH or DV in any combination. In Kern none of the 18 cases with overlap were working 26 hours or more (0 percent) compared to the 38 percent working among those with no overlapping conditions. In Stanislaus 7 out of 31 persons with overlapping conditions were working (23 percent) as opposed to the 45 percent of those with no overlapping conditions.

Table 24: Percent working 26 plus hours a week if *two or more* AOD/MH/DV domains, by county

Measure of AOD Issues	KERN			STANISLAUS		
	Not Overlapping Issues N Percent	Issues Overlap N Percent	Prob. Due to Chance	*Not* Overlapping Issues N Percent	Issues Overlap N Percent	Prob. Due to Chance
Working 26 Hours or More a Week	90 35%	0 0%	0.00	124 45%	7 23%	0.02

AOD/MH/DV in relationship to other measures of employment and welfare tenure

Effects of AOD/MH/DV on failure to be working either year. A strong indication of difficulty in employment is if a respondent was *not* working at least 26 hours a week at the time of *either* interview round. That is, at each interview when asked, are you working (26 hours a week) now, the answer was no. To match this two year employment measure we use two year AOD/MH/DV measures as well, dividing the sample into those who did not have an AOD/MH/DV condition either year, those who had one only

the first year, those who had one only the second year, and those who had one in both years. We would expect that there would be clear gradations between those with no AOD/MH/DV issue, those with an issue in only one year, and those with an issue in both years.

Table 25: Percent who were not working 26 hours a week either interview round, by county and mental health impairment over two years

Measure of MH Issue	KERN N	KERN Percent Not Working 26+ Hours Either Round***	STANISLAUS N	STANISLAUS Percent Not Working 26+ Hours Either Round**
Not MH impaired either	196	49%	116	50%
MH impaired I only	26	72	19	58
MH impaired II only	17	77	22	73
MH impaired I & II	18	95	11	85
Total	273	100%	306	100%

***=p<0.00 **=p<0.01

Using the mental health measure of unable to do daily activities at least five of the previous 30 days, there is a clear and statistically significant effect reflecting severity of the MH measure over time. In both counties, about 50 percent of the sample did not work 26 hours a week at the time of either interview. For respondents who reported MH impairment in only one of the two years, between 58 and 77 percent did not work 26 hours either year while 85 to 95 percent of those with a MH impairment both years did not work 26 hours either year.

Table 26: Percent who were not working 26 hours a week either interview round, by county and AOD need for services over two years

Measure of AOD Issue	KERN N#	KERN Percent Not Working 26+ Hours Either Round	STANISLAUS N#	STANISLAUS Percent Not Working 26+ Hours Either Round
Not AOD service need	126	57%	124	53%
AOD need I only	14	56	21	60
AOD need II only	11	65	17	74
AOD need I & II	7	70	6	46
Total	273	100%	306	100%

***=p<0.00 **=p<0.01

Table 26 shows the same cross-tabulation using AOD service need as the explanatory variable. The numbers in some of the cells are quite small, which may contribute to the lack of a statistically significant trend in either county.

Table 27 presents the same two-year data using serious domestic violence as the explanatory variable. Again, the trend over the two years is not significant in either county, and in Stanislaus there is essentially no effect due to the presence of serious domestic violence.

Table 27: Percent who were not working 26 hours a week either interview round, by county and serious domestic violence over two years

Measure of Domestic Violence	Kern N#	Kern Percent Not Working 26+ Hours Either Round	Stanislaus N#	Stanislaus Percent Not Working 26+ Hours Either Round
Not serious DV either year	107	54%	106	54%
Serious DV I only	23	68	27	57
Serious DV II only	16	72	14	56
Serious DV I & II	12	63	21	57
Total	273	100%	306	100%

#N is the number corresponding to the percentage to the right; not the denominator of the percentage. ***=p<0.00 **=p<0.01

Number of weeks worked in previous year as measure. As noted above, because employment among the samples is often unstable, whether a respondent was working 26 hours or more at the time of the interview may differ somewhat from measures that take into account employment over time. We use the number of weeks worked during the previous year as such a continuous measure.

Overall 72 percent of Stanislaus and 69 percent of Kern respondents answering this question worked at least one week in the year prior to the interview, considerably more than were working at the time of the second interview.[65] The immediate issue is that we must take account of those who did not work at all separately from those who worked some. There are two questions: First, does the effect of work/no-work run in the same direction as the effect for number of weeks worked? Second, is the magnitude of the effect similar for work/no-work and for number of weeks worked if worked at all?

Table 28: Association of AOD/MH/DV measures with whether worked at all in prior year, by county

Measure	KERN			STANISLAUS		
	Percent Worked if No Condition	Percent Worked if Have Condition	Probability Due to Chance	Percent Worked if No Condition	Percent Worked if Have Condition	Probability Due to Chance
Serious domestic violence	71%	54%	0.03	71%	73%	0.80
AOD overall need for services	70	62	0.35	73	60	0.08
Unable to do daily activities at least 5 of last 30 days due to MH	73	47	0.00	74	54	0.01

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[65] 554 persons answered this question compared to 579 for the working now question. In both counties together 263 persons were working at the time of the interview while 389 had worked at some time in the year.

Using as a dependent variable whether the respondent worked at all in the prior year, we find that only the mental health measure was statistically significant in both counties, although DV was in Kern and AOD was marginally significant in Stanislaus (see Table 28.) In each case the difference is in the expected direction: AOD/MH/DV issues are barriers.

The second step is to see if the difference in number of weeks worked between those who did work is significant.

Table 29: Association of AOD/MH/DV measures with number of weeks worked in year, by county

Measure	KERN			STANISLAUS		
	Mean Weeks Worked if No Condition	Mean Weeks Worked if Have Condition	Probability Due to Chance	Mean Weeks Worked if No Condition	Mean Weeks Worked if Have Condition	Probability Due to Chance
Serious domestic violence	31.8	30.0	0.66	32.3	29.2	0.29
AOD overall need for services	31.9	29.9	0.64	31.9	29.9	0.58
Unable to do daily activities at least 5 of last 30 days due to MH	32.5	24.0	0.06	31.7	31.4	0.93

If they work at all respondents with these conditions do not work significantly fewer weeks than those without them (although MH is close to significant for Kern).[66] (Table 29.)

This analysis sheds considerable light on what is happening with employment. There seems to be a threshold effect for all three of the AOD/MH/DV conditions: it is much harder to work at all with each of these conditions. However, if that threshold is passed and respondents with the AOD/MH/DV issues do work at least a little, then the overall number of weeks worked in the year is not significantly different from those without these issues (with the possible exception of mental health in Kern).

The effect of AOD/MH/DV issues on the interaction of welfare and work. Tables 30-32 cross-tabulate the combined welfare/work status with each of the three AOD/MH/DV conditions for each county. Each condition has fairly consistent negative effects on the welfare/work status with the exception of serious DV in Stanislaus, where there is no effect.

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[66]We used chi-square to test for significance of work/no-work and a t-test to test for differences between those who were working. It is also possible to test the significance of both work/no-work and how many weeks at the same time using a zero inflated negative binomial model. Results were similar. For the MH measure, in Stanislaus work/no-work was significant and the number of weeks worked was $p<0.15$; in Kern it was significant for work/no-work but not at all for number of weeks. For the AOD measure, in Stanislaus work/no-work was significant and the number of weeks worked was $p<0.17$; in Kern it was close to significant for both work/no-work and for number of weeks worked. For the serious DV measure, in Stanislaus neither work/no-work nor the number of weeks worked was significant; in Kern it was significant for work/no-work and not at all for number of weeks worked. We also look at this same issue in the multivariate analysis below.

Table 30: CalWORKs Participants Working or Getting Welfare:
***Overall* Need AOD Services vs. No Need for AOD Services**

Need AOD	Kern Recipients N=273		Stan Applicants N=306	
	Had Issue	No Issue	Had Issue	No Issue
Working No Cash	3%	16%	17%	28%
Working & Cash	24%	25%	17%	26%
Only Cash	53%	51%	36%	34%
No Work or Cash	21%	8%	31%	12%
TOTAL	100%	100%	100%	100%

Kern statistically significant at p†0.03; Stanislaus p†0.01.

Table 31: CalWORKs Participants Working or Getting Welfare:
MH impairment 5 of last 30 days vs. not impaired

Need AOD	Kern Recipients N=272		Stan Applicants N=306	
	Had Issue	No Issue	Had Issue	No Issue
Working No Cash	5%	16%	14%	28%
Working & Cash	7%	28%	12%	27%
Only Cash	68%	48%	47%	32%
No Work or Cash	20%	8%	28%	13%
TOTAL	100%	100%	100%	100%

Kern statistically significant at p†0.00; Stanislaus p†0.00.

Table 32: CalWORKs Participants Working or Getting Welfare:
Serious DV vs. not Serious DV

Need AOD	Kern Recipients N=273		Stan Applicants N=306	
	Had Issue	No Issue	Had Issue	No Issue
Working No Cash	7%	16%	23%	27%
Working & Cash	15%	27%	26%	24%
Only Cash	59%	50%	39%	33%
No Work or Cash	20%	8%	13%	16%
TOTAL	100%	100%	100%	100%

Kern statistically significant at p†0.02; Stanislaus p†0.77.

Tables 33 and 34 below attempt to deal with the fact that for many persons AOD/MH/DV issues overlap. They present the effect (in each county separately) of MH alone, AOD alone, DV alone and multiple conditions. In general the tables show that mental health impairment affected all categories of work vs. welfare in both counties, AOD need affected most categories in both counties, but not all, and serious DV affected all categories in Kern but had no consistent effect in Stanislaus. In both counties, having two or more of the AOD/MH/DV conditions affected all of the categories except for those receiving welfare but not working. The effect of multiple conditions was especially strong on the category of those who are not working but no longer receive welfare (or are child only cases).

Table 33: CalWORKs Participants Working or Getting Welfare in Round II: Overlapping AOD/MH/DV Need vs. No Need in Stanislaus County

KERN	No AOD/MH/DV	MH Impaired	AOD Need	Serious DV	Two or More
Working No Cash	29%	10%	29%	24%	15%
Working & Cash	27	19	26	12	18
Only Cash	30	62	37	41	36
No Work or Cash	14	10	8	24	30
TOTAL	100%	100%	100%	100%	100%

Statistically significant at p†0.05

Table 34: CalWORKs Participants Working or Getting Welfare in Round II: Overlapping AOD/MH/DV Need vs. No Need in Kern County

STANISLAUS	No AOD/MH/DV	MH Impaired	AOD Need	Serious DV	Two or More
Working No Cash	19%	8%	12%	5%	0%
Working & Cash	28	8	20	42	5
Only Cash	46	72	52	47	67
No Work or Cash	7	12	16	5	29
TOTAL	100%	100%	100%	100%	100%

Statistically significant at p†0.00

The effect of AOD/MH/DV issues on training. Overall, considering participation in training, adult education, ESL, and college courses there was little association with AOD, MH or DV issues. MH impairment had a negative association with receiving vocational training: 19 percent of the population overall reported some vocational training, but only 10 percent of those with MH impairment did (p†0.04). Those with DV issues were somewhat *more* likely to have taken college courses than those without DV issues (in both counties): 18 percent of those with DV service needs took college courses vs. 12 percent of those not having DV issues (p†0.08). And those with AOD needs were *more* likely than those without to have taken adult education courses: 22 percent vs. 14 percent (p†0.06). Given the number statistical tests performed, however, even these limited findings are likely to be overstated.

The effect of AOD/MH/DV issues on job loss. Both functional impairment due to MH and AOD need for services were statistically associated with having lost at least one job (p<0.07 and 0.08, respectively). Of those with MH impairment, 27 percent had lost a job vs. 19 percent of those without impairment. Of those with AOD service needs 28 percent had lost a job vs. 19 percent of others. Members of all three AOD/MH/DV groups were significantly more likely to have been fired than those without these conditions: AOD needs 7.9 percent vs. 1.6 percent (p†0.00), serious DV 4.8 percent vs. 1.9 percent (p†0.08) and MH impairment 5.9 percent vs. 1.8 percent (p†0.02).

B. Human capital, individual, and structural barriers

Prevalence of the barriers. In the CalWORKs Project s *Prevalence Report*[67] we presented a description of 15 potential hurdles (other than AOD/MH/DV) to employment. The characteristics were largely drawn from the literature on welfare reform experiments;[68] however, we also consciously tried to match the variables used in the Women s Employment Survey, a large scale survey similar to ours conducted by Sheldon Danziger and colleagues in Michigan.[69] Below we present the Round II prevalence information for each potential barrier followed for those barriers that are likely to change appreciably from one year to the next by information on change and stability over the two interview rounds.

Table 35: Number and percent with each potential barrier in Round II, by county

Measure of Mental Health Status	Kern N	Kern Percent of Sample	Stanislaus N	Stanislaus Percent of Sample
STRUCTURAL				
No Home of Own at Interview	41	15%	127	41%
Child is Under 3	87	32	105	34
Child Care Very Hard to Arrange	34	12	43	14
No Drivers License	107	39	121	40
HEALTH-DISABILITY RELATED				
Learning Disabled Special Education	48	18	69	23
Significant Health Problems[70]	87	32	90	29
Disabled Child at Home	41	15	37	12
Very Low Self-Esteem	34	12	53	17
JOB MARKET RELATED				
3 or Fewer of 9 Work Skills	86	31	69	23
Grade 11 or Less	129	47	109	36
Difficulty with English	18	7	4	1
Did Not Work in Year Before First Interview	122	45	88	29
Reports Discrimination Occurs Often	12	4	19	6
Age 36 or Over	109	40	95	31

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[67] Chandler, D., & Meisel, J. (2000). *The Prevalence of Mental Health, Alcohol and Other Drug, & Domestic Violence Issues Among CalWORKs Participants in Kern and Stanislaus Counties*. Sacramento: California Institute for Mental Health.

[68] Kalil, A., Corcoran, M., Danziger, S., Tolman, R., Seefeldt, K., Rosen, D., & Nam, Y. (1998). *Getting jobs, keeping jobs, and earning a living wage: Can Welfare Reform Work?* (Discussion Paper, No. 1170-98.). Madison: Institute for Research on Poverty, University of Wisconsin-Madison.

[69] Danziger, S., Corcoran, M., Danziger, S., Heflin, C., Kalil, A., Levine, J., Rosen, D., & al, e. (Revised 2000). *Barriers to the Employment of Welfare Recipients* (www.ssw.umich.edu/poverty/pubs.html). Ann arbor: University of Michigan, Poverty Research and Training Center.

[70] A SF-12 health score of less than 44, which in national studies is associated with 30 to 60% work disability.

TABLE 35 CONTINUED

Measure of Mental Health Status	Kern N	Kern Percent of Sample	Stanislaus N	Stanislaus Percent of Sample
RACE/ETHNICITY				
White	86	31	146	48
Hispanic	109	40	105	34
African-American	61	22	31	10
Other	17	6	24	8

In assessing the effect of the 15 potential hurdles we use the measurements made in the second interview since they are most relevant to the employment measures also contained in that interview. However, one important question is the extent to which these potential barriers are stable over time. Below in Table 36 we classify the relevant potential barriers by whether they were listed only in the first, only in the second, or in both interview rounds. Race, education, age, children under three, not working in the year before Round I, learning disability while a child, and proficiency in English are omitted since, predictably, they changed little or none.

Table 36: Stability and change in 8 health, human capital and structural barriers to work: Percentages by county

Potential Barrier	KERN Only Round I Percent	KERN Only Round II Percent	KERN Both Rounds Percent	STANISLAUS Only Round I Percent	STANISLAUS Only Round II Percent	STANISLAUS Both Rounds Percent
No Home of Own at Interview	9%	10%	5%	14%	30%	11%
Child Care Very Hard to Arrange	15	6	7	14	7	7
No Drivers License	11	3	36	11	7	33
Significant Health Problems	8	13	19	9	17	12
Disabled Child at Home	13	5	10	6	6	6
Very Low Self-Esteem	6	9	6	9	9	8
3 or Fewer of 9 Work Skills	12	7	24	10	7	15
Reports Discrimination Often	9	3	1	5	5	1

A number of variables appeared to become less of a problem over time. These include difficulty arranging childcare (in both counties), lack of a drivers license (in both counties), having a disabled child at home (Kern), having very limited work skills (both counties), and reports discrimination occurring often (Kern). Thus, it appears that respondents eliminated some of these work-related barriers between the two interview rounds.

On the other hand, low self-esteem and health problems appeared to increase. Although not having a home of your own appeared to go up substantially, this is likely due to a different way of asking the question in Round II.[71]

Effect of the barriers on employment. Table 37 presents all 15 barriers in relationship to whether or not study respondents worked at least 26 hours per week at the time of the second interview. This measure was chosen since it reflects welfare-to-work regulations at the time.[72] It also is high enough to exclude very part time work but low enough so as not to limit the measure to those who worked enough to actually leave welfare. However, the patterns shown were tested with any work at all and work 32 hours or more a week with very similar results (not shown). Variables that are not significant in the bivariate analysis are highlighted in gray.

Table 37: Bivariate analysis of effect of 15 potential barriers on whether respondent was working 26 or more hours per week at time of second interview, by county

Potential Barrier to Employment	KERN			STANISLAUS		
	Percent Over 26 if No Barrier	Percent Over 26 if Barrier	Probability Due to Chance	Percent Over 26 if No Barrier	Percent Over 26 if Barrier	Probability Due to Chance
STRUCTURAL						
No Home of Own at Interview	35%	20%	0.05	49%	34%	0.01
Child is Under 3	35	29	0.31	47	35	0.05
Child Care Very Hard to Arrange	36	15	0.01	44	33	0.14
No Drivers License	41	21	0.00	49	33	0.00

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[71] In Round I we asked if people were homeless at the time of the interview. In Round II we asked if they were living with someone else, that is, did not have a home of their own.
[72] The statewide rule was 26 hours a week of work or work activities was required. Kern followed the state guideline. Stanislaus required 32 hours a week of work or work activity.

TABLE 37 CONTINUED

Potential Barrier to Employment	KERN			STANISLAUS		
	Percent Over 26 if No Barrier	Percent Over 26 if Barrier	Probability Due to Chance	Percent Over 26 if No Barrier	Percent Over 26 if Barrier	Probability Due to Chance
HEALTH-DISABILITY RELATED						
Learning Disabled Special Education	35	23	0.10	46	30	0.02
Significant Health Problems	41	16	0.00	48	31	0.01
Disabled Child at Home	34	24	0.20	43	41	0.77
Very Low Self-Esteem	36	15	0.01	47	23	0.00
JOB MARKET RELATED						
3 or Fewer of 9 Work Skills	38	22	0.01	47	29	0.01
Grade 11 or Less	42	23	0.00	48	33	0.01
Difficulty with English	33	28	0.62	42	75	0.19
Did Not Work in Year Before First Interview	47	15	0.00	48	31	0.01
Reports Discrimination Often	33	33	0.98	42	53	0.37
Age 36 or Over	34	32	0.81	40	48	0.18
RACE ETHNICITY			0.00			0.32
White	76	24		60	40	
Hispanic	70	30		59	41	
African-American	48	52	(0.00*)	42	58	(0.07*)
Other	76	24		54	46	

*Chi-square for dummy variable African-American .

The characteristics which have a strong significant negative impact in both counties on whether or not the respondent was working at least 26 hours a week were: Significant Health Problems, No Drivers License, Low Self-Esteem, Three or Fewer of Nine Work Skills, , No Home of Own at Interview, Did Not Work in Year Before First Interview, Grade 11 or Less, and Race is Not African-American. Most interesting of these findings is that in both counties African-Americans were much more likely to be working than were members of other racial/ethnic groups.

Characteristics with a strong significant impact in only one county were: Learning Disabled or Special Education (Stanislaus), Child is Under 3 (Stanislaus), Child Care Very Hard to Arrange (Kern).

Characteristics we expected to have a negative impact on employment, but which did not reach statistical significance, were: Difficulty with English, Reports Discrimination Occurs Often, Disabled Child is at Home, and Age 36 or Over. (Those over age 45 did have more difficulty working, but the number in our samples is too small to reach a valid inference.)

Thus, in sum, four human capital variables were significant: low education, few work skills, not working in the year prior to the first interview, and having less than a high school education. Of demographic variables, race was important but not age. Contrary to some other studies, African American respondents were considerably *more* likely to be working than were members of other racial/ethnic groups. The remaining significant characteristics are better classified as situational or structural. While some may well be permanent or difficult to change such as health status others would appear to be exactly the sort of barriers a welfare-to-work program should be able to affect: child care, transportation, housing, and learning disability or history of special education.

PART III: THE EFFECT OF MULTIPLE HURDLES ON EMPLOYMENT

A consistent finding in studies looking at potential barriers to employment is that the cumulative number of hurdles is linearly related to the amount of employment TANF participants report.[73] This has held true even when different numbers of hurdles or different types of hurdles were analyzed. We find a similar result, and one that holds true essentially for a number of different measures of employment.

Below is a frequency distribution of the number of potential barriers found in the Kern and Stanislaus samples combined in Round II. The possible number of barriers is the 15 health, situational, and human capital barriers described above plus variables for serious DV, serious MH and serious AOD issues that is a maximum of 18 barriers.[74]

Table 38: Frequency distribution of sum of 18 potential barriers, both counties together

# Barriers	N	Percent	Cumulative Percent
0	4	0.7%	0.7%
1	33	5.7	6.4
2	60	10.4	16.8
3	83	14.4	31.2
4	103	17.9	49.1
5	89	15.4	64.6
6	81	14.1	78.6
7	53	9.2	87.8
8	38	6.6	94.4
9	20	3.5	97.9
10	8	1.4	99.3
11	4	0.7	100.00
Total	576	100.0%	

Only one percent had none of the barriers, while half had four or fewer. On the other end of the spectrum, only 12% of the total population had as many as 8 barriers.

Concurrent barriers for women with AOD/MH/DV issues. Do women with one or another or multiple AOD/MH/DV issues have a greater or fewer number of the 15 other barriers we have identified than

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[73] Danziger, S., Corcoran, M., Danziger, S., Heflin, C., Kalil, A., Levine, J., Rosen, D., & al, e. (Revised 2000). *Barriers to the Employment of Welfare Recipients* (www.ssw.umich.edu/poverty/pubs.html). Ann Arbor: University of Michigan, Poverty Research and Training Center; Norris, J., Speiglman, R., & Dasinger, L. (2002). *San Joaquin County CalWORKs Needs Assessment and Outcomes Study: Health and Other Potential Barriers to Working and Self-Sufficiency*. Berkeley: Public Health Institute; Dasinger, L., Miller, R. E., Norris, J., & Speiglman, R. (2001). *Alameda County CalWORKs Needs Assessment and Outcomes Study: Changes in Economic, Work, Welfare, and Barrier Status 15 Months Post-Baseline*. Berkeley: Public Health Institute.

[74] We use serious domestic violence (as defined above), unable to carry on daily activities at least 5 of 30 days due to MH issues, and overall need for AOD services as the three variables since these showed the greatest bivariate impact on working 26 hours or more a week. We did not drop the variables not found to be statistically related in bivariate analysis to working 26 hours a week in part because they remain of theoretical interest and in part because the multivariate analysis presented later showed several variables to be significant which were not in bivariate analysis.

women with no AOD/MH/DV issues? The graph below uses the same AOD/MH/DV variables that we use throughout: for MH being unable to carry out daily activities 5 of the last 30 days; for AOD, overall need; and for DV experiencing serious abuse. The differences shown in the graph are highly significant.[75] In both counties, those with MH issues alone have more of the 15 other barriers than do even those with multiple barriers. In Kern, the AOD only respondents actually have fewer barriers than women having no AOD/MH/DV issues; the N, however, is only 17. In any case, it is clear that women with AOD/MH/DV issues must not only cope with those specific barriers but with a higher number of human capital, situational and health obstacles than do women who do not have AOD/MH/DV issues.

Figure 2: Mean number of barriers by AOD/MH/DV category, by county

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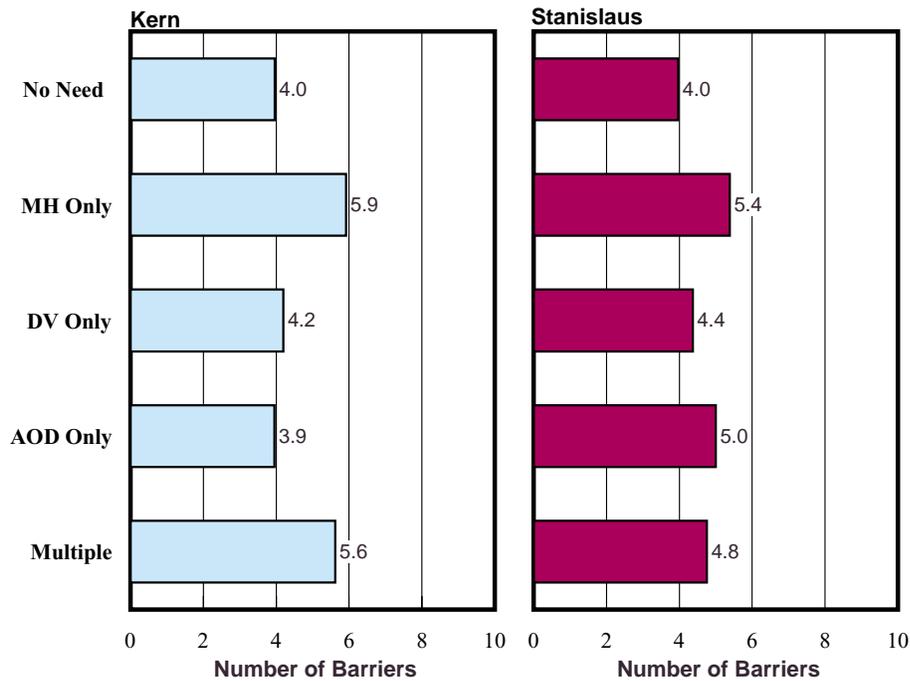
[75] ANOVA: Kern F=7.97, p<0.00; Stanislaus F=4.63, p<0 .00.

Impact of multiple barriers on employment and welfare status. Figure 3 below shows the number of barriers for each county. Kern had a slightly higher percentage with 0-3 barriers but also a slightly higher percentage with over six barriers.

Figure 3: Number of barriers by county in Round II

**Number of Barriers
(Out of 18)**

Percent Of Each Study Group Having # of Barriers
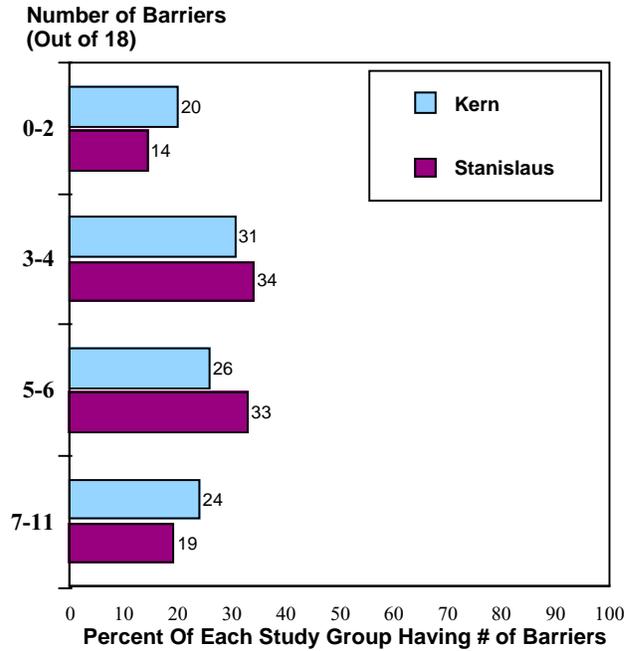
Figure 4: Mean number of barriers (of 18) reported by respondents in different welfare and work categories both counties combined

**Number of Barriers RND II
(Out of 18)**

Mean Number of Barriers (of 18) at Round II
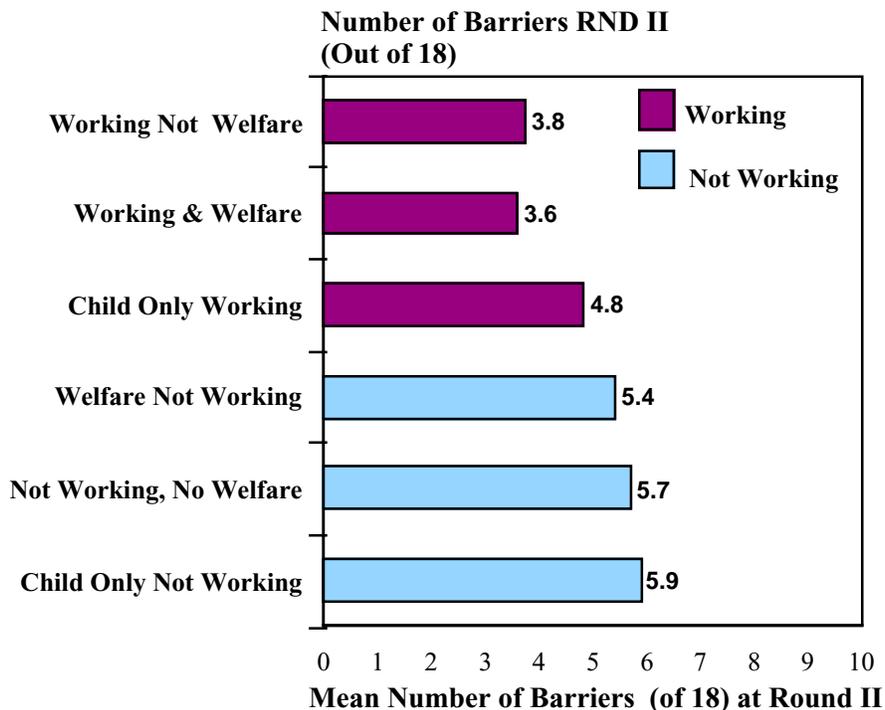
Figure 4 above demonstrates clearly the effects of multiple hurdles: those not working, whether on welfare or off have an average of five barriers (in each county); while those working average four. The child only not working category has the greatest number of barriers 5.9.

**Figure 5: Impact of barriers on four employment measures**

KERN   **STANISLAUS**
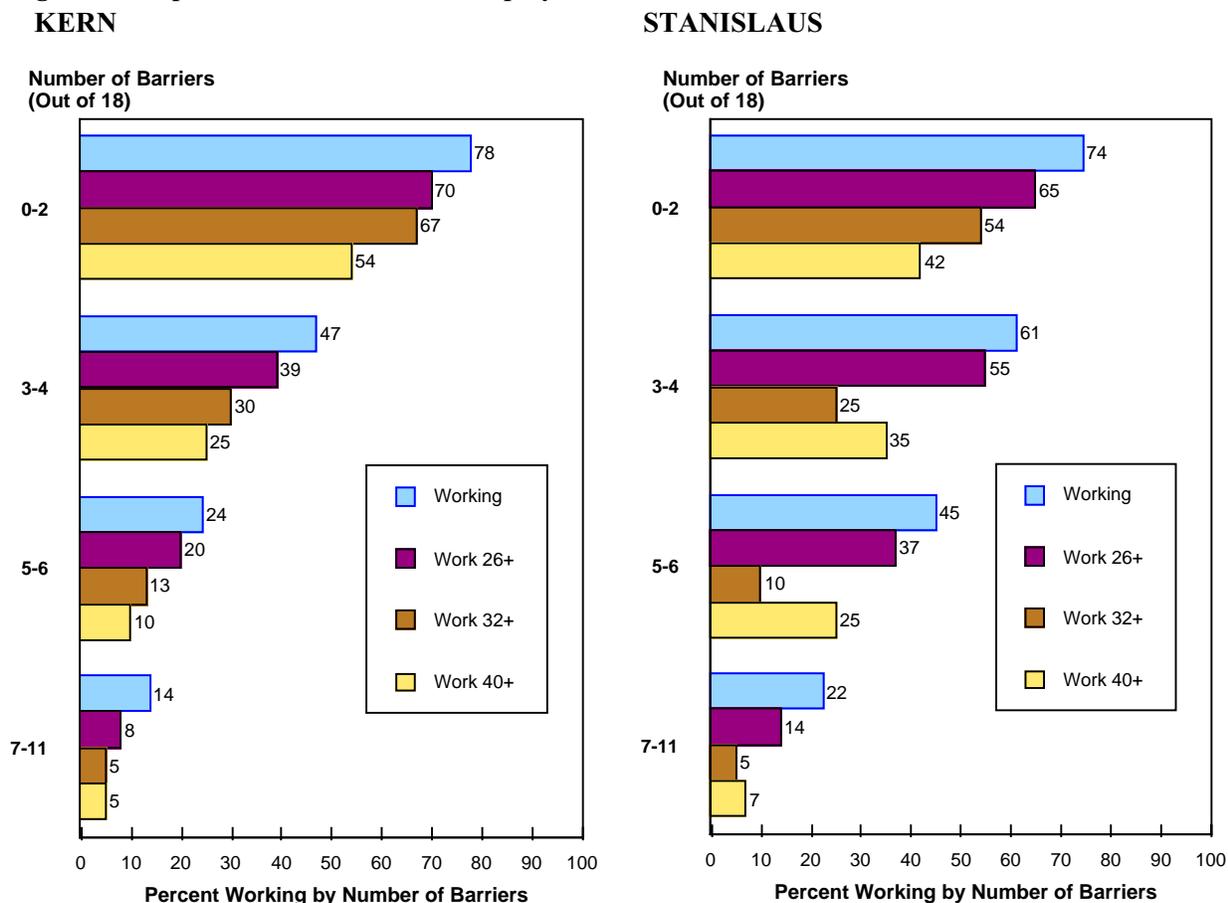
As shown in Figure 5, the overall effect of barriers on four different measures of employment is similar for both counties. However, the Kern respondents with 0-2 barriers actually are somewhat more likely to work (regardless of measure) than are the Stanislaus respondents. But Stanislaus respondents with over three barriers are considerably more likely to work despite having multiple barriers. For example, with 3-4 barriers 61 percent of Stanislaus respondents work compared to 47 percent in Kern. With 5-6 barriers it is 45 to 24 and with over six barriers 22 to 14. Thus while in both counties more barriers clearly mean fewer women working Stanislaus recipients seem better able to overcome their barriers.

We tested this perception formally using a logistic regression model. First we used working/not-working as the dependent variable, then working 26 hours, working 32 hours and working 40 hours. The independent variables were the number of barriers and the interaction between county and number of barriers the interaction being our focus here. The interaction was not statistically significant in explaining working/not-working or working 26 hours or more, but was statistically significant ($p \leq 0.01$) for working 32 hours or more and for working 40 hours or more ($p < 0.09$). It is an open question whether the differential impact of hurdles in the two counties is due to the higher pressure welfare-to-work program in Stanislaus or to differences in the populations since both exist.

Impact of multiple barriers on number of weeks worked in the year between Round I and II. So far our focus has been multiple barriers and whether individuals worked at all and if so how many hours they were working at the time of the Round II interview. Now we move on to a measure of employment performance over the entire year between the first and second interview rounds. As noted before, this was the time during which welfare to work activities were required. The dependent measure we use is weeks worked during that year, the independent variable is again number of barriers.

A clear, if simplified, picture emerges if we divide the number of barriers into 6 equal categories and plot the means of each category against the number of weeks worked. There is a very clear linear trend. However, there is considerable variability around that trend (indicated by the relatively low R^2 as well as the scatter plot).
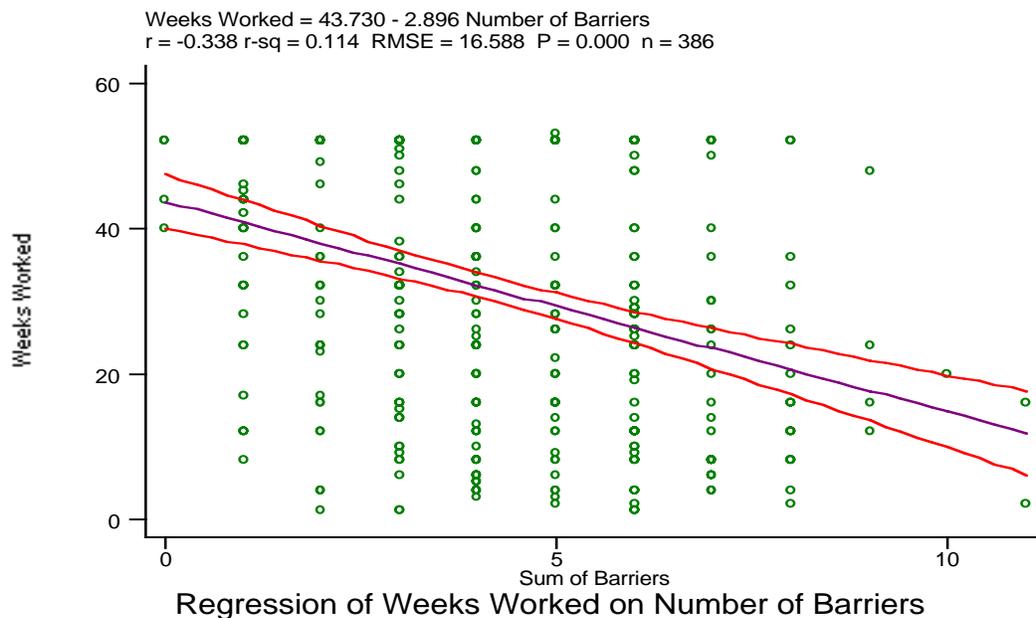
Figure 6: Linear effect of number of barriers (mean in 6 categories) on weeks worked, by both counties combined

Linear Trend: Weeks Worked by 6 Categories of Barriers
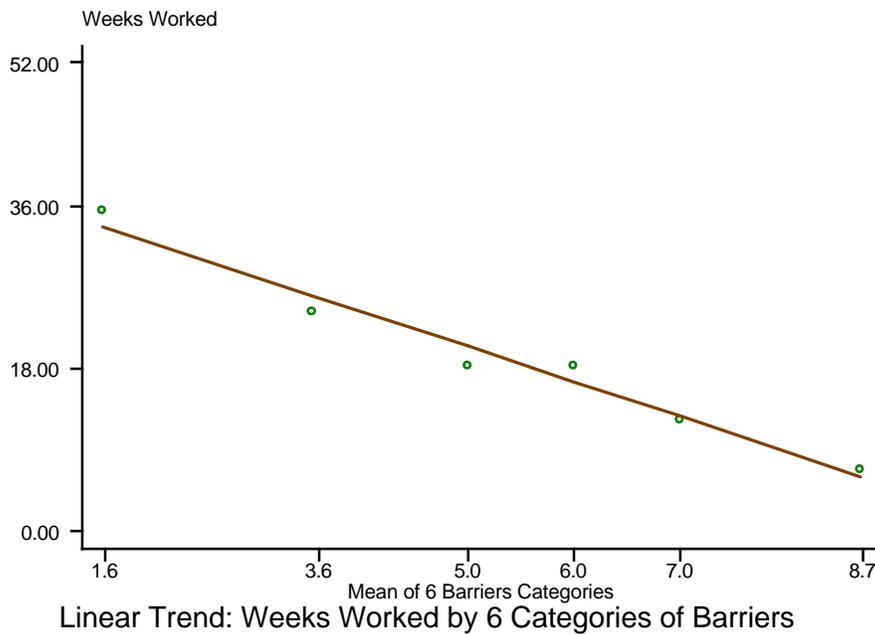
By only showing the mean, however we obscure the extent of variability there is around the mean it is considerable. We regressed the number of weeks worked in that year (if any) on the number of barriers reported. Figure 7 shows the regression line and a 95 percent confidence interval. The correlation between the two variables is .39, and the R^2 is approximately .11. Note that the regression included both counties combined.[76]

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[76] We initially modeled the regression with both county and the interaction of county and barriers in the regression, but neither was significant.

Figure 7: Effect of number of barriers on the number of weeks worked, excluding those not working at all, by both counties combined (with 95% confidence interval)
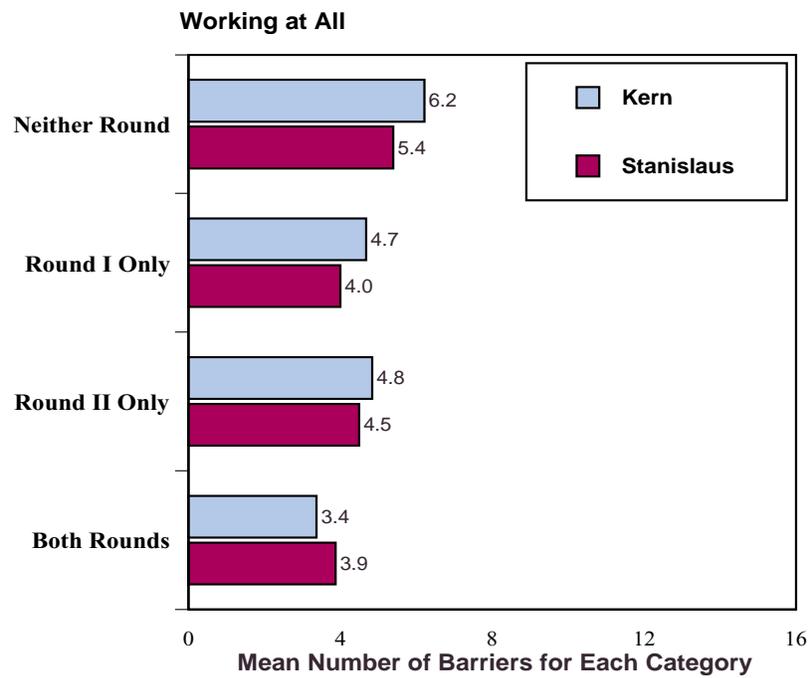

Weeks Worked = 43.730 - 2.896 Number of Barriers
r = -0.338 r-sq = 0.114 RMSE = 16.588 P = 0.000 n = 386

Regression of Weeks Worked on Number of Barriers

Impact of multiple barriers over time. Very few women in Stanislaus were working 26 or more hours per week at the time of the Round I interview, so we used work/no-work across the two years as the dependent variable in this analysis. We use the number of barriers at Round I as the predictor variable. As seen in Figure 8 on the next page, the number of barriers among those not working either year is substantially higher than those working both years. The number of barriers for those who worked only one of the years is intermediate. These differences are highly statistically significant in both counties.[77]

There were 28 women in Kern and 14 in Stanislaus who were working at the time of the Round I interview but not at the time of the Round II interview, that is, their employment status was worse in Round II. In contrast, there were 39 women in Kern and 99 in Stanislaus whose work status improved. Table 39 on the next page shows the Round II mean number of barriers and change in barriers for the women whose employment status was either better or worse in Round II than Round I (those who stayed the same are omitted). In both counties the mean number of barriers among those whose status got worse was higher than among those whose work status improved. Those whose work status was worse in Round II than Round I showed a small net increase in barriers across the two interview rounds, while those whose work status was better showed a somewhat larger net decrease in barriers from Round I to Round II.

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[77] Using ANOVA: Kern F=31.75 p<= 0.0000; Stanislaus F=8.50   p<=0.0000.

Figure 8: Working or not over two years: mean number of barriers in Round I, by county

Working at All

Mean Number of Barriers for Each Category

Category	Kern	Stanislaus
Neither Round	6.2	5.4
Round I Only	4.7	4.0
Round II Only	4.8	4.5
Both Rounds	3.4	3.9

Table 39: Mean number of barriers in Round II and change in barriers by work improvement status over time, by county

Work status better or worse	Kern Mean Change in Barriers	Kern Mean RndII Barriers	Stanislaus Mean Change in Barriers	Stanislaus Mean RndII Barriers
Worked I Not II: Worse	+.14	4.8	+.86	4.9
Worked II Not I: Better	—.78	4.1	—.30	4.2

PART IV: PREDICTING THE IMPACT OF AOD/MH/DV AND OTHER BARRIERS ON EMPLOYMENT

A. Multivariate logistic regression model for working 26 hours a week or not

Methodological considerations. Multiple logistic regression is a method which allows us to model statistically the effects of one variable on a binary outcome (in this case working 26 hours a week or more) while taking account of the effects of other variables. It allows us to say, for example, what the effect of mental health issues on working 26 hours is if other possible predictors (such as AOD, DV) are held constant. This is useful because relationships we are interested in are often enmeshed in other relationships. For example, the likelihood of working may depend both on age and education and the effect of age may differ with different levels of education. Multiple regression lets us disentangle the separate and combined effects of both. We started by exploring some of the alternative AOD/MH/DV and human capital variables listed in Part II.

Because in most of the analyses above there were relatively few differences between the counties, we used the combined study groups as the base. However, each variable was tested for interaction with county and one interaction remained in the final model.

Methodologist Nick Cox recently wrote: Physicists have a saying that if you have seven parameters, then you can fit an elephant. That thought doesn't help those with hundreds of variables, most of which might plausibly have some small effect, if only as a proxy, and which in total do not come close to fitting the elephant. This is unfortunately at least partially the case here. Despite more than twice the seven parameters, the pseudo R2 for the model is only .20. Because of the selection exercised in choosing which AOD/MH/DV variables to use, it is likely that some part of that effect size is due to over-fitting of the model on this particular data set.

The basic multivariate logistic regression model: What explains working 26 or more hours a week? Below we show the best fitting multivariate logistic model. It fit the data well by a variety of measures, with primary emphasis having been given to AIC. County and Serious DV are not in themselves significant but are left in the model since their interaction terms are. Live with Child/Children Under 3 is not significant using the z values but the AIC increases if it is removed. The R-square measure is roughly equal to the amount of the variance that is explained.[78] In this case it is approximately 20 percent.

If positive, the odds ratio is intepreted as a percentage increase in the odds: e.g., women in Stanislaus County have 20 percent greater odds of working at least 26 hours a week than women in Kern. If negative, the odds ratio represents a percentage decrease in the odds, e.g., those with impaired MH functioning have 70 percent lower odds of working 26 hours a week than those without such impairment.[79]

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[78] There are a number of R2 measures for logistic regression models, each with a somewhat different interpretation. Long, J. S. (1997). *Regression Models for Categorical and Limited Dependent Variables*. Thousand Oaks: SAGE Publications. For the purposes of assessing the value of a model for prediction, the adjusted count R2 is valuable. In this case, since 68 percent did not work 26 hours one could simply predict all person would not work and would be correct 68 percent of the time. The adjusted count R2 takes account of the size of the maximum row marginal. For this model the adjusted count R2 is .24; that is, our prediction is improved 24 percent over just choosing the largest row marginal.

[79] Odds and probability are closely related concepts. If two out of three persons work, for example, we can say *either* that the probability of working is .66 or that the odds of working vs not working are 2 to 1.

Table 40: Predicting 26 or more hours of work a week: multiple logistic regression model results, both counties combined using Round II variables

Predictor	Odds Ratio	Confidence Interval
County is Stanislaus	1.20	0.71 - 2.01
Overall AOD Need	0.52	0.27 - 1.00*
Impaired MH Functioning 5/30 Previous Days	0.31	0.13 - 0.70**
Serious DV	0.46	0.16 - 1.27
County*Serious DV	3.29	0.97 - 11.24+
Race/Ethnicity is African-American	2.30	1.33 - 3.99**
Not Work in Last Year (Round I)	0.22	0.12 - 0.43**
County * Not Work in Last Year (Round I)	2.69	1.13 - 6.43*
No Housing of Own	0.53	0.33 - 0.84**
No driver s License	0.60	0.39 - 0.90*
Child Care Very Difficult To Arrange	0.45	0.24 - 0.85*
Discriminated Against 'Often'	2.77	1.13 - 6.81*
Live with Child/Children Under Age Three	0.73	0.48 - 1.12
Physical Health Problems	0.51	0.32 - 0.81**
Very Low Self Esteem	0.63	0.41 - 0.96*
Three or Less of 9 Work Skills	0.60	0.37 - 0.98*

McFadden s R2=.202
Observations 576
95% confidence intervals in parentheses
+ significant at 10%; * significant at 5%; ** significant at 1%

Looking at the variables in the model, two of the positive odds ratios are for the interaction terms we will look at those specifically in the next section. The other positive terms are for African-American and Discriminated against often. As noted in the discussion of bivariate relationships, African-American respondents in both counties were much more likely to be working 26 hours a week, and this relationship holds up in the multivariate relationship. Discriminated against often appears initially to be paradoxical in that persons reporting discrimination are much more likely to work 26 hours a week. However, it does make sense if one considers that to be discrimnated against often requries considerable experience in the working world which in turn is the best predictor of continued workforce participation. We should also note that the N is quite small for this group (reflected in the large confidence interval).

A number of likely predictors turned out *not* to be significant in modeling working at least 26 hours a week. These were having a learning disability or having attended special education as a child, age over 36 (or more generally age or age squared), having less than a high school education, and having a disabled child at home.

In addition some measures of AOD/MH/DV issues were much more predictive than others. As mentioned, the high MH symptom score variable was not significant if self-esteem was in the model. The relationship of work with other MH variables also disappeared in the multivariate analysis (neither major depression, PTSD or any other diagnosis was significant; having 2 or more diagnoses was marginally significant).[80] While most of the DV variables presented in bivariate analysis above were significant in

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[80] Other research looking at the relationships of employment to MH and AOD have also found bivariate relationships that were not sustained in the multivariate analysis. Driscoll, A. K., Speiglman, R., & Norris, J. (2000). *Alameda County CalWORKs Needs Assessment Barriers Associated with Working, Hardships of Daily Living,*

Kern, none were significant in both. Serious abuse was chosen because it is conceptually important as a measure of need and because the interaction with county was particularly strong highlighting the need to better understand the circumstances under which having experienced domestic abuse impedes work vs. encourages it. The broad definition of AOD problems (that included having sought services, flunking a job related drug test, and coming to the research interview intoxicated as well as dependence or abuse) was most predictive possibly because of underreporting of abuse/dependence patterns that was compensated for by including the job related and interview measures.

We also tried adding several different measures of social support into the model representing a protective factor but none achieved significance. (A variable that measured presence of either high family or high friend support was marginally significant in bivariate analysis.)

Discrete change in probability due to risk factors. For welfare-to-work programs to increase the percentage of women working at least 26 hours a week requires a method of determining which risk barriers are most important (as well as which may be feasibly modified).

Figure 9: Change in predicted probability of working at least 26 hours a week for each risk factor with all others held constant (both counties together)
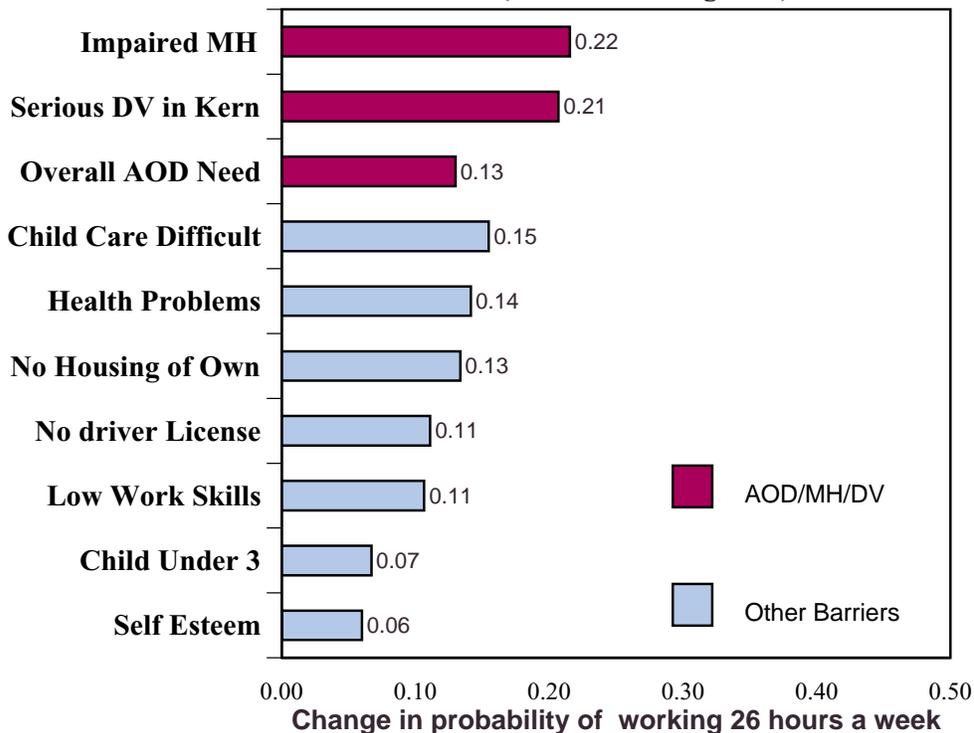
Discrete change in probability shows the change in predicted probability of working 26 hours a week or more if a woman has the risk factor, with all other factors held at their mean.

Progress through CalWORKs and Work-related Activities. Berkeley: Public Health Institute; Danziger, S., Kalil, A., & Anderson, N. J. (2000). Human Capital, Health and Mental Health of Welfare Recipients: Co-occurrence and Correlates. *Journal of Social Issues, 54*, 637-656: Available on the web at:www.ssw.umich.edu/poverty/pubs.html.

While the odds ratios in Table 40 give an idea of the magnitude of effect for each variable, they are more easily understood when converted to changes in the likelihood of working 26 hours with or without a given factor termed the discrete change in the probability. [81] Figure 9 above shows the discrete change in the probability for the variables which might be subject to intervention (race and prior work history are removed; we assume better child care could alleviate problems of having very young children so impact of age of children is considered preventable in this sense). The change in the discrete probability of working answers the question: how much would the predicted probability of working 26 hours a week increase, on average for those having the risk factor, if this risk factor were prevented or eliminated?[82]

The MH variable (unable to do daily activities 5 of last 30 days due to MH symptoms) would produce the greatest change in the probability of work/not-work (.22) if it went from 1 to zero or zero to 1. Specifically, with all other variables held to their mean, for those for whom the MH barrier was present the predicted probability of working at least 26 hours would be .15; if it were not present it would be .37. Domestic violence (in Kern only) has an equally large effect. AOD has a substantial effect on the predicted probability (.13) about the same as several of the situational variables such as difficulty with child care, health problems or having no home of one s own. Note that not having worked the year before had the largest effect (.29); it is not shown because it is not preventable having already occurred.

Attributable risk for specific variables While discrete change of probability allows us to understand relative risk for each factor, it does not take into account the size of the group having the risk factor. Epidemiologists frequently use the concept of the population attributable risk (or fraction) as a method of quantifying the amount of an outcome due to a particular risk factor thus, focusing intervention priorities. In this case *not* working at least 26 hours a week is the outcome we want to understand. Population attributable risk increases both with the strength of an association (which is measured with discrete change in probability) *and* with how common or prevalent the risk factor is. The population attributable risk compares the rate of employment for the entire population (including those with a risk factor) with that of those who do *not* have the risk factor. It thus tells us what proportion of all failure to work would be eliminated if the number having the risk factor were reduced to zero (no one had the risk factor). Moreover, if an assumption of causality can be made,[83] how much of the failure to work is preventable can be extrapolated. Comparing the attributable risk for different factors permits judgment of the potential overall impact of intervention.

The population attributable risk for these variables ranges from one to 6 percent (Figure 10).[84] Because these figures include the size of the group having the risk factor, the individual influence of each variable can be compared. Lack of a home of one s own has the greatest impact, followed by health problems and lack of transportation, and then by lack of recent work and mental health issues.

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[81] Long, op.cit.

[82] For all the variables except self-esteem, the change in predicted probability is for the condition moving from a zero to a one. For self-esteem, a continuous variable, it is for moving from 1/2 standard deviation below the mean to 1/2 standard deviation above the mean. All other variables are held at their mean.

[83] There are in fact many ways in which the associations found might occur that do not involve causality. For example, Jayakody has found that smoking tobacco is strongly associated with welfare use in national survey data. Undoubtedly smoking is serving as a marker for many other social and personal variables; it clearly has no causal inflence itself. Pollack, H. A., Danziger, S. H., Seefeldt, K. S., & Jayakody, R. (2002). *Substance Use Among Welfare Recipients: Trends and Policy Responses*. Chicago: Joint Center for Poverty Research: http://www.jcpr.org/policybriefs/vol4_num2.html.

[84] The unchangeable factors (race, work status the prior year) were left in the model but their attributable risk is not reported.

Figure 10: Population attributable risk of working 25 or fewer hours a week for variables that are thought to be causal and are subject to intervention (both counties together)
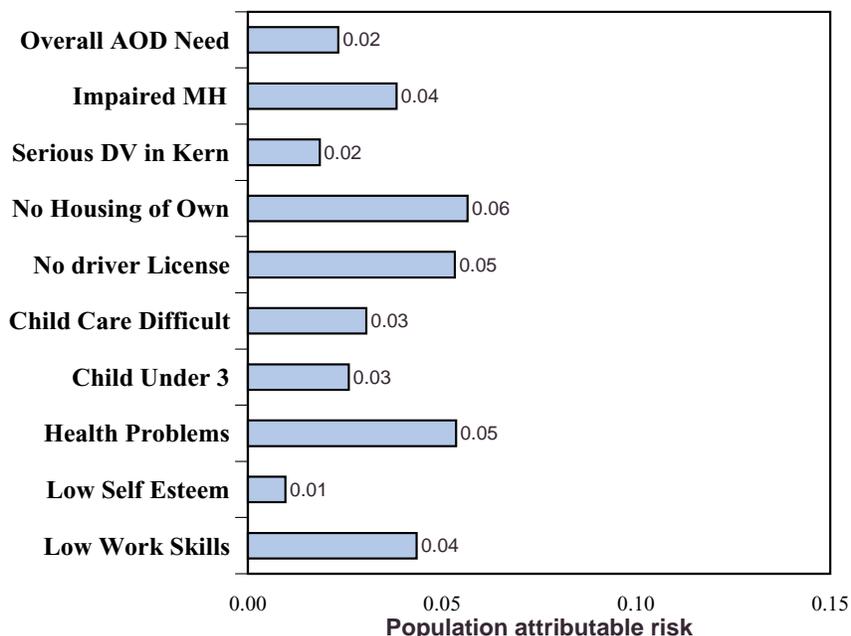
Attributable risk of the population shows the percentage by which not working overall would be reduced if a given risk factor were not present, with all other factors held at zero. Attributable risk takes into account the size of the group having the risk as well as the relative risk of not working 25 hours a week.

Using a multivariate model for predicting need for intensive services: stability of predictors. The regression model can be used to generate a predicted probability of working 26 or more hours a week for each person, with the probability depending on the particular constellation of barriers experienced by each. If we say that everyone with a predicted probability of over .5 is likely to work 26 hours a week and everyone below .5 not to work, then the model would successfully classify 71 percent of the cases overall.[85] The sensitivity (workers correctly classified by the model) is 60 percent and the specificity (non-workers correctly classified) is 79 percent. Since ordinarily we do not know the true values in advance of our prediction, a test made up of these variables can best be evaluated by how high the positive predictive value and negative predictive value are. Using the model s predicted values as a test , the positive predictive value is 63 percent (that is, 63 percent of the predictions that a person will be working 26 hours or more will be correct); the negative predictive value is 75 percent (that is, 75 percent of those predicted not to be working will turn out not to be working). So in combination, these variables allow us to predict the likelihood of working 26 hours a week considerably better than chance.

Were one to develop a test for predicting who would *not* be working one year into welfare reform (using the above predictors), one could adjust the cut-off point in the predicted probabilities to maximize negative predictive value. Suppose that we wanted to be 90 percent sure in our prediction of not working. Then we would set the cut-off point for our prediction lower, at a probability of .20 instead of .50. Our

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[85] The ROC area under the curve is .79 for this model. A model with no predictive power would have .5 under the curve; complete predictive power would include 1.0.

prediction of those not working would encompass 32 percent of the population and (if we did not intervene) 90 percent of these would in fact not work. Thus it would be safe to target this group for intensive employment and supportive services.[86]

However, to be useful a predictor must occur well before the predicted event. Since some of the variables in the model above were not present several months in advance of the date at which we are predicting not working 26 hours a week, we attempted predicting the hours worked per week in Round II using *Round I* variables. Since some of the Round I variables may have occurred as much as two years prior to the time for which we are attempting to predict we would expect less explanatory power from them than from the more recent Round II variables. Predicting a year or more ahead is also a good test of the stability of the predictors in the Round II model we have been discussing.

Table 41 shows the final multivariate model that uses Round I variables to predict who is working or not working 26 hours or more a week one year later (at the time of Round II). As expected the R-square is 13.3% rather than the 20.3% found in the previous model in which the predictors are closer in time to the week in which hours working is measured. In addition, a number of the predictors were not the same. Health problems, a child under 3, or very low self-esteem in Round I were not significant predictors of who would work 26 hours or more a week at the time of the Round II interview; however, not having gotten a high school diploma *was* significant. In addition, needing and/or getting DV services in Round I was highly predictive of not working 26 hours in Round II in Kern but not at all in Stanislaus. Needing and/or getting AOD services in Round I was not significant (as it was in Round II), nor was any abuse/dependence or even any dependence, but use of any illicit drug in Round I was predictive at a close to statistically significant level (p<0.17). Being unable to carry out daily activities in 5 of the prior 30 days in Round I did predict work level in Round II but so did overall MH need (which we used in the model). Factors that were predictive in both their Round I and Round II versions were low work skills, no driver s license, and child care difficulty. Constants in both models that were predictive were race and not having worked in the year prior to Round I.

Table 41: Predicting working at least 26 hours a week in Round II from Round I variables

Predictor	Odds Ratio	Confidence Interval
County is Stanislaus	0.89	(0.52 - 1.51)
Overall DV Need	0.45	(0.22 - 0.93)*
County*Overall DV	2.44	(1.02 - 5.80)*
Any Drug Use	0.70	(0.42 - 1.16)
Race/Ethnicity is African-American	2.64	(1.56 - 4.47)**
No Driver s License	0.68	(0.46 - 1.00)*
Child Care Hard to Arrange	0.60	(0.37 - 0.98)*
Only 1-3 of 9 Work Skills	0.69	(0.44 - 1.08)+
Not Work in Last Year	0.19	(0.10 - 0.36)**
County * Not Work in Last Year	3.32	(1.42 - 7.76)**
Overall MH Need	0.59	(0.38 - 0.91)*
No High School Degree	0.68	(0.45 - 1.02)+

Observations 573
95% confidence intervals in parentheses
+ significant at 10%; * significant at 5%; ** significant at 1%

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[86] Note that since the counties differ in composition, the predictive capacities would be somewhat different in each county even using the same model. For example, with the cutoff of .20 as above, the negative predictive value in Kern would be 92 percent; in Stanislaus it would be 88 percent.

This additional modeling demonstrates that certain variables tend to be situational and do not have long range impact on employment (health, self-esteem, having a child under three). The AOD/MH/DV variables from Round I, however, had a very similar impact to those of Round II on working 26 hours in Round II.

We believe these analyses show the potential usefulness to CalWORKs program staff of using a test to predict which clients should receive intensive services from early on. However, the results of such a predictive instrument would also depend on the forthrightness of the CalWORKs participants. The many considerations involved in this type of screening for potentially sensitive issues are discussed in another CalWORKs Project report entitled *Screening Guide* which is available on the CIMH website: www.cimh.org/calworks.

B. Impact of AOD/MH/DV on working 26 hours a week with other variables held constant[87]

Although AOD/MH/DV variables are presented above along with other potential barriers, it is useful to revisit the basic percentages working or not working 26 hours or more a week only this time adjusting for the other variables in the logistic regression model we presented first. Figures 11, 12, and 13 present these relationships. Most interesting is the strong interaction of serious domestic violence with county: in Kern those reporting serious abuse are considerably less likely to be working than those not reporting serious abuse, while in Stanislaus those reporting serious abuse are more likely to be working. Reasons for this are discussed on pp. 24-27 and Appendix I contains information from a parallel regression analysis that used need for DV services rather than serious abuse as a predictor.

Figure 11: Percentages working 26 or more hours per week, by county and serious domestic violence (adjusted for effect of covariates)


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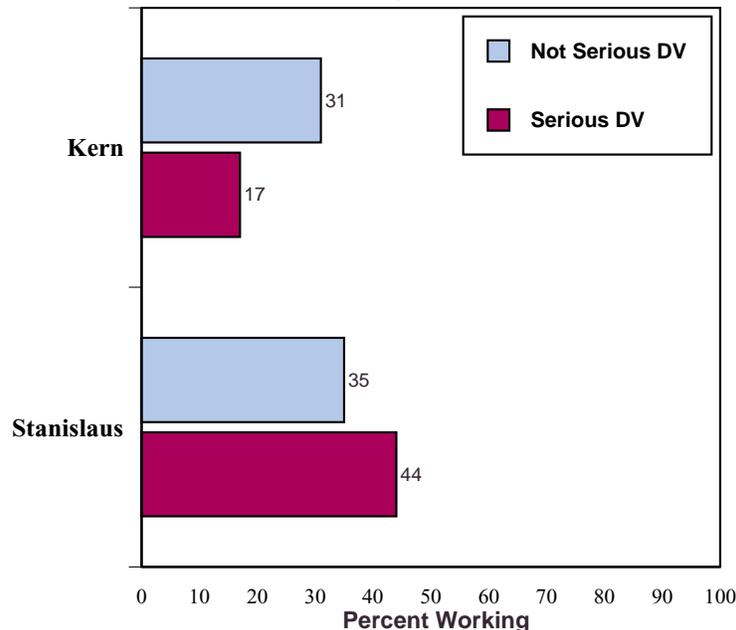
[87] In this analysis the covariates were held at their mean.

Figure 12: Percentages working 26 or more hours per week, by county and overall AOD need (adjusted for effect of covariates)

Figure 13: Percentages working 26 or more hours per week, by county and mental health impairment 5 of past 30 days (adjusted for effect of covariates)
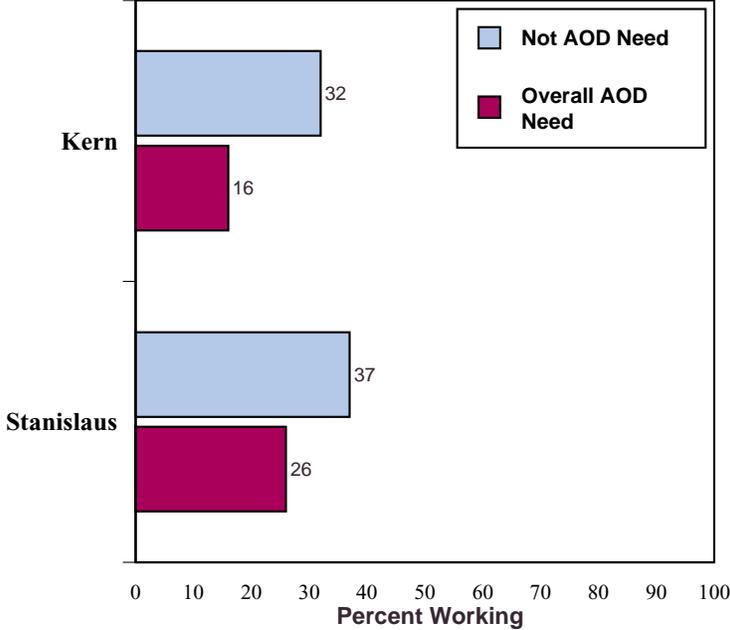

For AOD and MH, the impact of including the covariates is to reduce somewhat the strength of the impact of AOD on work: the percentage differences are smaller than in the bivariate analysis.
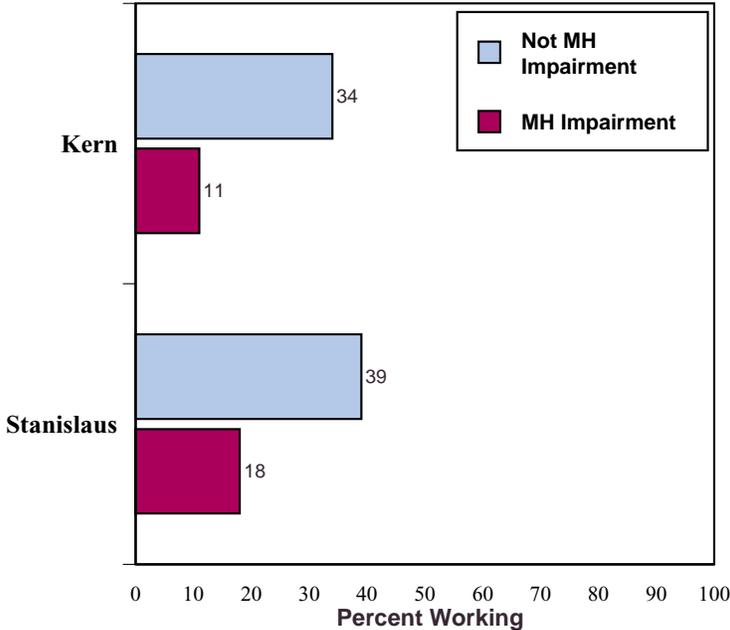
Interaction of AOD/MH/DV with self-esteem. We have noted in earlier publications on prevalence and incidence, that very low self-esteem is highly correlated with all three AOD/MH/DV conditions. In the regression modeling, high self-esteem is a strong predictor of working 26 hours or more. The relationship between self-esteem, working at least 26 hours a week and the AOD/MH/DV variables is presented in Figure 14. Holding all other variables constant at their mean, it shows how the predicted probability of working 26 hours changes for those with MH impairment, those with AOD service needs and those with serious abuse. (Kern and Stanislaus are presented separately and the lack of statistical significance in Stanislaus is indicated by the unconnected symbols.) There is a relatively linear relationship between higher self-esteem scores (which means lower self-esteem) and each of the AOD/MH/DV variables. The steeper decline of the probability of working for DV in Stanislaus indicates that at low levels of self-esteem there is more impact of serious abuse even in Stanislaus.

Figure 14: How the predicted probabilities of working at least 26 hours vary for those with AOD, MH or DV problems, respectively, depending on self-esteem scores (higher scores mean lower self-esteem) with other covariates held to their mean
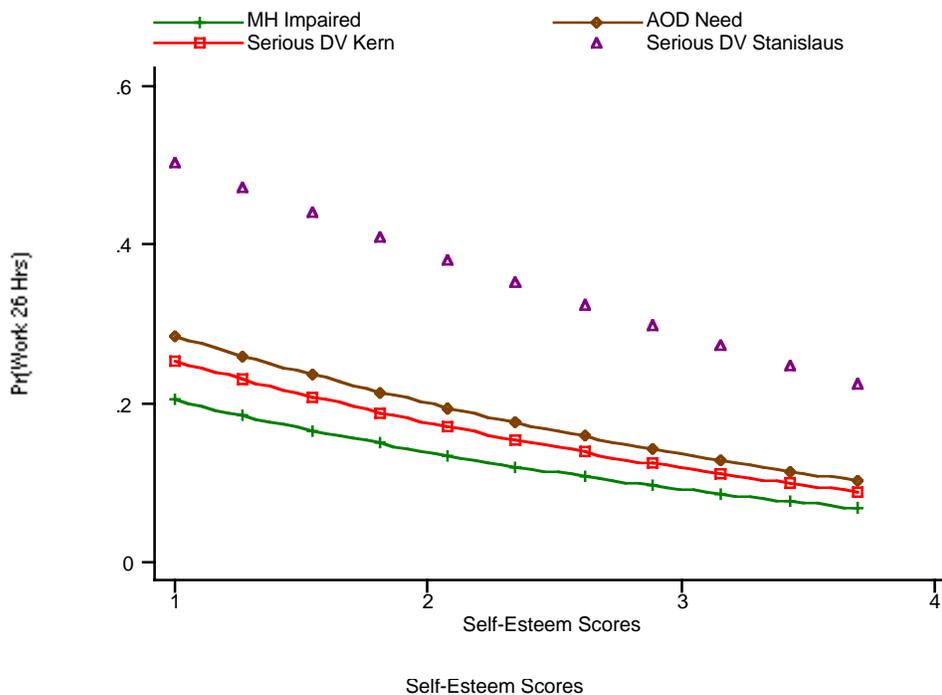
Interaction of AOD/MH/DV and time on welfare. In Kern the mean number of months respondents had been receiving welfare in the 36 months prior to the first round interviews was 26.7 not surprising since a requirement to be in the study was receiving welfare at least a year at the time of the first interview. However, because 79 percent of the Stanislaus respondents had also received welfare at sometime in the previous three years (though reapplying at the time of the interview), the mean number of months in Stanislaus was a substantial 18.2. Somewhat surprisingly, this factor was not significantly related to whether respondents worked at least 26 hours a week at the time of the Round II interview one year later. Figure 15 graphs the predicted probability of working 26 hours for those with AOD/MH/DV conditions in

relationship to the number of months on welfare in the 36 month baseline period.[88] The almost flat line shows the lack of a strong relationship between working 26 hours and time on welfare in the baseline. However, the result is also counter-intuitive because the predicted probability of working is higher for those who received welfare a greater number of months.

Figure 15: How the predicted probabilities of working at least 26 hours vary for those with AOD, MH or DV problems, respectively, depending on number of months receiving CalWORKs in the three years prior to the Round I interviews (other covariates held to mean)
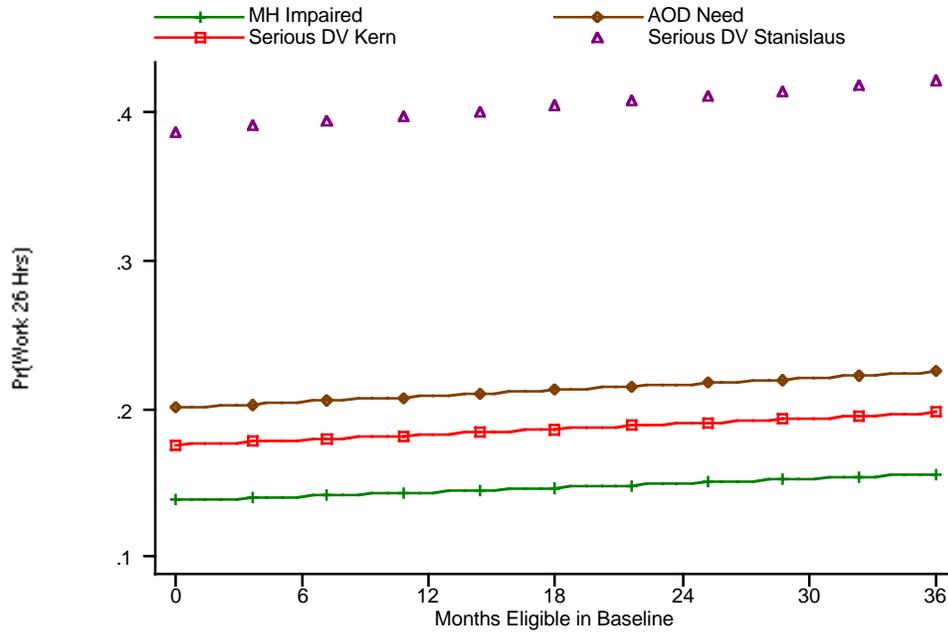

AOD/MH/DV and age in relationship to work. A recent study conducted in three sites around the country, including in San Bernardino County in California, found that depression was both more likely to occur in older TANF recipients and consequently more likely to interfere with work in older recipients.[89] In our combined sample neither age nor age squared (to account for the often curvilinear effect of age) was significant either alone or in interaction with the AOD/MH/DV barriers. Below we show the predicted probability of working at least 26 hours at Round II for the AOD/MH/DV barriers at different ages (with Kern and Stanislaus separated for DV). In general there is a small tendency to have a higher probability of working if younger (which is consistent with San Bernardino), but the tendency is not strong.

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[88] The actual baseline period was calendar years 96-98 while the Round I interviews took place in April-September of 99.

[89] Richardson, P. (2002). *Depression and Other Mental Health Barriers Among Welfare Recipients — Results from Three States*. Fairfax, Virginia: Maximus: http://www.cortidesignhost.com/maximus/cpss/publications.asp.

Figure 16: How the predicted probabilities of working at least 26 hours vary for those with AOD, MH or DV problems, respectively, depending on age (other covariates held to mean)
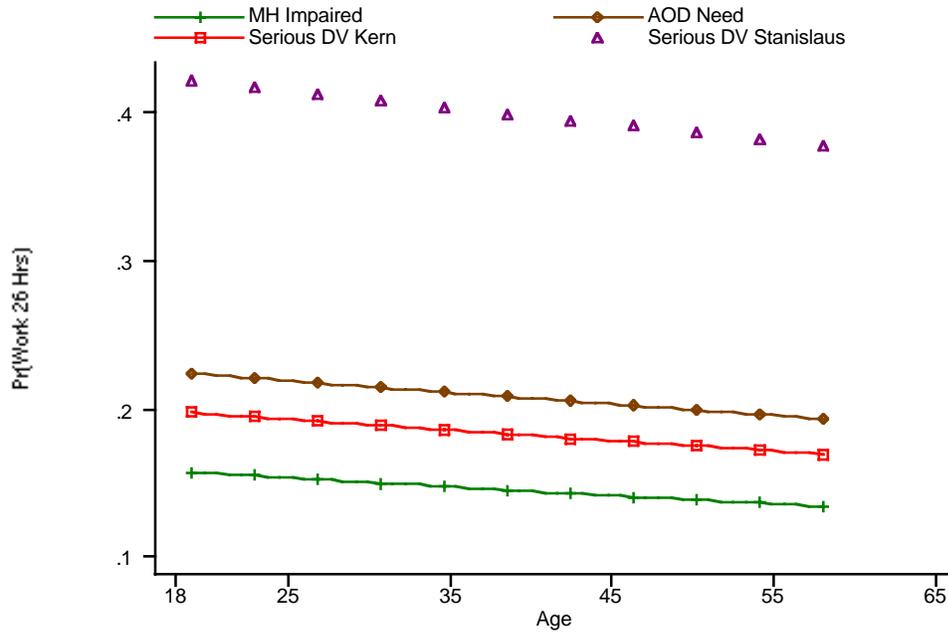
Figure 17: Histogram of number of weeks worked in year prior to Round II interview, both counties combined
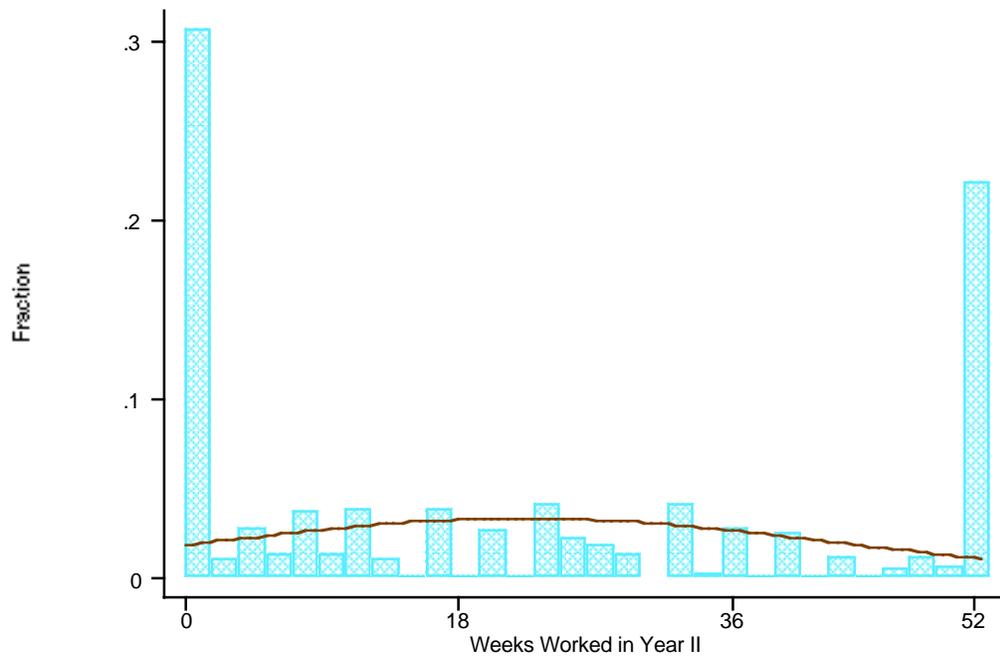
C. Multivariate regression model using weeks worked as the dependent variable

On page 33 we analyzed AOD/MH/DV variables in relationship to the number of weeks worked during the year before the Round II interview. There we looked at two separate processes: did a respondent work at all during the year, and if so, how many weeks did she work. Here we take a somewhat different tack. A histogram of the number of weeks worked (with a normal curve superimposed on the bins) reveals that the distribution is strongly bimodal (Figure 17 on the previous page). In fact, about one third of the respondents did not work at all, one fifth worked all 52 weeks, and two-fifths worked some part of the year.

Logistic Regression: Work vs. No-work. Earlier we dealt with this skewed distribution by first looking at the effect of our predictor variables on work/no-work during the year. We pursue the same strategy now, using multiple logistic regression to model the effects of the 18 barriers on whether the respondent worked at all during the year. Compared to the percentages working at the time of the interview, the proportions reverse, as overall 68 percent were not working 26 or more hours a week at the time of the Round II interview while here 70 percent *did* work at least some weeks during the year.

Previously we used the question of whether finding child care was very difficult as a measure of the impact of child care. Here, we used a question asking whether difficulty with child care had actually prevented the respondent from seeking work. (The latter was statistically significant; the former was not.) Otherwise the variables were the same as those used for modeling whether the respondent worked 26 or more hours at the time of the Round II interview. As before we report McFadden s R2: .186, or fairly close to the R2 for the 26 hours a week model.

In this model substance abuse was not a significant predictor.[90] See Table 42. Although the MH variable that was most predictive in modeling 26 or more hours per week of work at the Round II interview (impaired daily activities due to MH symptoms at least 5 of prior 30 days) continued to be significant, two other MH variables appeared to be at least as predictive: a) the overall score on the BASIS-32 scale and b) a variable created by counting as positive any respondent having at least two of four measures of severe MH problems.[91] Domestic violence continued to be significant in different ways in the two counties, being associated with not working in Kern and working in Stanislaus.

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[90] Variables tried include any drug use, overall AOD need, any dependence or abuse, drug dependence, and alcohol dependence.

[91] The four measures are: outpatient level need on the BASIS-32, unable to perform daily activities 5/30 days, outpatient level of functioning for the SF12 mental health score, and having two or more diagnoses. Each of these measures taps different dimensions of mental and emotional functioning. Having at least two is thus both a stronger measure of severity than any single measure. Within the two counties these measures identify between 84 (unable 5) and 104 (two diagnoses). The any two standards measure identifies 103 person. Note that there are major differences in the time reference for the different variables: The past week for BASIS 32, past 30 days for Unable 5/30, past four weeks for SF-12 mental health measure, and past year for two or more diagnoses.

Table 42: Multiple logistic regression model of whether respondents worked at all in the 52 weeks prior to the Round II interview, both counties combined

Predictor	Odds Ratio	Confidence Interval
County is Stanislaus	0.29	(0.14 - 0.59)**
Not Work in Last Year (Round I)	0.06	(0.03 - 0.13)**
County * Not Work in Last Year (Round I)	6.54	(2.65 - 16.19)**
Child Care Problems Caused Not to Look for Work	0.65	(0.37 - 1.13)
Care for Disabled Child	0.64	(0.35 - 1.16)
Physical Health Problems	0.59	(0.38 - 0.94)*
No Driver s License	0.58	(0.38 - 0.89)*
Not African-American	0.53	(0.28 - 1.01)+
Impaired MH Functioning 5/30 Previous Days	0.58	(0.32 - 1.03)+
Serious DV	0.46	(0.19 - 1.10)+
County*Serious DV	2.79	(0.93 - 8.34)+

Observations 551[92]
95% confidence intervals in parentheses
+ significant at 10%; * significant at 5%; ** significant at 1%

Weeks worked, if any. Previously our second step was to perform a t-test using the number of weeks worked (that is, dropping those who did not work at all) as the dependent variable and each predictor as the grouping variable. Because the t-test is robust to fairly large departures from normality, the heavily skewed weeks worked variable did not appear to be a significant problem. (Similar results were obtained using the rank sum test which uses ordinal position rather than actual values.) With ordinary least squares regression, however, the ceiling effect (a clump of one fourth of the respondents who worked all 52 weeks) violates assumption of homoscedacity in the residuals. In order to deal with this highly skewed distribution we tried three models: a) robust OLS regression b) quantile regression to see if the 25th, 50th, and 75th percentiles produced different equations, and c) ordinal logistic regression in which the distribution of those working any was broken down into three ordered categories.

Robust OLS Regression. Table 43 shows the regression coefficients and their 95 percent confidence intervals. Neither the MH nor AOD variables come close to being statistically significant; the DV variable has a p value of 0.15. The most important predictor by far was not having worked in the year prior to the Round I interview (and its interaction with county). Situational variables (child care, not having a home of own, and no driver s license) were strongly predictive as was lack of work skills. The overall model explained 21 percent of the variance.

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[92] The N of 551 rather than 579 is due to missing data on the dependent variable.

Table 43: Robust ordinary least squares regression of predictor variables on weeks worked, if any: both counties combined

Predictor	Coefficient	Confidence Interval
Not Work in Last Year (Round I)	-17.78	(-23.38 - 12.18)**
County * Not Work in Last Year (Round I)	11.54	(4.20 - 18.87)**
No Home of Own	-8.97	(-12.95 - 4.99)**
Low Work Skills	-7.74	(-12.00 - 3.49)**
Child Care Very Difficult Arrange	-6.23	(-11.35 - 1.10)*
No Driver s License	-5.28	(-8.96 - 1.59)**
Impaired MH Functioning 5/30 Previous Days	-3.31	(-8.99 - 2.38)
Overall AOD Need	-0.16	(-5.75 - 5.44)
Serious DV	-3.46	(-8.16 - 1.24)
Constant	42.27	(39.43 - 45.11)**

Observations 386
R-squared   0.21
95% confidence intervals in parentheses
+ significant at 10%; * significant at 5%; ** significant at 1%

Quantile Regression. Quantiles are values below which a certain fraction of a distribution lie. A .75 quantile is the value higher than 75 percent of the data; the median is the .50 quantile. Quantile regression estimates the median or other quantiles rather than the mean. We use a routine in the Stata statistical package that produces in the same model the predictors for three different quantiles. The .25 quantile is 14 weeks of work, the .5 quantile is 29.5 weeks of work, and the .75 quantile is 52 weeks of work. In Table 38 we show the coefficient for each statistically significant predictor at each of the three quantiles. We left in the model all predictors significant (or close to significant) in at least one of the three linked regressions. We also tried the model with different AOD/MH/DV measures.

The final model (see Table 44) used overall need for DV services, AOD dependence or abuse, and outpatient level MH need (BASIS-32). Although each of the AOD/MH/DV variables was at least close to statistically significant at one of the quantiles, none was significant at more than one. AOD dependence or abuse actually predicted more weeks of work but only at the lower quantile. Overall, high predictive power was associated with the same human capital (work in the year prior to Round I and low work skills) and situational variables (transportation, child care, no home of own) as in the robust OLS regression. Only not having worked in the year prior to Round I was predictive at all three of the quantiles. At the .25 quantile the model had a pseudo-R2 of .12, at .5 it was .18, and at .75 it was .13. [93]

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[93] The sqreg routine in Stata was used. Standard errors were bootstrapped with 200 repetitions.

Table 44: Quantile regression of predictor variables on weeks worked, if any: both counties combined and using the .25, .50, and .75 quantiles

Predictor	Coefficient with Quantile=.25 (14)	Coefficient with Quantile=.50 (29.5)	Coefficient with Quantile=.75 (52)
County is Kern	-1	7*	(Probability=1.0)
Did Not Work in Year Prior to Round I	-13**	-23**	-24**
Kern * Did Not Work In Year Prior to Round I	9.5*	18.5**	12*
Low Work Skills	-9**	-9*	-2
Child Care Very Difficult	-1	-5	-12**
No Driver s License	-6.5**	-7.5*	(Probability=1.0)
No Home of Own	-11.5**	-12.5**	(Probability=1.0)
Less than HS Education	(Probability=1)	-4.5	(Probability=1.0)
Overall DV Need	-6.5*	-4.5	(Probability=1.0)
Outpatient Level MH Need	-7+	-5.5	(Probability=1.0)
AOD Dependence or Abuse	7 (p<0.11)	(Probability=1.0)	(Probability=1.0)
CONSTANT	31.5**	45**	52**

Number of observations = 386 .25 Pseudo R2 =   0.119; .50 Pseudo R2 =   0.181; .75 Pseudo R2 =   0.128

Ordinal Logistic Regression. To model this distribution in ordered categories we need to think about how welfare reform requirements work. When a client enters the system she usually has up to two months to find a job on her own before being referred to an employment counselor. Thus, it seems reasonable to include with those who worked all 52 weeks those who worked in the range 44 to 52 weeks. There is no good substantive reason for distinguishing between the persons who worked between 1 and 43 weeks, but even if we don t know exactly where it might lie, there ought to be a difference between those who work a number of months and those who do not. So somewhat arbitrarily we say those working 1-22 weeks are in one category and those working 22-43 weeks are in a second. We then have three ordered categories: 1-22 weeks, 23-43 weeks, 44-52 weeks. The percentages in each county and combined are shown in Table 45. In our case, because it seems that the no-work and the 52 weeks work categories represent something more than ends of a continuum, we do not make the common assumption that there is a latent continuous variable behind these four categories. Instead we simply view it as a probability model of the relationship between our explanatory variables and the probability of being in each of the four categories.

Table 45: Categorization of weeks worked in year prior to Round II interview, by county

Weeks Worked	Kern	Stanislaus	Total
1-22	62	70	132
	34.8%	33.2%	33.93%
23-43	44	68	112
	24.7	32.2	28.8
44-52	72	73	145
	40.4	34.6	37.3
Total	178	211	389
	100.00	100.00	100.00

Table 46 shows the results of this analysis. None of the AOD/MH/DV variables was statistically significant, regardless of the measure used. (DV came closest with the Overall DV Need measure: p<0.15). However, the same human capital and situational variables remained significant (with health problems also being marginally significant).

Table 46: Ordinal logistic regression of predictor variables on weeks worked, if any: both counties combined (Categories 1-22 weeks, 23-43 weeks, 44-52 weeks)

Predictor	Coefficient	Confidence Interval
Did Not Work in Year Prior to Round I	-1.83	(-2.51 - 1.15)**
Kern * Did Not Work In Year Prior to Round I	1.25	(0.41 - 2.09)**
Low Work Skills	-0.78	(-1.26 - 0.29)**
Child Care Very Difficult	-0.74	(-1.33 - 0.16)*
No Driver s License	-0.62	(-1.03 - 0.20)**
No Home of Own	-1.04	(-1.50 - 0.58)**
Impaired Health	-0.42	(-0.90 - 0.06)+
Overall DV Need	-0.34	(-0.80 - 0.13)
Impaired MH Functioning 5/30 Previous Days	-0.12	(-0.82 - 0.58)
AOD Dependence/Abuse	0.07	(-0.68 - 0.82)

Observations 386
95% confidence intervals in parentheses
+ significant at 10%; * significant at 5%; ** significant at 1%

Summary of Findings Regarding Weeks Worked. Because of the non-normal distribution of the number of weeks worked in the year we have tried several ways of modeling the effects of the 18 potential barriers. However, the substantial consistency across models leads us to be fairly confident in three conclusions:

‒ Both mental health problems and DV issues are predictive of whether respondents worked at all during the year; DV is a negative predictor only in Kern, however. No measure for AOD problems is predictive.

‒ However, no AOD/MH/DV measure is consistently predictive of the number of weeks worked if any. Both a mental health and a DV measure were negatively predictive for the .25 quantile; while AOD was actually positively predictive for this quantile. Confirming the bivariate analysis, then, there is a strong effect by AOD/MH/DV variables on whether or not people work at all but minimal or nonexistent effect on the number of weeks worked, if any.

‒ Certain human capital and situational variables appear to be strongly predictive in all analyses. They are: whether or not the respondent worked at all in the year prior to the Round I interview, having only 3 of 11 work skills, having no home of own, child care difficulties, and no driver s license. Health care problems, lack of a high school degree and race (African-Americans were more likely to work but not to work more weeks if they did work) were statistically significant in some analyses but not others.

D. Prediction of those capable of stable full-time employment

We will examine actual income (both from employment and welfare) in a later report. Here, though, it is useful to try to see what percentage of the respondents were working enough in this first year of welfare reform that they might achieve economic independence. As above, we think it is reasonable to assume that those working 44 weeks or more during the year who *also* were working at least 32 hours a week at the time of the interview were good candidates for achieving economic independence. If they met both

these criteria, we said they had stable employment. So our goal is to see what role the presence or absence of the 18 potential barriers we have identified play in determining the capacity for economic independence.

Table 47: Multivariate logistic regression model of predictors of working at least 44 of the prior 52 weeks and working at least 32 hours a week at time of interview, both counties combined

Predictor	Odds Ratio	Confidence Interval
County is Kern	1.89	(1.05 - 3.40)*
Did Not Work in Year Prior to Round I	0.02	(0.00 - 0.18)**
Kern*Did Not Work In Year Prior to Round I	23.07	(2.60 - 204.52)**
Low Work Skills	0.34	(0.17 - 0.70)**
Live with Child/Children Under Age Three	0.61	(0.34 - 1.13) [p<0.11]
Child Care Very Difficult	0.20	(0.07 - 0.61)**
No Driver s License	0.44	(0.25 - 0.79)**
No Home of Own	0.59	(0.32 - 1.09)+
Impaired Health	0.58	(0.31 - 1.09)+
Impaired MH Functioning 5/30 Previous Days	0.69	(0.26 - 1.85) [p<0.46]
Used any drug	0.40	(0.18 - 0.88)*
Serious Abuse	2.08	(0.93 - 4.66)+
Kern * Serious Abuse	0.22	(0.04 - 1.07)+

Observations 576
R^2=.21
95% confidence intervals in parentheses
+ significant at 10%; * significant at 5%; ** significant at 1%

In Kern only 16.5 percent of the respondents met both of these conditions while 16.7 percent did in Stanislaus (the combined percentage was 16.6). As shown in Table 47, the statistically significant predictors are generally the ones that were important in earlier analyses: Human capital variables (not having worked in the year before the first interview and low work skills), situational variables (child under three, no driver s license, no home of own, child care difficult). In addition impaired health, serious domestic violence and use of any illicit drug[94] in the prior year were all predictors. None of the mental health measures was significantly predictive,[95] nor were any of the AOD variables that have been predictive in other analyses (dependence or abuse, overall need for DV services). The small N among those with stable employment may have contributed to these somewhat anomalous findings for mental health and AOD. In fact, because of the small N and the unique constellation of AOD/MH/DV measures that turned out to be statistically significant (or not in the MH case), it is likely that this model is over-fitted. Nonetheless, the constellation of significant predictors is quite similar (in general form) to our earlier findings.

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[94] Metsch summarizes a substantial body of research that indicates substance abusers may not be less likely to work but are less likely to maintain stable employment. So this finding with regard to use illegal drugs is not inconsistent with other research, although unanswered is the question of why diagnoses of dependence and abuse were not predictive. Metsch, L. R., McCoy, C. B., Miller, M., McAnany, H., & Pereyra, M. (1999). Moving substance-abusing women from welfare to work. *J Public Health Policy, 20*(1), 36-55.

[95] The model was repeated with alternative mental health measures: need for outpatient treatment (BASIS 32), two or more diagnoses, SF-12 high mental health need, and met at least two of the other need standards (including impairment 5 of last 30 days).

Multivariate and Bivariate Estimates of AOD/MH/DV Effects. Table 48 shows the bivariate relationship of the employment variable (44 weeks & 32 hours) with the AOD/MH/DV measures used in the multivariate analysis. In the bivariate relationships, approximately twice the percentage those without the condition as those with the condition had stable work. The exception, as before, is serious domestic violence which is again predictive of not working in Kern but of working in Stanislaus. (Statistically significant relationships obtained for MH and DV only in Kern and for AOD only in Stanislaus.)

Table 48: Bivariate (unadjusted) relationship of working at least 44 of the prior 52 weeks and working at least 32 hours a week at time of interview with AOD/MH/DV measures

Predictor	Kern		Stanislaus	
	Stable Work No Condition N Percent	Stable Work Has Condition N Percent	Stable Work No Condition N Percent	Stable Work Has Condition N Percent
Impaired MH Functioning 5/30 Days	232 19%	41 5%*	263 18%	43 9%
Serious DV	232 18	41 7+	244 16	62 19
Use of Any Illicit Drug	229 18	44 9	244 19	62 8*

N is the total number of observations for the column.
+ significant at 10%; * significant at 5%; ** significant at 1%. Chi-square in individual four-fold tables.

Table 49: Multivariate adjusted relationship of working at least 44 of the prior 52 weeks and working at least 32 hours a week at time of interview with AOD/MH/DV measures

Predictor	Kern		Stanislaus	
	Stable Work No Condition N Percent	Stable Work Has Condition N Percent	Stable Work No Condition N Percent	Stable Work Has Condition N Percent
Impaired MH Functioning 5/30 Days	231 11%	41 8%	261 6%	43 5%
Serious DV	231 10	41 5*	242 6	62 11*
Use of Any Illicit Drug	228 12	44 5*	242 7	62 3*

N is the total number of observations for the column. + significant at 10%; * significant at 5%; ** significant at 1%.
Indicates difference in the four percentages and for DV, the interaction of county and DV.

As shown in Table 49 , the relationships between stable work and serious DV and use of illicit drugs are actually somewhat stronger when other variables are controlled while that for MH is weaker. The opposing effects of DV in the two counties remains, however.

E. Does causation work both directions?

Does being on welfare contribute to substance abuse? Does it make recipients depressed?[96] Does it exacerbate domestic violence? Or, a related question: does finding employment alleviate depression? In our analysis so far, we have assumed that the AOD/MH/DV condition is logically and temporally prior to whether a woman leaves welfare or works. So, for example, we have asked: If a woman has a serious mental health impairment, does that affect how many weeks she worked in the last year? What, though, if it also works the other way? Perhaps women who work few weeks develop psychiatric symptoms due to their failure to find needed work.

The econometric approach to such issues is instrumental variable regression.[97] One can simultaneously model both the process that leads to depression (or drinking or DV) and the process that leads to leaving welfare/working. The only requirement is that there be a at least one *instrument*: a variable that correlates with depression (or drinking or DV) but not with leaving welfare/working.[98]

Findings on Dual Causation

First we looked specifically at depression. Depression is not statistically significant in a multivariate analysis of working at least 26 hours a week. However, this could be because of confounding due to multiple causation. We modeled the factors that explain depression separately (including support scale scores as the instrument), and then together with the OLS model for working 26 hours or more.[99] A Hausman test confirmed that the instrumental regression modeling was unnecessary in this case.

The mental health variable which was most significant in modeling working 26 hours or more was functional impairment due to mental health symptoms. We independently modeled factors which explain functional MH impairment[100] and then used that model as part of the two stage process in instrumental variable analysis. However, the variance explained using instrumental variable modeling was no greater than with OLS modeling, and a Hausman test confirmed there was no advantage to applying instrumental variable regression.

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[96] The evidence in prior welfare reform studies is mixed, with five studies finding increased depression and two decreased. This evidence is summarized in: Ahluwalia, S. K., McGroder, S. M., Zaslow, M. J., & Hair, E. C. (2002). *Symptoms of Depression Among Welfare Recipients: A Concern for Two Generations*. Child Trends Policy Briefs. Available: http://www.childtrends.org/PDF/Research%20_Brief_Depression.pdf.

[97] Technically instrumental variable regression is a method to get around the correlation of a particular regressor, like depression, with the error term of a regression model. Such a correlation might arise from an omitted variable, from selection effects, or the kind of simultaneity we may face here.

[98] The modeling is potentially complicated, however. Use depression as an example. At first blush, it might appear that the persons who are depressed at the time of the Round II interview are made up of those who were already depressed and those who *became* depressed in the past year (due to being on welfare). In this case, our concern would be modeling the factors that caused new cases of depression between the Round I and Round II interviews. However, one might also hypothesize that women who had been on welfare a long time might have become hopeless and thus depressed. So even those who were depressed in both years might involve this process of reverse causation. Or even more complicated, the stresses of welfare to work exacerbate a DV situation which in turn causes high mental health stress and symptoms.

[99] Instrumental variable regression is not available for logistic models so OLS was used instead. The difficulties with using OLS for modeling binary events are not critical in this context. A total of 24% of the variance for depression was explained by need for DV services, low social support, low self-esteem and county.

[100] These explanatory variables included: AOD need, DV need, having suffered trauma as a child, lack of social support, low self-esteem, language difficulties, health problems, lack of transportation, more than three children and age over 36. In combination these variables explained 36% of the variance.

Modeling the simultaneous influence of DV proved to be difficult. Overall DV need was not a significant predictor of not working at least 26 hours a week. Serious abuse was, but only in Kern. Therefore we limited the DV modeling to Kern County. We found a set of predictor variables for serious abuse[101] (in Kern), and then used those as well in an instrumental variable regression. As with mental health need, the simultaneous modeling was not warranted.

We also modeled the simultaneous effects of not working and need for AOD services. Only 10% of the variance of AOD need for services was explained by the predictive model.[102] Once again, the instrumental variable regression added no explanatory power and simultaneous modeling does not appear warranted.

For none of the AOD/MH/DV variables we tested were we able to confirm that being on welfare/out of work caused the problem and that this process should be taken into account in modeling the relationship of AOD/MH/DV variables to employment.

The related hypothesis, that becoming employed alleviated depression, finds some support, however.

If we restrict the analysis to those who met diagnostic criteria for Major Depression at the Round I interview, we find that of those working less than 26 hours a week in Round II, 45% are depressed while among those working at least 26 hours only 29% are depressed. The same pattern occurs for those working at least 32 hours a week, but the relationship is much weaker when the number of hours is not specified (that is, permitting very part-time work to count).

If we again restrict the analysis to those who met diagnostic criteria for Major Depression at the Round I interview and then compare the mean symptom score on the BASIS-32 for those working at Round II vs. those not working, the symptom score is significantly lower for those working. The reduction in symptoms scores of those working holds true if one controls for having received treatment, prior work, health, self-esteem, Round I symptom scores and need for DV (all of which are statistically significant) as well.[103] However, if rather than limiting analysis to the 27% having Major Depression we limit to the 19% in Round I who had outpatient level symptoms scores on the BASIS-32 and then compare BASIS-32 scores in Round II of those working and those not, there is no difference in scores. This group is much smaller than those with depression and has considerably higher symptoms scores overall. So while symptom scores of the depressed are lower if respondents are working, symptoms scores of the most impaired are not. (A finding which is consonant either with selection of the less impaired depressed women into employment or with employment having caused a reduction in symptom scores.)

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[101] The model explained only 17% of the variance in serious abuse. The predictors were: mental health need as defined by the BASIS-32 scale (neither depression nor functional impairment was significant), need for AOD treatment, less than HS education, having a partner, and a low score on the social support scale.
[102] The predictors were: functional problems due to MH, learning disability, health problems, transportation problems, lack of high school education, and weekly work hours.
[103] The overall model explains 49% of the variance in Round II symptom scores (adjusted R2). All of the variables except work predict increased symptom scores; work predicts reduced symptoms.

PART V: PREDICTING THE CUMULATIVE IMPACT OF REMOVING OBSTACLES TO EMPLOYMENT

The overall impact of addressing barriers for the hard to employ. For each type of employment outcome described above we have calculated the change in the *overall* probability of those having a positive outcome if all the important barriers for that issue were remediated. In other word, we calculate the discrete change in probability that would occur were *all* of the predictors in our multivariate models to change from negative to positive. We do the same for the AOD/MH/DV barriers combined. In doing so, we are once again making a very strong assumption about causality. Given this assumption, we can calculate both the maximum gain in outcomes possible if all of the barriers was rectified and the gain if just the AOD/MH/DV barriers were rectified.

Figure 18 shows the measures with the potential for change. The percentage working at least 26 hours a week by 33 percentage points from 38% to 71%. A .09 change in probability is attributable to the removal of AOD/MH/DV barriers and a .24 change in the probability is attributable to the removal of other barriers.

Figure 18: Predicted probability of working at least 26 hours a week at Round II if barriers were removed, both counties combined: AOD/MH/DV barriers only, other barriers only, all barriers

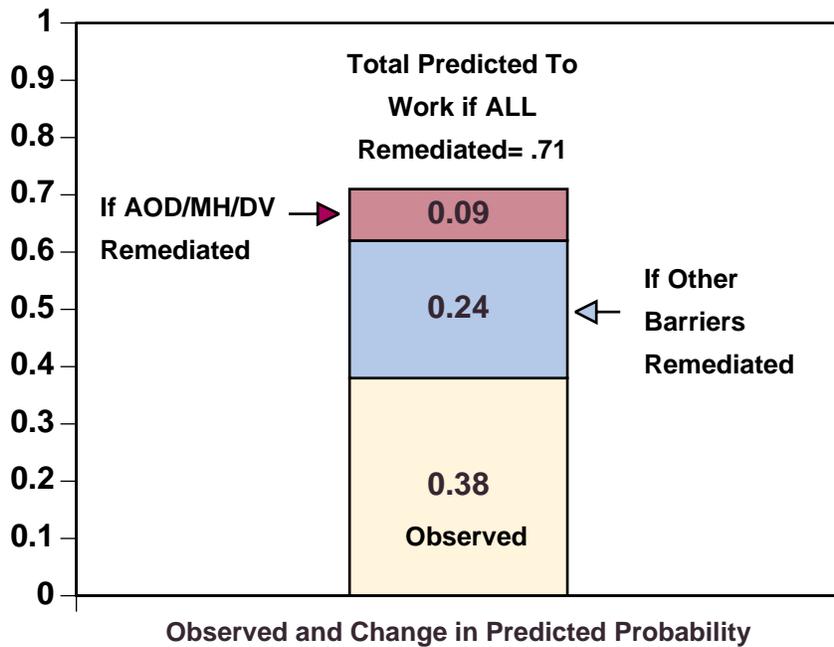Observed and Change in Predicted Probability

Table 50 generalizes this graph by answering the question of how much *each* type of employment outcome would change in a TANF population if the remediable obstacles to employment that were statistically significant in each model were eliminated entirely.

Table 50: Predicted change in employment outcomes if remediable barriers were removed, both counties combined

Type of Outcome	Observed Value	Maximum Population Change: Removal of All Barriers	Maximum Population Change: Removal of AOD/MH/DV
Work at least 26 hours a week	.38	.33	.09
Worked at all during year	.70	.10	.03
Average number of weeks worked in year, if any	32 Weeks	6 Weeks	1 Week
Worked at least 44 weeks and working at least 32 hours per week at Round 2 interview	.16	.22	.03

These remediable barriers, other than the AOD/MH/DV conditions, vary somewhat by each type of outcome but generally include child care problems, not having a home of own, no driver s license (proxy for transportation problems), and low work skills. Overall, removal of these obstacles to employment could make a large difference for all four employment outcomes. For example, it would increase those with stable employment (44 weeks a year, 32 hours a week) by 22%, or from 16% to 38%.

APPENDIX: ALTERNATIVE MULTIVARIATE REGRESSION MODEL USING OVERALL NEED FOR DV SERVICES AS A PREDICTOR

As shown on pages 23-27, most measures of domestic violence showed a much stronger impact on employment at least 26 hours a week in Kern County than in Stanislaus County. However, this was less the case with some measures, most particularly measures of less serious abuse and the overall need for DV services. In this appendix we show the effects of using an alternative measure to serious abuse and of taking into account all interactions with that measure. The introduction of statistical controls for less than high school education, age under 36, having a partner, having received DV services, and having used welfare to leave an abusive relationship all shed light on the different impact by county.

We included these variables (and their interactions with county) in an alternative multivariate regression model. Results are presented in Table below. Note that in this model an interaction of DV need with education, an interaction of DV need and having a partner, and an interaction of DV need with education, and an interaction of county with having a partner proved significant (of the variables mentioned above).

Table 51: Logistic regression model for working at least 26 hours a week, both counties combined using overall need for DV services as a predictor.

Predictor	Odds Ratio	95% Confidence Interval
Needed DV Services or Got Them	0.44	(0.10 - 1.89)
Needed DV Services and County is Kern	0.59	(0.17 - 2.05)
Did Not Need DV Services & High School Degree	3.40	(1.10 - 10.50)*
Needed DV Services & Have Partner	0.27	(0.08 - 0.84)*
County is Kern	0.36	(0.11 - 1.26)
County is Kern & Have Partner	1.67	(0.89 - 3.13)
Overall AOD Need	0.51	(0.26 - 1.01)+
Impaired MH Functioning 5/30 Previous Days	0.30	(0.13 - 0.70)**
Abuse as child was worse than adult abuse	1.63	(0.95 - 2.80)+
Race/Ethnicity is African-American	0.50	(0.29 - 0.87)*
Not Work in Last Year (Round I)	2.95	(1.21 - 7.20)*
County * Not Work in Last Year (Round I)	0.21	(0.11 - 0.41)**
No Housing of Own	0.47	(0.29 - 0.77)**
No driver s License	0.60	(0.39 - 0.92)*
Child Care Very Difficult To Arrange	0.44	(0.23 - 0.85)*
Discriminated Against 'Often'	2.12	(0.83 - 5.43)
Live with Child/children Under Age Three	0.73	(0.47 - 1.13)
Physical Health Problems	0.52	(0.32 - 0.84)**
Very Low Self Esteem	0.61	(0.40 - 0.94)*
Three or Less of 9 Work Skills	0.68	(0.41 - 1.10)

Observations 576
95% confidence intervals in parentheses
+ significant at 10%; * significant at 5%; ** significant at 1%

This model had a McFadden s R2 (adjusted) of .16 and an adjusted count R2 of .29. When the covariates were held to their mean, the relationship between working at least 26 hours a week and need for DV services was strong and in the same direction in both counties, as shown in Table 52.

Table 52: Predicted probability of working 26 or more hours, adjusted for covariates including need for DV services

County	Predicted Proportion Working 26 Hours if *No* DV Need	Predicted Proportion Working 26 Hours if Have DV Need
Stanislaus	.47	.28
Kern	.24	.12

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