# The effect of an enhanced employee assistance program (EAP) intervention on EAP utilization

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## Abstract:

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**Keywords:** employee assistance program (EAP) | diversity | alcohol | workplace | intervention

## Article:

*****Note: Full text of article below**

# The Effect of an Enhanced Employee Assistance Program (EAP) Intervention on EAP Utilization*

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**ABSTRACT.** *Objective*: An enhanced employee assistance program (EAP) intervention was developed that delivers comprehensive EAP outreach services to all employees who may have alcohol-related and other workplace problems; standard EAP materials traditionally targeted at white men were enhanced to include women and minorities. This study evaluates whether the enhanced EAP intervention increased EAP utilization. *Method*: The enhanced EAP intervention was developed at a large community-based not-for-profit EAP located in Rockford, Illinois. Two primary worksites and 16 other newly contracted worksites received the enhanced EAP intervention and served as intervention sites; the 107 other worksites serviced by the EAP were used as comparison sites. We used time series data from 1991 to 1998 and included repeated measures on each firm's quarterly EAP utilization. *Results*: The enhanced EAP intervention increased the mean number of women and minority cases per worksite by 58%, white male cases by 45% and total EAP cases by 53%. *Conclusions*: This study shows that, for a modest cost, the enhanced EAP intervention successfully increased utilization of EAP by all employees, especially utilization by women and minority employees. It also shows that traditional EAP services and outreach materials can be made more appealing to women and minorities without adversely affecting their utilization by white men. (*J. Stud. Alcohol* **62:** 351-358, 2001)

EMPLOYEE ASSISTANCE PROGRAMS (EAPs) are the principal intervention mechanism for dealing with alcohol and other health and behavioral problems in the workplace (Blum and Roman, 1989). EAPs offer a wide range of services, including training and consultation with supervisors, outreach and education of EAP use, short-term counseling and employee referrals to appropriate services (Blum and Roman, 1992). Hartwell et al. (1996) note that 55% of all U.S. employees in private worksites with 50 or more employees were eligible to use EAP services at their worksites in 1992-93 and another 13% were likely to be covered in the near future.

Given the diversity of the contemporary workforce, the demographic characteristics of EAP caseloads vary widely across educational attainment, occupation, gender and race/ethnicity groups (Blum and Roman, 1992). The diversity in EAP caseloads partially reflects the increased presence of women and ethnic minorities in the contemporary workplace. Studies show, however, that women and minorities have unique issues and special needs that may affect their willingness to seek services from an EAP for alcohol-related problems and, when they actually seek care, may limit the effectiveness of services the EAP offers. As noted in Karuntzos et al. (1998), a variety of gender-based obstacles exists, including a greater stigma associated with women's drinking, child care constraints, harassment at the workplace, inadequate health insurance coverage and the inability of supervisors to recognize alcohol-related problems in female employees (Blum et al., 1995; Dahlegren and Willander, 1989; Harris and Fennell, 1988; Levy et al., 1980; Mandel and North, 1982; Turnball, 1989; Wilsnack and Wilsnack, 1991; Young et al., 1987; Younger, 1994). Process evaluation studies have also shown that female employees who do seek EAP services often encounter programs that are not suited to the unique needs of women (Reed, 1994). EAPs (and alcohol treatment programs in general) are usually not prepared to service special populations with alcohol-related problems; these programs are geared mainly toward the mainstream worker (i.e., primarily white men). The variability in EAP counselors' abilities to recognize cultural and sociodemographic differences across varying ethnic groups affects ethnic minorities' propensity to seek EAP services (Gray and Lanier, 1985-86). Jackson (1994) suggests that black women's fear of threatening their own position and security within the organization has limited their willingness to seek EAP services.

Recent studies have also shown that organizational factors (e.g., supervisor attitudes toward substance abuse services, social support in the work environment, confidentiality issues, cost of services and perceived helpfulness of EAPs for alcohol problems) may affect the likelihood that women and minorities visit an EAP. Hall et al. (1991) and Delaney et al. (1998) found that organizational factors influenced

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the propensity to visit an EAP and that this influence varied by ethnicity and gender. These findings suggest the need for a comprehensive outreach program that includes supervisor training to increase EAP awareness, affects workplace attitudes toward substance abusers and communicates clearly the confidentiality and utility of the EAP and its network of community service providers. Such changes will have a positive effect on EAP utilization by all employees in need of EAP services.

In 1995, recognizing the variability in service delivery among EAPs and the diversity of the contemporary workforce, the National Institute on Alcohol Abuse and Alcoholism funded the Research Triangle Institute (RTI) to conduct a 5-year study to design, implement and evaluate an enhanced EAP intervention. This intervention built on the core components of the EAP standard protocol and delivered comprehensive EAP outreach services to all potential clients, revising and enhancing programs and materials to include women and minorities. The purpose of this article is to evaluate the effectiveness of the enhanced EAP intervention for increasing EAP utilization, in general, and among women and minorities, in particular.

## Description of the EAP Intervention Components

### *The Rockford EAP*

To implement and evaluate the enhanced EAP intervention, we collaborated with a large community-based not-for-profit EAP located in Rockford, Illinois. This EAP has been offering services to employees and their dependents in the Rockford metropolitan area since 1986. At the onset of our study, the EAP had a client base of more than 100 companies, with over 28,000 employees and 75,000 dependents or significant partners eligible for EAP services. Prior to our intervention, the EAP employed six full-time and two part-time individuals in their 2,000 square-foot facility in downtown Rockford. Standard EAP services were client assessment, short-term counseling, supervisor training on procedures for identifying problematic behaviors and referring employees to the EAP, employee orientation and outreach seminars on topics related to workplace problems (e.g., stress management), and EAP client referrals to a network of substance abuse, mental health and other treatment providers. This comprehensive array of standard services provided a solid base upon which to build enhanced services to meet the needs of a diverse workforce.

### *Enhanced EAP services*

To develop the enhanced EAP intervention, we conducted a process evaluation that critically examined the standard services offered by the EAP. We first compared the services offered by the EAP to the list of core technologies or components recognized by the Employee Assistance Professionals Association, a national organization representing a large body of professionals employed by EAPs, as essential in all comprehensive EAPs (Roman and Blum, 1989; White et al., 1996). We then examined the content of the materials and the service delivery approach of each component to determine if they represented and were inclusive of issues identified in the literature as relevant to women and minorities in the workplace.

The first level of assessment found that the EAP standard service provision protocols included all six of the components required for comprehensive services. The second level of assessment, however, found several deficiencies. These deficiencies can be broadly classified along three major domains. First, the EAP staff members lacked awareness of cultural diversity issues, which affected their ability to effectively counsel and refer diverse populations. Second, the worksite training programs did not include information generally relevant to women and minorities (e.g., problem identification checklists did not include "family" issues; confrontational approaches were not culturally sensitive). Third, the outreach efforts represented and targeted only white men.

Our overall objective in developing the intervention was to address these deficiencies by revising the standard protocols to be inclusive of women and minorities, and improve the overall EAP protocol to gain better access to all employees who can potentially benefit from EAP services. The key enhancements to the standard protocol are briefly described below (see Karuntzos et al., 1998, for a detailed description of the intervention).

The first step in developing the enhanced EAP intervention was to hire specialized counselors with expertise in gender, family and cultural issues. Two counselors, a black man specializing in minority issues and a white woman with expertise in gender issues, were hired to collaborate with the RTI research team and provide direct EAP services. The specialized counselors revised old EAP procedures and developed new ones that addressed the gaps in the standard EAP services and developed strategies for implementing the intervention across multiple worksites.

To address the first significant deficiency in the standard EAP protocols, we developed training curricula to better prepare current and new EAP counselors in providing effective services for a diverse population. This training included effective techniques to establish rapport with diverse populations, as well as specific information about cultural perceptions regarding alcohol use.

To address the second deficiency, RTI and the specialized counselors augmented the supervisor training materials to improve awareness of women- and minority-specific issues that might affect work performance and lead to an EAP referral. The supervisor training modules were enhanced to increase supervisor awareness of potential

discriminatory practices and attitudes that may affect EAP utilization. In addition, these training modules included specific information for supervisors about recognition of alcohol-related problems and effective referral to the EAP of white male employees as well as women and minority employees (e.g., recognizing early warning signs, strategies for building trust between supervisors and employees).

Because the standard outreach materials generally represented white male employees, we also revised workplace outreach materials to be inclusive of women and minorities without appearing to target them as troubled employees. A key finding of our research effort is the fundamental recognition that EAP materials or programs that were minority or gender specific had the potential to serve as an additional barrier to EAP utilization. The concern was that materials appearing to target minorities or women suggested that these populations were in greater jeopardy for having workplace problems. Therefore, our approach for addressing the gaps for women and minorities identified in our process study was to improve the total package of standard EAP outreach efforts, making the materials more inclusive of a diverse workforce rather than representing (or targeting) only women and minorities. Our approach resulted in an enhanced program that had the potential to reach a broad audience without targeting any one population and, therefore, had the potential to increase EAP awareness and use among all employees who might benefit from EAP services.

*Participating research worksites*

We selected two companies affiliated with the EAP to serve as our primary intervention sites. These study sites allowed us to gather a broad range of data that we could not gather at the other EAP client firms; for example, health claims (see Zarkin et al., 2000) and employee surveys (e.g., French et al., in press). The first worksite (Worksite 1) is a large, primarily single-site organization (i.e., most of its employees work in a central location) that employs over 2,500 mostly female individuals. The EAP has been affiliated with Worksite 1 for over 9 years. The second study worksite (Worksite 2) is a multisite organization that employs over 4,000 mostly female individuals across 50 different locations throughout Rockford, Illinois. The EAP has been providing services to Worksite 2 since 1995. We selected these two worksites because they are both relatively large, they represent diverse workplace settings and employee demographics, and upper management at both worksites strongly endorsed the study. Worksite 1 also had an established history of promoting EAP services and accommodating outreach efforts within the organization. This facilitated the quick adoption of our enhanced EAP intervention and allowed us to refine our protocols based on early feedback from employees and human resources staff.

We began implementing the enhanced EAP intervention at Worksite 1 in April 1995; each component of implementation built on the previous component. The enhanced supervisor training was conducted first, to ensure that the supervisors were informed of our research activities and were prepared to appropriately engage employees who had questions regarding the new EAP outreach materials and/or were seeking referrals to the EAP. We then distributed the outreach materials (e.g., posters, flyers, brochures) at the worksite and held a series of brief (10-15 minute) orientation sessions for all staff at convenient locations throughout the organization. These activities were followed by a series of workshops on gender and cultural issues, selected by the worksite.

After April 1995, the enhanced EAP intervention became part of core services at the EAP; therefore, its staff systematically implemented the enhanced EAP intervention services in all newly contracted worksites. During our study period, the EAP contracted with 16 new worksites. The intervention components were implemented in these worksites (and in Worksite 2) as had been done in Worksite 1. Because of other features of our research design (e.g., an employee survey at Worksite 2 that began prior to the enhanced intervention), we delayed onset of the enhanced services at Worksite 2 until September 1996. The two primary intervention sites plus the 16 new worksites ("other" intervention sites) constitute the 18 intervention sites. The 107 remaining firms at the Rockford EAP that were not classified as intervention sites serve as the comparison group (the nonintervention sites). Thus, all firms that were clients of the Rockford EAP were used in the analysis.

## Data and Methodology

*Data and variable description*

The Rockford EAP maintains a database that contains information on the date each EAP client's case is opened, the identity of each EAP client's firm, the number of employees at that firm and EAP client demographics. From this database, we calculated each firm's quarterly EAP utilization from 1991 to 1998 as the total number of cases opened at the EAP by employees or their dependents during each quarter. Using the demographic variables, we calculated each firm's quarterly number of women and minority EAP cases, and the quarterly number of white male EAP cases. The sum of these two variables equals the quarterly number of EAP cases per firm. We use these quarterly rates as our measures of EAP utilization. An important limitation of the EAP's database is that, with the exception of firm size, it does not contain any firm-level demographic information. Another important limitation of our data is that minorities constitute only about 10% of EAP caseloads. Given the small size of the average caseloads for the other

intervention firms (5.45) and the nonintervention firms (1.28) we chose to aggregate women and minority cases (see Table 2).

The key explanatory variable of interest is an enhanced EAP intervention indicator. As noted above, Worksite 1 began the intervention in April 1995, and Worksite 2 began in September 1996. We identified the 16 other firms as receiving the intervention if they received their initial management training or employee orientation after April 1995. The starting date of the intervention at these sites was determined by the date of this initial training or orientation. Because supervisory training and employee orientation—the first step of our intervention—is often delayed for several months in newly contracted firms due to scheduling constraints on the firm's part, this period between the contract date and the first orientation/training provides baseline data for the 16 other intervention firms. For the 18 intervention firms, we created an enhanced EAP intervention indicator that equaled one in the quarter in which the intervention started and in every quarter thereafter, and equaled zero otherwise.

To isolate the effect of the enhanced EAP intervention per se from the general effect of supervisor training and employee orientation, we created indicator variables that equaled one in the quarter that the training/orientation took place and in one subsequent quarter (i.e., 6 months total), and equaled zero otherwise. In addition, EAP utilization may be different in the first year of a firm's EAP contract compared to long-run utilization. To capture any potential first-year effect of a new contract, we created an indicator variable that equaled one for the first four quarters of a firm's contract with the EAP and equaled zero otherwise.

To better understand the effect of the enhanced EAP intervention, we created two additional intervention indicators. First, we created site-specific intervention indicators to distinguish the effect of the intervention at Worksite 1 and Worksite 2 from the impact at the other intervention firms. This distinction allows us to evaluate whether there are differences in the effect of the EAP intervention across these two worksites and the other worksites. Second, we used time-specific intervention indicators to distinguish the effect of the intervention on EAP utilization in the first year of the intervention from its effect in subsequent years.

We also created variables to measure other factors that may affect EAP utilization. One of these variables is an indicator for whether the firm had a managed care contract with the EAP. Beginning in 1997, firms could contract with the Rockford EAP to serve as the gatekeeper of alcohol, drug and mental health (ADM) services provided by a health care provider associated with the EAP. In these cases, employees were required to visit the EAP to access ADM care. This gatekeeper role should increase EAP utilization. Data were not available on whether an EAP client visited the EAP simply because of the gatekeeper requirement or whether they wanted to receive EAP services. However, the EAP's database labels all cases opened under a managed care contract as managed care cases. We created a firm-level indicator variable that equaled one in the quarter that the firm's first managed care case visited the EAP and in all subsequent quarters, but equaled zero in all previous quarters.

We also created year indicator variables to capture changes in the mean EAP utilization that may have occurred each year. In addition, since larger firms have larger EAP caseloads, all else being equal, we created a firm-size variable that equaled the number of employees who were eligible for EAP services at the initiation of the firm's most recent contract with the EAP.

*Statistical methods*

To control for all of these potentially confounding factors, we estimated a multivariate statistical model of firm-level EAP utilization. Traditional regression models, however, are inappropriate in this case. Because EAP cases are nonnegative integer values (i.e., 1, 2, 3, etc.) and because zero cases in a quarter is a common outcome, we use models that account for the count data nature of our outcome. We use a negative binomial model that parameterizes the EAP cases per quarter as follows:

$$CASES_{i,t} = f\,(N_i^{\alpha} p_{i,t}) \qquad (1)$$

in which $CASES_{i,t}$ is the number of new EAP cases from firm $i$ in quarter $t$, $f\,(\bullet)$ represents the negative binomial distribution, and $N_i$ is the number of employees at firm $i$. To represent the proportion of firm $i$ employees that use the EAP, we use $p_{i,t}$, which is parameterized as follows:

$$p_{i,t} = e^{X_{i,t}\beta + \delta d_{i,t}}.$$

$X_{i,t}$ represents the vector of covariates described above and includes indicator variables for whether the firm received other management training or employee orientation, whether the firm was in the first year of its EAP contract and whether the firm had a managed care contract with Rockford EAP that required their employees to visit the EAP to access ADM care. An indicator variable for whether a firm received the enhanced EAP intervention is $d_{i,t}$. $\beta$, $\delta$ and $\alpha$ are parameters to be estimated. $\beta$ represents the impact of each of the covariates on the proportion of employees visiting the EAP and $\alpha$ is a proportionality parameter; $\delta$ represents the estimated effect of the enhanced EAP intervention on EAP utilization.

Another issue addressed in our empirical work is the potential for the intervention and nonintervention firms to vary in some unobserved way that is correlated with both their EAP utilization and the propensity to be an intervention firm. For example, some firms may have a corporate culture that fosters trust and confidence in the EAP, thus

TABLE 1. Sample characteristics

| | Intervention firms | Nonintervention firms |
|---|---|---|
| Number of firms | 18 | 107 |
| Average firm size (number of employees) | 711 | 127 |
| Number of firms with EAP managed care | 7 | 20 |
| Average proportion of intervention quarters | 0.31 | – |
| Average quarters per firm | 23.1 | 13.6 |
| Average proportion of quarters in which management training or employee orientation took place | 0.16 | 0.004 |
| Average proportion of quarters with EAP managed care | 0.24 | 0.16 |

increasing those firms' EAP utilization. If more of the intervention firms have this "supportive" culture than do the nonintervention firms, our estimate of the effect of our EAP intervention may be biased. The availability of firm-level panel data allows us to estimate "fixed effect" negative binomial models that control for unobserved firm characteristics that do not vary over time. Fixed effects methods compare changes in utilization over time in the intervention firms to analogous changes in the comparison group, to identify the intervention effect. Because they use both the time series and cross-sectional variation in firms, fixed effects methods allow us to control for the effect of *any* firm-level characteristic that does not change over time and for observable characteristics that do change over time. Thus, we use fixed effect negative binomial models to estimate the effect of our EAP intervention on EAP utilization (Hausman et al., 1984).

## Results

Table 1 provides an overview of the characteristics of firms in our data set. Note that the average size of the intervention firms is substantially larger than that of the nonintervention firms. This disparity arises because the primary intervention sites are the two largest employers served by the EAP. The intervention firms also had substantially more supervisor training and employee orientation than did the nonintervention firms. Because the main components of our EAP intervention were implemented through supervisor training and employee orientation sessions, this disparity is to be expected. In addition to being larger, the intervention firms are multisite establishments, a fact that also leads to more supervisor training and employee orientation sessions. The intervention firms had approximately 50% more EAP managed care quarters than the nonintervention firms.

Table 2 describes quarterly EAP utilization at the two primary intervention sites (Worksites 1 and 2), the other intervention sites (Others) and the nonintervention sites. As expected, the two largest sites in the EAP data set—the primary intervention sites—have the largest mean number of EAP cases per quarter for women/minority, white male and total cases. As shown in Table 2, the majority of EAP cases from Worksite 1 and Worksite 2 are women and minorities. This is to be expected since the workforce at Worksites 1 and 2 is primarily female. At the other intervention and the nonintervention sites, women/minorities and white men use the EAP in approximately equal numbers. Table 2 also demonstrates that there is a substantial increase in mean EAP cases from pre- to postintervention for all three case types. For example, women/minority EAP cases increased an average of 19% at Worksite 1, 55% at Worksite 2 and 40% at the other intervention sites.

The results of estimating Equation 1 using a fixed effect negative binomial model are presented in Table 3. The first model presents the overall effect of the enhanced EAP outreach when the intervention coefficient is constrained to be the same for all sites (the two primary intervention sites and the other intervention sites). The estimated intervention effect is significantly different from zero for women/minority, white male and total EAP case models. The coefficient estimate represents the effect of the intervention on the mean number of quarterly EAP cases per firm, holding

TABLE 2. Average number of EAP cases per quarter

| | Intervention firms | | | |
|---|---|---|---|---|
| EAP cases | Worksite 1 | Worksite 2 | Others | Nonintervention firms |
| Women and minority | | | | |
| All quarters | 38.25 | 26.24 | 2.79 | 0.78 |
| Preintervention quarters | 35.12 | 19.86 | 2.42 | – |
| Postintervention quarters | 41.80 | 30.70 | 3.40 | – |
| White male | | | | |
| All quarters | 7.28 | 10.76 | 2.66 | 0.49 |
| Preintervention quarters | 6.76 | 7.71 | 2.33 | – |
| Postintervention quarters | 7.87 | 12.90 | 3.07 | – |
| Total | | | | |
| All quarters | 45.53 | 37.00 | 5.45 | 1.28 |
| Preintervention quarters | 41.88 | 27.57 | 4.75 | – |
| Postintervention quarters | 49.67 | 43.60 | 6.47 | – |

*Note*: Postintervention quarters include the intervention quarter.

TABLE 3. Estimated effect of EAP intervention on the number of EAP cases per firm

| | EAP utilization by women and minorities ($n$ = 1,696 firm quarters) | EAP utilization by white men ($n$ = 1,726 firm quarters) | Overall EAP utilization ($n$ = 1,767 firm quarters) |
|---|---|---|---|
| Model 1 | | | |
| EAP intervention (all sites) | 0.458[‡] | 0.374* | 0.422[‡] |
| | (0.113) | (0.145) | (0.114) |
| Model 2 | | | |
| EAP intervention | 0.225 | 0.167 | 0.280 |
| (Worksite 1) | (0.182) | (0.277) | (0.205) |
| EAP intervention | 0.470* | 0.684* | 0.634[‡] |
| (Worksite 2) | (0.206) | (0.305) | (0.244) |
| EAP intervention | 0.561[†] | 0.346* | 0.414[‡] |
| (other sites) | (0.133) | (0.168) | (0.131) |
| Model 3 | | | |
| EAP intervention | 0.429[†] | 0.292[§] | 0.394[†] |
| First year | (0.132) | (0.174) | (0.131) |
| Following years | 0.480[†] | 0.439[†] | 0.448[†] |
| | (0.124) | (0.161) | (0.128) |

*Notes*: These estimates arise from fixed effects negative binomial models. Other regressors include ln (firm size), an EAP managed care indicator, an indicator variable for management training or employee orientation, an indicator variable for new firm, and year indicators. Standard errors are in parentheses.
[§]$p$ = .10; *$p$ = .05; [‡]$p$ = .01.

the other covariates constant. Given the functional form, it is easier to think about this coefficient in terms of the incidence rate ratio (IRR), defined as $e^{\delta}$. The IRR expresses the intervention effect as a multiple of the preintervention utilization. For example, an IRR of 1.5 suggests that the postintervention utilization is 1.5 times greater than the preintervention utilization, or 50% higher. For Model 1, the IRR indicates that the EAP outreach intervention increases the mean number of women/minority EAP cases by 58%, white male EAP cases by 45% and total EAP cases by 53%. We do not reject the hypothesis that the percentage increase in EAP cases attributable to the enhanced EAP intervention is equal for white men and women/minority cases.

Model 2 relaxes the constraint that the intervention effect is the same at Worksite 1, Worksite 2 and the other intervention sites. Although there are some interesting differences across intervention sites, we fail to reject the null hypothesis that the estimated effect of the intervention is the same across worksites and therefore conclude that there is a single intervention effect.

In Model 3, we investigate whether the first-year postintervention effect differs from subsequent years. For all case types, the estimated first-year effects and subsequent-year effects are approximately the same, with the estimated effect of the later years being somewhat larger. Testing the hypothesis that the two effects are equal, we fail to reject the hypothesis for all case types, and thus conclude that a single intervention indicator variable captures the effect of the EAP outreach intervention. (Other coefficients in the model are available from the first author upon request.)

## Discussion

Our objective for the enhanced intervention was to revise standard EAP protocols to address the barriers to EAP utilization noted in the literature for all employees, and for women and minorities in particular. To accomplish our objective, we identified key areas for improvement that could potentially affect EAP utilization by all employees.

Our results indicate that this comprehensive enhanced EAP intervention had a substantial effect on EAP utilization for women/minorities and white men. The mean number of quarterly women or minority cases per worksite increased by 58%, white male EAP cases increased by 45% and total EAP cases increased by 53%. The effect of the enhanced EAP intervention is not statistically distinguishable between women/minorities and white men. Thus, our intervention—which was directed at all workers but designed to be more inclusive of women/minorities—increased EAP utilization not only for women and minorities but also for white men. This increase in EAP utilization may be attributable to increasing EAP access to (1) individuals who otherwise would not have gone to the EAP or (2) individuals who may otherwise have waited until their condition became more severe. Further research will assist in determining which is more responsible.

It is important to point out that these results arise from statistical models and techniques that control for a set of potentially confounding variables. We isolated the effect of the enhanced EAP intervention per se from a generic increase in EAP utilization associated with supervisor training and employee orientation. We also controlled for the first year of a firm's EAP contract. In addition, we included a variable that captured whether the firm had a managed care contract with the EAP that would require workers to visit the EAP before accessing ADM care. The inclusion of all these control variables assures that we have isolated the effect of the EAP intervention per se.

Although the results suggest that our enhanced EAP intervention was effective, we hope that future research can address some important limitations of this study. First, our intervention was implemented in a single EAP, thus limiting the generalizability of our results to other EAPs. Furthermore, this EAP had close ties with one of the primary intervention sites, Worksite 1. This close relationship certainly made it easier to develop and implement the EAP intervention.

A second limitation is that the two primary intervention worksites, which are Rockford EAP's largest clients, have predominately female employees but relatively few minority employees. We hope that this enhanced EAP interven-

tion (described in Karuntzos et al., 1998) can be implemented in other EAPs and worksites and its effectiveness analyzed using the methodology we have described here, to evaluate the generalizabilty of the results.

A third limitation of this study is that we cannot identify which of the components of our enhanced intervention are responsible for the changes in EAP utilization. The current study implemented many changes simultaneously; thus we are not able to identify the effectiveness of specific intervention components.

Despite these limitations, the results suggest that our intervention is a promising new approach toward better reaching troubled employees. Of course, the extent to which other EAPs can adopt the intervention depends not only on its effectiveness, but also on its costs. We can combine the results presented here with estimates of the cost of the enhanced EAP intervention to examine the cost-effectiveness of the intervention in increasing EAP utilization. French et al. (1998) conducted a cost analysis of standard EAP services at Rockford EAP and of the enhanced EAP intervention. They estimated that the annual incremental cost of implementing the enhanced EAP intervention at Rockford EAP was $140,161. Most of this cost—$128,692, or approximately 92%—arose from personnel costs, mainly accounted for by the expense of hiring two new EAP counselors to implement the enhanced intervention. Assuming instead that an EAP would attempt to train its existing staff to be more inclusive and sensitive to gender and minority issues, the annual cost of the enhanced EAP intervention is approximately $11,000.

We can combine this cost estimate with the estimated change in EAP cases, to estimate the incremental cost per change in EAP utilization. Applying the estimated percentage changes in total EAP cases attributable to the enhanced EAP intervention for Worksite 1 (32%), Worksite 2 (89%) and all other sites (51%) to the preintervention EAP caseloads yields an estimated change of 280 additional EAP cases per year. Assuming an enhanced EAP cost of $11,000 per year yields an estimated incremental cost per additional EAP case of $39.

The cost per standard EAP case is estimated to be $491.42 (French et al., 1998). Thus, if no additional staff is hired, the cost of implementing the enhanced EAP intervention increases the cost per EAP case by approximately 8%. By comparison, we estimate that, on average, total EAP cases increased by 53%, more than proportionate to the increase in costs. We caution, however, that this cost calculation assumes that no additional staff are hired for the intervention, although our effectiveness results are drawn from the results of specific implementation of the enhanced intervention that involved the hiring of specialized counselors. Future research will have to examine the costs and effectiveness of a model in which existing counselors are trained to address gender and minority issues.

In summary, it appears that for a relatively modest cost, the enhanced EAP intervention successfully increased EAP utilization by all employees, including utilization by women and minority employees. Thus, it appears that our intervention is a cost-effective means of increasing troubled employees' use of the EAP.

## References


Blum, T.C. and Roman, P. Employee assistance programs and human resources management. In: Rowland, K.M. and Ferris, G.R (Eds.) Research in Personnel and Human Resources Management, Supplement, Greenwich, CT: JAI Press, 1989, pp. 259-312.

Blum, T.C. and Roman, P.M. A description of clients using employee assistance programs. Alcohol Hlth Res. World **16:** 120-128, 1992.

Blum, T.C., Roman, P.M. and Harwood, E.M. Employed women with alcohol problems who seek help from employee assistance programs: Description and comparisons. In: Galanter, M. (Ed.) Recent Developments in Alcoholism, Vol. 12: Alcoholism and Women, New York: Plenum Press, 1995, pp. 125-156.

Dahlegren, L. and Willander, A. Are special treatment facilities for female alcoholics needed? A controlled 2-year follow-up study from a specialized female unit (EWA) versus a mixed male/female treatment facility. Alcsm Clin. Exp. Res. **13:** 499-504, 1989.

Delaney, W., Grube, J.W. and Ames, G.M. Predicting likelihood of seeking help through the employee assistance program among salaried and union hourly employees. Addiction **93:** 399-410, 1998.

French, M.T., Dunlap, L.J., Zarkin, G.A. and Karuntzos, G.T. The costs of an enhanced employee assistance program (EAP) intervention. Eval. Prog. Plan. **21:** 227-236, 1998.

French, M.T., Holtmann, A.G., McGeary, K.A. and Zarkin G.A. Substance use and workplace attendance. In: Grossman, M. and Hsieh, C.-R. (Eds.) Economic Analysis of Substance Use and Abuse: The Experience of Developed Countries and Lessons for Developing Countries, Cheltenham, United Kingdom: Edward Elgar Publishing Limited, in press.

Gray, M. and Lanier, D. Designing employee assistance programs to meet the needs of black clients. Alcsm Treat. Q. **2** (3-4): 85-96, 1985-86.

Hall, L., Vacc, N.A. and Kissling, G. Likelihood to use employee assistance programs: The effects of sociodemographic, social-psychological, and sociocultural, organizational, and community factors. J. Employ. Counsel. **28** (2): 63-73, 1991.

Harris, M.M. and Fennell, M.L. Perceptions of an employee assistance program and employees' willingness to participate. J. Appl. Behav. Sci. **24:** 423-438, 1988.

Hartwell, T.D., Steele, P., French, M.T., Potter, F.J., Rodman, N.F. and Zarkin, G.A. Aiding troubled employees: The prevalence, cost, and characteristics of employee assistance programs in the United States. Amer. J. Publ. Hlth **86:** 804-808, 1996.

Hausman, J., Hall, B.H. and Griliches, Z. Econometric models for count data with an application to the patents-R&D relationship. Econometrica **52:** 909-938, 1984.

Jackson, B.M. African-American women in the workplace: A personal perspective from African-American female EAPs. In: Lundy, M. and Younger, B. (Eds.) Women in the Workplace and Employee Assistance Programs: Perspectives, Innovations, and Techniques for Helping Professionals, New York: Haworth Press, 1994, pp. 11-36.

Karuntzos, G.T., Dunlap, L.J., Zarkin, G.A. and French, M.T. Designing an employee assistance program (EAP) intervention for women and minorities: Lessons from the Rockford EAP study. Employ. Assist. Q. **14:** 49-67, 1998.

LEVY, M.F., REICHMAN, W., HERRINGTON, S. AND YOUNG, D. Alcoholic women in industry: Some empirical data. Int. J. Group Tens. **10** (1-4): 120-129, 1980.

MANDEL, L.L. AND NORTH, S. Sex roles, sexuality and the recovering woman alcoholic: Program issues. J. Psychoact. Drugs **14** (1 Suppl. 2): 163-166, 1982.

REED, B.G. Women and alcohol, tobacco, and other drugs: The need to broaden the base within EAPS. In: LUNDY, M. AND YOUNGER, B. (Eds.) Women in the Workplace and Employee Assistance Programs: Perspectives, Innovations, and Techniques for Helping Professionals, New York: Hawthorn Press, 1994, pp. 179-192.

ROMAN, P.M. AND BLUM, T.C. Alcohol problem intervention in the workplace: Data on present status and future implications. Alcohol Hlth Res. World **13:** 375-380, 1989.

TURNBALL, J.E. Treatment issues for alcoholic women: Social casework. J. Contemp. Social Work **70:** 364-369, 1989.

WHITE, R.K., MCDUFF, D.R., SCHWARTZ, R.P., TIEGEL, S.A. AND JUDGE, C.P. New developments in employee assistance programs. Psychiat. Serv. **47:** 387-391, 1996.

WILSNACK, S.C. AND WILSNACK, R.W. Epidemiology of women's drinking. J. Subst. Abuse **3:** 133-157, 1991.

YOUNG, D.W., REICHMAN, W.R. AND LEVY, M.F. Differential referral of women and men to employee assistance programs: The role of supervisory attitudes. J. Stud. Alcohol **48:** 22-28, 1987.

YOUNGER, B. Violence against women in the workplace. In: LUNDY, M. AND YOUNGER, B. (Eds.) Women in the Workplace and Employee Assistance Programs: Perspectives, Innovations, and Techniques for Helping Professionals, New York: Haworth Press, 1994, pp. 113-134.

ZARKIN, G.A., BRAY, J.W. AND QI, J. The effect of employee assistance programs use on healthcare utilization. Hlth Serv. Res. **35** (1, pt 1): 77-100, 2000.