IJHP

INTERNATIONAL JOURNAL OF HEALTH & PRODUCTIVITY

SPECIAL EDITION · December 2018 · Volume 10, Number 2

A PUBLICATION OF THE INSTITUTE FOR HEALTH AND PRODUCTIVITY MANAGEMENT

EAP Works: Global Results from 24,363 Counseling Cases with Pre-Post Data on the Workplace Outcome Suite© (WOS)

Mark Attridge, PhD, MA; David Sharar, Ph.D;
Gregory DeLapp, MHS, CEAP; Barbara Veder, MSW, RSW

ABSTRACT

The Workplace Outcome Suite© (WOS) is a self-report instrument designed to evaluate the effectiveness of employee assistance program (EAP) counseling services from the perspective of the employee user of the service. More than 30 EAPs collected longitudinal data on all versions of the WOS from 2010 to 2018 and voluntarily submitted their raw data to Chestnut Global Partners for analysis. The 24,363 employees in this aggregated sample represent 26 different countries, but most of the cases were from the United States (79%) and China (15%). The typical EAP case in this data set was a female, age 38, and was a self-referral into an external vendor of EAP services seeking help for a mental health concern. Outcomes were collected at the start of counseling and again approximately three months later. Evidence of the psychometric validity and test-retest reliability for all five WOS measures was found in correlational tests. Other tests of the change in outcomes from before to after use of EAP counseling found large effects on work presenteeism and life satisfaction (ηp^2 = .24 and .19), a medium-size effect on work absenteeism (ηp^2 = .13), and small effects on both workplace distress and work engagement (ηp^2 = .05 and .04). Although most EAP cases had no absence from work either before counseling or at follow-up (58% and 78%, respectively), the average amount per case per month of missed work due to the personal concern was reduced from 7.4 hours before to 3.9 hours after use of the EAP. Weak findings on moderator tests determined EAP counseling was effective to a similar degree on WOS outcomes across contextual factors of client age, sex, country, referral type, clinical concerns, industry of the employer, and delivery models for providing employee assistance counseling (i.e., external vendors, internal staff programs and hybrid models). As an alternative to the fill-in-the-blank response format requiring a specific number of hours, a modified version of the work absenteeism single item is offered that has a 5-point scale with normative levels of absence hours obtained from the Pre EAP use global data that define each of the 1-5 rating options. More details and related findings are presented in the *Workplace Outcomes Suite 2018 Annual Report* from Chestnut Global Partners.

KEY WORDS:
Employee Assistance Program, Counseling, Outcomes, Absenteeism, Presenteeism, Engagement, Life Satisfaction, Workplace, Depression, Stress, Longitudinal

INTRODUCTION

Many working adults suffer from emotional issues, family and home life conflicts, mental health concerns, substance abuse problems, and other health disorders that can interfere with their health and work performance. Recent national epidemiologic survey data indicates nearly one in every five working adults in the United States meets clinical criteria for a behavioral health disorder.[1] StayWell examined data from their health risk appraisal (HRA) surveys and health care claims data from more than 21,000 employees from multiple employers in U.S. and concluded behavioral health issues are common among working adults: 21 percent were at moderate to high risk for depression; 14 percent were at high risk for stress; and 10 percent were at moderate to high risk for alcohol misuse.[2] Thus, there is a need for services to support the behavioral health risks of employees.[3]

One way to respond to at-risk and

distressed employees is to offer an employee assistance program (EAP). These are employer sponsored programs designed to help individuals resolve acute but modifiable behavioral health issues.[4] The EAP is often used for assistance with mild to moderate problems that cause acute stress, such as marital relationship issues, family concerns, work problems, and legal or financial concerns. Individuals in need of treatment of more serious mental health and substance abuse disorders (such as anxiety, depression, alcohol or drug misuse) are provided appropriate referrals to qualified providers and follow-up from the EAP. The general goal of EAPs is to have a positive effect on restoring the health and well-being of the employee, which in turn results in reduced long-term healthcare expenditures and a return to higher productivity. Indeed, what sets Employee Assistance (EA) services apart from other mental health services is its focus on providing brief treatment and practical resources that improve the work performance of employee clients.[5-9] Thus, EAPs are designed to support employees and restore their work performance.

Employee Assistance Programs have provided counseling and speciality support services to employers for many decades in North America and the field continues to expand globally.[10,11] In the 1980s and early 1990s, only a third of employers in the United States offered an EAP.[12] Today, 40+ years later, the vast majority of large and medium size employers in the U.S. now offer an EAP, but having access to employee assistance programs varies by the size of employer. In the public sector in the U.S., 100 percent of federal government employees, 86 percent of state government employees and 71 percent of local government employees have access to an EAP.[13] Also in 2016, according to the U.S. government's national survey of compensation, in the private sector, 85 percent of employers with 500 or more workers had an EAP, with lower prevalence rates as size of the company decreased: 68 percent at employers with 100 to 499 employees; 44 percent at employers with 51 to 99 employees; and only 27 percent of those in small businesses with less than 50 workers.[13] In another example from the private sector, WorldatWork, a human resources organization, surveyed 867 of its member companies in 2017 and found 97 percent of large companies and 88 percent of smaller size companies (under 500 employees) have an EAP.[14] In this same survey, EAP was offered at more employers than any of the 14 different employee health and wellness benefits in the survey. Thus, most employers in the U.S. now sponsor EAP as an employee benefit.

When EAP counseing is provided with adherence to basic quality standards the results are usually positive.[5] There is considerable evidence from reviews of studies conducted in North America[15-18] and in Europe[19-21] that brief counseling provided by EAPs typically reduces stress, improves symptoms of behavioral health problems and restores higher work functioning. This point was further documented in the landmark study by the National Beahvioral Consortium collecting data from 82 different vendors of EAP services with a combined customer base of more than 35,000 client companies and 164 million total covered lives in the United States, Canada, and 10 other countries.[22] Based on the averages of the follow-up surveys of many vendors and representing more than 100,000 individual EAP cases combined, the following facts were obtained about the level of user satisfaction and program impact as an industry: 94 percent of cases were satisfied with EAP services; 86 percent of cases had improved in the issue leading to use of the EAP; 73 percent of cases had improved work productivty (reduced presenteeism); and 64 percent of cases had improved work absenteeism. In general, then, EAPs usually are effective measured by both clinical and work performance outcomes.

The NBC study also found a considerable range of average outcomes obtained by the different EAP vendors for their clients with some EAPs much lower and some higher than the industry average. More importantly, from a comparative standpoint above industry-average results were derived from using many different tools to measure the outcomes. Less than half of EAP vendors in 2011 (42%) were using a standardized research-validated survey outcome tool while the majority of the EAPs instead had developed their own items and survey tools for assesing outcomes of the EAP services.[24] Such "home-grown" tools may be useful for that particular vendor,

but they also have unproven reliability and validity. Moreover, it makes it challenging for the purchasers of EAP services to fairly compare vendors on outcomes when vendors are not using the same metrics.[23]

A lack of common measures and industry benchmarks to assess and compare the effectiveness of counseling on workplace outcomes is a concern when producing such outcomes is highly valued by the purchasers of EAP services. For example, a 2018 survey conducted by the Employee Assistance Society of North America (EASNA) asked 155 senior EAP professionals and purchasers of EAPs which factors were important to the decision of selecting an EAP.[24] The study found that "evidence of user outcomes in improved workplace performance (less absenteeism, presenteeism, turnover)" was rated as either *high* or *very high* in importance as a factor in selecting a vendor by 62 percent of the sample. Thus, finding a way to determine which EAPs are the most effective and have superior outcomes is of keen interest to most purchasers.

THE WORKPLACE OUTCOME SUITE

In this context, the Workplace Outcome Suite© (WOS) was developed in 2010 by the Division of Commercial Science at Chestnut Global Partners (CGP) to provide a scientific, objective measure of these outcomes.[25] The WOS is a self-report instrument designed to evaluate the effectiveness of employee assistance program (EAP) counseling services from the perspective of the employee user of the service. It is completed at two points in time, first at the start of counseling and then again at a longitudinal follow-up several months after the counseling is completed, with a recommended follow-up period of 90 days. The instrument is a measure of change in four key aspects of workplace functioning: a*bsenteeism, presenteeism, work engagement,* and *workplace distress.* As a reflection of general effectiveness on personal issues, the WOS also measures overall level of *life satisfaction* for users of EAP services. These items are answered on a 1-5 rating Likert-type rating scale as follows: 1 = *strongly disagree*; 2 = *agree*; 3 = *neutral*; 4 = *agree*; 5 = *strongly agree.* However, the response to the Absenteeism item is a fill in the blank format with a specific number of hours of absence requested.

Versions of the WOS

The original 25-item WOS has five item entries for each of these constructs. On the 25-item version all scales (except for Absenteeism) have slightly different wording of essentially the same question – a classical psychometric theory called "effect-indicator." In 2012, CGP developed the 5-item version at the request of WOS users to reduce the amount of time it takes for clients to complete the tool and in the process increasing response rates.[26] This was done by selecting the single "best" item from the Presenteeism, Work Engagement, Life Satisfaction, and Work Distress scales of the 25-item version. A different process was done for Absenteeism in which a new single item was created featuring the definitions of absence specified in the first three items of the full 5-item Absenteeism scale. These three items had defined absence as missing work, being late to work or leaving work early. There also is a 9-item version that includes all five of the original absenteeism questions combined with the four single-items from the 5-item brief version. The three WOS measures with full instructions and response options are provided in the Appendix. Today most EAPs have migrated to using the 5-item brief version (see items below).[EN1]

- **Absenteeism** item: *"For the period of the past 30 days, please total the number of hours your personal concern caused you to miss work. Include complete eight-hour days and partial days when you came in late or left early. _____"*
- **Presenteeism** item: *"My personal problems kept me from concentrating on my work."*
- **Workplace Distress** item: *"I dread going into work"*
- **Work Engagement** item: *"I am often eager to get to the worksite to start the day"*
- **Life Satisfaction** item: *"So far, my life seems to be going very well"*

WOS Endorsed as EAP Industry Standard

The WOS is currently the only publicly available instrument psychometrically validated and tested for use in EAP settings. It is available to use at no cost with the signing of a license agreement (go the EAPA website: bit.ly/WOS-License-Agreement).

The WOS presents a *single* tool that can be used across the EAP spectrum for demonstrating effectiveness, and in turn

furthering the field as opposed to a patchwork of measurement tools that have not advanced the EA field. In 2017, the largest industry group – the Employee Assistance Professionals Association (EAPA) – with more than 5,000 members worldwide, endorsed the WOS as an EAP Best Practice for measuring and evaluating work-related outcomes of services provided by EAPs. With access to thousands of EAP professionals across the globe and a deep commitment to the highest standards of EA practice, EAPA believes the WOS, when properly implemented, can bring clarification to the field's value proposition and need for greater evidence of program effectiveness. This collaboration has been successful as evidenced by having more than 600 different EAPs signing license agreements to use the WOS. This interest demonstrates that greater numbers of EAPs are finding the WOS to be highly effective in demonstrating improvement with their EAP counseling clients.

Studies of EAP Outcomes Using the WOS

Since its introduction in 2010, numerous applied studies of EAPs have featured data from the WOS. Several very large organizations in the private sector have used the WOS to assess the effectiveness of their EA programs:

1) Global manufacturing company, Caterpillar has used the WOS to examine EAP outcomes at the overall level, for certain worksites, and to compare EAP counseling provided on-site at the workplace versus counseling provided by off-site locations;[27,28,29]
2) ConocoPhillips, in the oil and gas industry explored the workplace impact of EAP using the WOS;[30]
3) DuPont used the WOS in a year-long demonstration project to document sucessful expansion of EA services to its worksites located in many different countries around the globe;[31,32]
4) Public sector, Federal Occupational Health – the EAP for the federal government that serves more than 1.1 million employees – has recently evaluated the program with WOS data,[33,EN2]
5) The internal staff model EAP at Partners HealthCare System in Boston has included the WOS as part of its ongoing quality improvement initiatives;[34]
6) The WOS also has been used by the Life Solutions is the internal staff model EAP for the University of Pittsburgh Medical Center and also a provider of services to local employers.[35]

There are examples of EAPs operating in countries outside the U.S. using the WOS to measure the impact of their services, including:

1) Benestar EAP in New Zealand;[35]
2) Chestnut Global Partners EAP in Brazil;[36]
3) Chestnut Global Partners EAP in China;[37-39]
4) Chestnut Global Partners EAP in Russia;[40]
5) Hellas EAP in Greece.[41]

The 2018 WOS Annual Report profiles 13 different EAP vendors, internal EA programs and large employers with hybrid EA programs.[38] Each of the profiles shares information on the operational practices for collecting WOS data and case stories of the business impact of having credible workplace outcome data available. In addition to most of the examples noted above, several other EAP vendors in the U.S. market are profiled in the 2018:

1) Cascade Centers;
2) Concern EAP;
3) Empathia EAP;
4) KGA EAP as well as Homewood Health in Canada which is using the WOS to assess outcomes in a depression care specialty program.

All of these applied studies of EAP noted above with WOS data featured a single-group longitudinal research design that included only the users of EA services and no comparison group of non-users of the EAP. These projects were not supported by external research grant funding. In contrast, a rare quasi-experimental study was conducted for a statewide internal EAP program serving government employees in the state of Colorado.[42] This study was funded by a large grant from the Employee Assistance Research Foundation. The study compared experience of users of EAP counseling (n = 156) against a group of employees from the same organization (n = 188) who did not use the EAP but who were matched on level of personal distress, social

support, and demographic characteristics to the EAP cases. The 5-item brief version of the WOS was assessed at the start of the case for EAP users and again as a follow-up that ranged between 2 and 12 months later. The EAP group averaged 4 months at follow-up and the comparison group 8 months at follow-up.

As expected, the two groups did not differ at baseline on any of the WOS measures. Significant differences were found for the extent of change over time between the two groups. Results showed EAP users had reduced their level of presenteeism on the WOS by 21 percent, which was significantly more than the 11 percent reduction found in the comparison group who had not been treated by the EAP. The EAP user group also had a decrease in absenteeism (from 15.0 hours at baseline to 10.7 hours at follow-up), whereas the comparison group *increased* in absenteeism (from 13.0 hours at baseline to 16.9 hours at follow-up). For context, the typical employee at this public sector organization had about 9 hours of absence per month, which is less than both groups of distressed employees at baseline.

Further analysis of the same groups determined that the EAP cases had significantly more improvement over time in mental health outcomes (i.e., symptoms of depression and anxiety) than the matched control employees and these improvements in the mental health clinical outcomes were positively linked to the improvements in both work absenteeism and presenteeism outcomes.[43] Thus, those employees who improved most in their mental health after the use of the EAP counseling also improved the most in their absenteeism hours and presenteeism levels at work. A third study of this project examined the actual timesheets of recorded absenteeism data, which verified the same relatively better outcome of missed time away from work for the EAP group compared to the matched non-EAP user group.[44] Although based on a small sample size, this study from Colorado provides compelling evidence of the superior impact that brief counseling from EAPs can have on workplace performance outcomes over what is normally experienced by employees in distress but do not get assistance from the employee assistance program.

Overview of this Study

The goal was to use this very large aggregated sample to answer the following questions about the impact of EAP counseling and the appropriateness and viability of the Workplace Outcome Suite measurement tools for EAPs:

- What is the psychometric validity and reliability of the five WOS measures?
- What is the extent of improvement in WOS outcomes after use of EAP counseling? And naming the five WOS outcome constructs, which areas have the largest improvement?
- Is the level of improvement in WOS outcomes different for certain factors of the client (sex, age, global location), the clinical experience (referral and clinical problem types), and the employer context (industry and EAP delivery model)?
- Which outcomes on the five constructs featured in the WOS are most relevant to EAP counseling?

METHDOLOGY

Study Design and Sample

Longitudinal Repeated Measures Design. Employee users of the EAP completed the WOS *before* introducing the EAP counseling intervention and then completed the WOS again at several months *after* the intervention. A 90-day follow-up time frame was recommended by CGP for administering the "post" measure rather than doing it immediately after the last EAP visit because it cannot determine if such improvement persists after counseling has ended. The use of a three-month follow-up period was intended to confirm that improvement on WOS constructs experienced at the end of counseling were then maintained over a longer time period. This data measurement approach with the WOS likely represents a more conservative set of results than if outcomes were assessed at the end of treatment.

For example, in a demonstration study conducted in the state of Vermont, U.S., of behavioral health risk screening and enhanced counseling from the EAP staff, users of counseling had a 40 percent reduction in the amount of lost productive time at work in the past month (a combined measure of

absenteeism hours and hours derived from work productivity levels on 0-10 rating scale) from the start of the case to the end of the case (which on average was after four sessions of counseling).[45] The follow-up data (three and six months after the end of the case) showed a 29 percent average reduction from the level at the start of case. Thus, the degree of workplace outcome improvement at the follow-up slightly was less than when assessed at the end of the case, even though both post time period results were a significant change from the level of work performance deficit reported at the start of treatment.

No Comparison Group. Having only the intervention group experiencing EAP counseling with no comparison group of employees equally distressed and not receiving EAP counseling, is known as a "Correlational" or "Before/After" single-group study. This kind of study design can identify *if* employees improved at work after EAP counseling, but it cannot prove EAP counseling was the most important causal factor in this improvement. Although less rigorous than a quasi-experimental or true experimental research study designs with random assignment of participants to treatment and control groups, the single group design is typical of almost all studies of the users of voluntary employee health and wellbeing benefits provided in real-life settings as part of normal service delivery.[46-48]

Data Sources. As of April 2018, more than 30 different EA providers, large employers or EAP industry groups had kindly shared their data to Chestnut Global Partners. Most of these EAPs were from the United States but more than 25 other countries are represented among the cases. Most of these sources are external vendors of EAP services, EAPs the serve hospital systems (and often other employers in the same local community), some internal programs from large corporations and several public sector and government organizations. Almost all of these cases were users of the counseling services from EA providers rather than users of other kinds of non-counselor services provided by the EAP (such as work/life resources or support for financial/legal issues).

Client Anonymity. Although the unique identity of each user of the EAP was tracked from pre to post use of the EAP in order to collect and match up the post use outcome data, clients were guaranteed anonymity and assured their employers would never be allowed to view their individual responses. The aggregated dataset provided for the analysis had only identification numbers and no other client specific personal information.

Sample Size. The sample size used for analysis was **24,363 cases**. This count excludes more than 1,700 other cases that did not have enough data on the WOS at both the Pre and Post time periods or were removed from the final sample for other data integrity issues.[EN3] This criteria included cases that were outliers for work absenteeism, which conceptually was defined if the person had reported more than 160 hours of missed work in the past month (which exceeds the standard full-time work schedule of 40 hours per week for four weeks). These extremes for absence hours could be due to data entry mistakes, people with an abnormally high number of days for their regular employment schedule, or maybe were on a leave from work altogether. Although rare in the total sample (at less than 0.5%), all cases with outlier status for hours of work absence were removed from the dataset in order to have consistent data on the other four WOS scales.

Measurement of Contextual Factors

In addition to the WOS, seven contextual factors of EAP use were also examined. These included the user characteristics of age, sex, and the country where the client lived, the clinical factors of referral source into the EAP and the type of presenting problem or concern, and the contextual factors created by the business sponsor of the EAP related to the industry of the employer and delivery model for the EAP service. All of these factors were taken from measures at the Pre-test period or were added to the dataset later specifically for this analysis by the research team. The specific coding of each these factors was standardized across the various specific formats of the raw data provided by the different EAPs. See **Table 1** for a summary of the counts of cases with data available for each contextual factor. A profile of each factor is also x presented.

TABLE 1: DESCRIPTION OF EAP USER SAMPLE ON VARIOUS CONTEXT FACTORS		
Factor	**Count (*n*)**	**Percentage Valid Cases with Factor**
Client Context		
Sex of EAP User		*n* = 9,219
Male	2,988	32%
Female	6,231	68%
Age of EAP User	M = 38 years	*n* = 8,810
< 30years	2,481	28%
30 - 39 years	3,094	35%
40 - 40 years	1,689	19%
50+ years	1,546	18%
Country of EAP User		*n* = 24,363
United States	19,234	79%
China	3,615	15%
Other Global	1,514	6%
Clinical Context		
Referral Source into EAP		*n* = 5,751
Self	4,950	86%
Family/Other	407	7%
Work Supervisor	274	5%
Work Mandatory	120	2%
Presenting Concern		*n* = 7,428
Mental Health and Stress	3,004	40%
Marital and Family	2,164	29%
Occupational and Work Stress	1,305	18%
Alcohol and Drug	276	4%
Other	679	9%
Employer Context		
Industry of Employer		*n* = 10,461
Healthcare	4,165	40%
Manufacturing	2,589	25%
Government	2,453	23%
Technology	1,254	12%
EAP Delivery Model		*n* = 24,363
External Vendor	15,086	62%
Employer Hybrid with External Vendor	4,760	20%
Employer with Internal EAP Staff	4,517	18%

Sex of EAP Client. For most of the total sample, sex of the client was not reported to CGP (62% missing data). Sex of the EAP client was available for 9,219 cases. Of this group, about twice as many women as men (68% vs 32%) were used of the EAP. Thus, the typical EAP user was a female.

Age of EAP Client. For most of the total sample, age was not provided to CGP (64% missing data), but the age of the EAP client was available for 8,810 cases. This was categorized into four levels: under ager 30; age 30 to 39; age 40 to 49; and age 50 or higher. The profile for age indicates 28 percent of cases were in their 20s or younger, 35 percent in the 30s, 19 percent in the 40s and 18 percent in their 50s or older. Overall, this data indicates users of EAP counseling

are found in all ages, but more so among people were under the age of 40. The typical EAP user in the study was 38 years old.

Country of EAP Client. EAP users were categorized by the country where they lived and received counseling services: *United States* (79% of all cases), followed by *China* (15% – all Chestnut Global Partners EAP China) and a mix of many *Other Global Countries* (6%). The "other global" category included EAP users from New Zealand (305), Brazil (195), Greece (111), Indonesia (17), Thailand (16), Mexico (15), France (13), Russia (13), India (12), Taiwan (11) and 14 other countries with less than ten cases each. The countries with few cases included: Argentina (4), Australia (3), Belgium (7), Chile (3), Columbia (4), Germany (4), Hungary (3), Netherlands (3), South Africa (3), Spain (6), Switzerland (5), Turkey (9), United Kingdom (4), Venezuela (1) and Vietnam (1).

Referral Source Into the EAP. For most of the total sample, type of referral into the EAP of was not reported to CGP (76% missing data), but 5,751 cases were able to be categorized based on referral source. At 86 percent of all cases, a *self-referral* was by far the most common type of referral into the EAP. In contrast, being referred to the EAP by a family member of the employee or other (7%) or by one's supervisor (5%) were much less common. The least common source of referral was a *mandatory* referral from an organization requiring employees to use the EAP as condition for further employment (2%; often by Human Resources for a safety, conduct or substance abuse violation of company policy). This data shows that most employee users of EAPs chose to seek counseling on their own and were not referred by someone else.

Presenting Concern. For most of the total sample, the reason given by the employee prompting use of the EAP was not provided to CGP (70% missing data). However, 7,428 cases had this information. From most to least commonly represented in the sample, the various kinds of presenting problems included: marital relationship (22.7%), work stress (11.4%), depression (10.9%), anxiety (10.6%), behavior and conduct issues (8.5%), occupational or work problems (6.2%), family issues (5.7%), personal stress (5.6%), grief and bereavement (4.7%), substance alcohol abuse (3.6%), violence or abuse (2.7%), medical health problems (2.2%), personal/family financial issues (1.6%), personal/family legal issues (1.3%) and eldercare (< 1%), child care (<1%), alcohol/drug codependency (< 1%), and "Other" at 1.5%. To simplify this data for analysis as a potential moderator factor of outcomes, these 19 categories were recoded into the following five more general types of problems: *Mental Health* = 40 percent (including anxiety, depression, grief, behavioral/conduct problems, personal stress); *Marital & Family Relationships* = 29 percent; *Occupational & Work Stress* = 18 percent; *Alcohol & Drug Use* = 4 percent; *Other* 9 percent.

Industry of the Company Sponsoring the EAP. Nearly half (56%) of the total cases were from EAP vendors having too many different industries among their many customers to classify one dominant industry. However, the remaining 10,461 cases EAPs were categorized into four industries: *Healthcare* (40%), *Manufacturing* (25%), *Government* (23%), and *Technology* (12%). These industries included cases from all three kinds of EAP delivery models.

Delivery Model for EAP. Based on our knowledge of the EAP providers in the study, the delivery model for the EA services was categorized for all cases.[49] The most common type was the *External Model* for a vendor with multiple employer customers (62% of all cases from 15 different EAP vendors). An *Internal Program* with dedicated EAP staff working as the employees of one organization was represented by 10 different employers and accounted for 14 percent of the total cases. One EAP served as a special hybrid type of internal program for a large academic medical center that also provided EAP services as a vendor to other smaller size employers locally (this program accounted for 5% of cases). However, this last EAP was included in the Internal Model type, which brings this type of delivery model to represent 19 percent of the total cases. Also featured was the *Employer Hybrid Model*, with a single large employer that has an external EAP vendor(s) but also has some internal full-time EAP staff who direct the activities of the vendor, provide counseling to employees, consultations to managers, and a wide range of other organization

level support services (19% of cases from 9 different employers).

Measurement of the WOS

WOS Data Collection. Most EAPs conducted the pre-test measure of the WOS telephonically during the client intake process, although other EAPs had the client complete intake paperwork themselves in a waiting area before meeting with an EA professional. The post-test WOS measure typically was collected at roughly 90 days after the pre-test, either by phone or e-mail or a weblink to online survey data collection tool. Most EAP providers adopted a protocol of using up to three follow-up attempts to collect the post-test data, either by e-mail or phone before considering the client as non-responsive. The response rate among the many different EAP providers who contributed raw data to this report was unknown – although it was estimated that approximately 30 percent of clients contacted at follow-up completed the post-test WOS measure.

WOS Measures. All three versions of the WOS are represented in the EAP users included in this sample. The choice of which version of the WOS was used to collect the data was made independently by each EAP. The original 25-item WOS was used by five EAPs and had 629 valid cases (3% of the total cases). The 9-item version of the WOS was used by two EAPs and had 5,847 valid cases (24%). The brief 5-item version of the WOS was used by 30 EAPs and had 17,887 valid cases (73%).

Preparation of WOS Data. A small number of cases (< 1%) had missing data for one or more of the five WOS outcomes at the Pre-test and/or Post-test periods. These few cases had some of their WOS scores estimated in order to preserve a full dataset and not conduct tests with minor variations in the sample sizes depending on very small amounts of missing data on the focal measures. The replacement scores for missing WOS data were estimated in two ways: 1) for subscales of the full 25-item WOS; subscale items were estimated based on matching the individual set of five ratings to scores corresponding to the actual total score for the 5-item scale available from that same specific case (i.e., this option was available because some EAPs shared data with CGP on the total scale score but did not share the individual item scores that added up to the total score); or 2) for single items of the WOS-5 brief scale, scores were estimated based on average rating for the full sample for that same item.

Work Absenteeism Measurement Issues. Because most of the EAP industry uses the brief scale version, this article focuses on data from those single items. Other results involving all of the data from the original 25-item scale are presented in the WOS 2018 Annual Report.[38]

The same single items from the lager five-item measures matching the brief item version were used from the 3 percent sample with data from the original 25-item version. Thus, all cases had the single item WOS measure even if they had originally completed the longer versions of the WOS. This process could not be done, however, for absenteeism, as the full scale and the brief scale have different instructions and questions. Therefore, a new strategy was devised to use only the data from the first three items of the full five-item version of absenteeism. This was done because these three items conceptually match the instructions for the single item on the brief WOS-5 for absenteeism that asks the person to consider absence consisting of missing work altogether, arriving late or taking off early. In contrast, the other two items on the original absenteeism scale of types of absence when being taken away from the workplace and being on phone, email or Internet while at work were excluded, as these are more aligned with the concept of work presenteeism than of missing work.

Exploratory analyses conducted on the approximately one-fourth of the sample with data on the original five item absenteeism measure (n = 6,295 EAP users) revealed an interesting pattern of results for the amount of absence at baseline before starting EAP counseling. The first item on hours of absence from the EAP concern causing the employee to miss work altogether had the highest amount of absence of the five items on the original scale at 7.39 hours, which accounted for 69 percent of the total hours of absence on the scale. The next item: arriving late for work had an average of 0.50 hours. The

third item: taking off early from work had an average of 0.85 hours. The fourth item: being pulled away from normal work location had an average of 0.72 hours. And the last item: being on the phone, e-mail or Internet while at work because of the EAP concern had an average of 1.19 hours. On every one of these five items, the vast majority of cases reported zero hours absent (i.e., 73%, 90%, 85%, 87%, and 80%, respectively). Thus, absenteeism was affecting only a small subgroup of these distressed employees.

When only the first three items were summed together, the average number of hours of absence in the past month at baseline changed from 10.77 hours (*SD* = 22.73) with all five items to 8.74 hours (*SD* = 20.84) when based on only three of the same five items. For comparison, the single-item for absenteeism on the WOS-5 brief scale at baseline had an average number of hours of absence in the past month of 6.79 hours (*SD* = 16.70), based on a different set of 17,579 EAP cases.

In summary, in the month before use of the EAP, the mean number of work absence hours from the adapted full measure (based on the first three items) was about halfway between the other two previously developed measures. Although the person was asked about the same three measures of absence in both instances – missing work, being late to work and leaving early from work – the resulting average number of hours was slightly higher when asking three separate questions than when asking a single question. This finding suggests the WOS-5 brief version slightly underestimates the amount of work absence experienced by the average EAP case by about 2 hours per month at the start of counseling. The additional cognitive effort required to think about three separate questions allows the opportunity for better recall of what happened during the past month and that is why the total absence amount is a bit higher than when the single question is used to collect absence data.

To create a single score of absenteeism hours for the entire sample including data from all three versions of the WOS, the subsample with data from the 25-item or 9-item versions of the WOS was re-coded to use only the responses to the first three items on the full absenteeism scale corresponding to the kinds of absence specified on the instructions for the single item on WOS-5 brief scale. This was done for absenteeism measures at both Pre and Post time periods. The rest of the sample retained their scores on the WOS-5 brief item for absenteeism. The value of having only one absenteeism variable for every case in the sample allowed for the opportunity to include absenteeism outcome in multivariate tests involving the full set of all five WOS constructs with all of the study participants in one sample rather than the more complicated process of conducting multiple tests within the different subsamples according to the two absenteeism measures.

To explore the utility of the new total sample absenteeism measure, results of tests of change over time from before to after use of the EAP with each these different measures of work absenteeism are shown in **Table 2**. All of the measures showed approximately the same relative reduction in the hours of absenteeism of 46 percent to 49 percent. Yet, the net amounts of hours reduced after EAP use were higher for the absenteeism measures involving more items, with 5.2 fewer hours for the full scale, 4.1 hours for the new 3-item adapted version and 3.3 hours for the single item on the WOS-5 version. When the new 3-item and single-item measures were considered together in the total sample (with each measure representing a different part of the total sample), the result was a 48 percent relative reduction in absenteeism and a net change of 3.5 fewer hours of absence in the past month. All of these change over time tests were highly significant and yet represented small size effects.

Recoding of Absenteeism Into New Version of Measure with 1-5 Range. On the WOS, work absenteeism is measured in hours (range from 0 to 160) and usually has a highly skewed distribution of scores as most of the case report either zero absence (58% of cases at Pre EAP) or a very small number of hours. This wide range and skewed distribution of scores is very different from the other four WOS dimensions, which are all measured with agree-disagree ratings on a much smaller response option range of only 1-5. These results for the other WOS measures routinely show a more normal bell-shaped distribution of scores across

Table 2: Reduction in Hours of Work Absenteeism from Pre to Post Use of EAP

WOS Measure of hours of work absenteeism in past 30 days	Sample Size N	Pre M (SD)	Post M (SD)	Percentage Change	Test of Change *F*	Effect Size η_p^2
Sub-Samples						
Work Absenteeism Original 5-item full scale	6,576	10.72 (22.83) 0 = 51%	5.52 (21.09) 0 = 77%	5.20 49% less	235***	.04 small
Work Absenteeism Only use first 3 items of the 5-item full scale	6,356	8.93 (20.97) 0 = 61%	4.82 (20.49) 0 = 83%	4.11 46% less	188***	.03 small
Work Absenteeism Single-item brief measure	17,877	6.80 (16.64) 0 = 59%	3.46 (14.54) 0 = 78%	3.34 49% less	520***	.03 small
Full Sample — Actual Data						
Mix of single item brief and first 3 items of original full scale	24,363	7.36 (17.90) 0 = 58%	3.86 (16.37) 0 = 78%	3.50[a] 48% less	696***	.03 small
Full Sample — Estimated Data						
Work Absenteeism Estimated hours from each 1 - 5 category default number of average hours	24,363	7.36 (15.60) 0 = 58%	3.25 (10.60) 0 = 78%	4.11[a] 56% less	1,684***	.07 medium

*** = $p < .001$

[a] Test of mean difference of mean scores for actual and estimated hours at Post EAP use in full sample was significant ($p < .001$) but the effect size ($\eta_p^2 = .004$) indicated the difference is very small and inconsequential.

the five rating options. From a statistical perspective, hours of absenteeism and ratings of agreement on the other four measures is like comparing apples and oranges. Thus, to more fairly conduct statistical tests using all of the WOS measures, it was important to standardize the range of the rating scales across the five measures. In order to match the 1-5 Likert-type rating scale used for the other four WOS measures and more fairly compare the five outcomes to each other, the absenteeism measure was adapted from the specific hours of work missed (range of 0-160) to a metric with only 5 categories (each with a different range of hours of absence).

This was accomplished in three steps:

Step 1: The distribution of every level of absenteeism hours at the Pre EAP use period (based on the full sample measure described in the above section that used either the WOS-5 single item score or the score from three-item adapted version of the original full scale) were tabulated and sorted from zero to the maximum.

Step 2: The distribution of absence hours then was examined carefully to set the cutoff points needed to break the distribution into five segments to correspond to a 1-5 score range. The first segment was no absence (zero hours) and was the majority of cases in both subsamples. The rest of the distribution that had at least some amount of absence was divided into fourths to evenly balance the remaining cases in the sample into four segments. The specific cut-off points for hours of missed work defining each category are shown in **Table 3**.

Step 3: Each case in the full sample was assigned a new score of 1 to 5 for absenteeism at Pre use of the EAP. The same cutoff levels were used to assign a new score of 1 to 5 for absenteeism at Post use of the EAP.

To support potential future use of this new version on how to measure absenteeism, Table 3 includes modified instructions (adapted from the WOS-5 absenteeism single item) and the new definitions of the range of work absence hours for each rating option. Included also are the default number of hours of absence to assign to cases for each of the new 1-5 ratings (reference bottom of

Table 3: New Version of WOS Work Absenteeism Measure with 1-5 Rating Scale

INSTRUCTIONS:
For the period of the past 30 days, please select the choice below that best represents the number of hours your personal concern caused you to miss work. Include complete eight-hour days and partial days when you came in late or left early.

1	2	3	4	5
No Absence (0 hours)	Less than half a day (< 4 hours)	Less than a full day (< 8 hours)	From one to three days (8 to 24 hours)	More than three days (25 to 160 hours)
Default hours for each rating to use in scoring of change over time in average hours of absenteeism per case for ROI Analyses:				
0 hours	1.58 hours	6.32 hours	15.08 hours	55.07 hours

Note: This is instead of response format of "fill-in-the blank" with estimated total hours used on earlier versions of the WOS.

Table 2). The specific default amounts of absence were derived from the calculating the average amount of reported absence hours in the total sample separately within each of the five segments (i.e., the mean for the subsample representing each absenteeism level rating of 2, 3, 4 and 5). Additionally, the full 24,343 person sample was used to test the validity of estimating the sample average using the default amounts. This process resulted in an estimated mean score at the Post use of EAP of 3.25 which is close to the actual mean score of 3.50 at the Post based on the source raw data of reported specific amounts of absence ranging from 0 to 160 hours (Reference Full Sample Data – Table 2). Compared directly, these two scores at the Post are significantly different, but the effect size of this difference is very small and not of consequence ($\eta p^2 = .004$). Note that because the specific default amounts of absence were derived from the raw absence hours at Pre EAP use within each of the five segments, the mean hours of absence at Pre EAP use were identical for both the raw data and for the new estimated data (both at 7.36 hours).

All of this effort was successful to develop a revised measure of work absenteeism that met the project criteria of:

1) a score with the same 1 to 5 range of the other WOS measures;
2) a score that was available for all of the cases in the full sample (which included source data pooled into one master dataset from the 25-item, 9-item and 5-item versions of the WOS).

Data Analyses

All analysis was conducted using IBM SPSS version 24. The test of improvement over time (Pre to Post) was conducted using a multivariate analysis of variance repeated measures procedure with all five WOS measures included in the same test. A descriptive measure of the percent improvement on each outcome over time was calculated by subtracting the Post EAP mean score from the Pre EAP mean score and then dividing it by the Pre EAP mean score. Other tests of the impact of moderator factors used a general linear model ANOVA approach with repeated measures of time and the other potential moderator factor of interest as an interaction effect with time.

With such an extremely large sample size, the power to detect a particular finding as being statistically significant is very high in this study (power of .99 out of 1.00 maximum to detect a small size effect at $p = .05$ chance level).[50] Thus, a finding too small to have much practical value can nonetheless be declared "significant" from a statistical perspective (i.e., if the test result is $p < .05$). Estimates of statistical effect size offer a way to fairer way to compare the results of the five WOS scales. The size of the *partial eta squared* effect (ηp^2) obtained in SPSS from the GLM repeated measures test results also was examined. The ηp^2 estimate can range

from 0 to more than 1.00 but it is usually a number closer to the zero end of the scale. These effect sizes can be interpreted as follows: small size effect is between .01 to .05; a medium size effect is between .06 to .13; and a large size effect is .14 or greater.[51,52] Effect sizes of less than .01 are considered very small and thus of little practical meaning.

RESULTS

Part 1 – WOS Measurment Psychometrics

The first research question asked: What is the psychometric validity and reliability of the WOS measures? This was answered by conducting a series of correlational tests for WOS measures within only the Pre period, within only the Post period and also over time combining the Pre and the Post period data in the same test.

WOS Validity. The relationships between the five scale dimensions were re-examined in this very large dataset to confirm the pattern of moderately strong associations between the five WOS scales and to rule out redundancy with each other. The findings (see **Table 4**) show moderate size intercorrelations between all five of the WOS measures (all $p < .001$). For the Pre EAP use period, the intercorrelations ranged from a low of $r = -.11$ to a high of $r = -.50$. Similarly, the correlations between the five WOS measures in Post EAP use period ranged from a low of r = -.16 to a high of $r = -.47$.

These findings confirm the shared meaning or overlap of different aspects of the work experience for EAP counseling cases. It also shows that the more general outcome construct life satisfaction is linked somewhat to the four kinds of work outcomes. This pattern is evidence of the convergent validity of these constructs as measured by the questions on the WOS. Also important for establishing the discriminant from of measurement validity is the finding that the shared variance among the WOS measures was not too high (the highest correlation of $r = .50$ when squared reflects 25% shared variance). These findings indicate that although the WOS measures do have some overlap, each measure has its own meaning that is distinct from the others and thus tells a different part of the larger workplace outcomes story.

Other tests (not shown) also revealed only very small size correlations between the client demographic factors of age and sex with the five WOS measures at Pre EAP use ($r = .11$ or less). These findings also offer evidence of the discriminant validity of the WOS, as there was no expectation that men and women or clients of different ages should differ at baseline on levels of workplace outcomes.

WOS Reliability. Measurement reliability is demonstrated when the same measure is positively correlated with itself over time. Having a measure with high temporal reliability indicates consistency or stability over time in the level of responses such that each person in the sample is roughly in the

Table 4: Correlations Between WOS-5 Brief Scale Outcomes at Pre and at Post and Paired Correlation Over Time for Same Measures

		WA	WP	WD	WE	LS
WOS Measure		**Post Use of EAP at 3 months Follow-up**				
Work Absenteeism (WA)	Pre Use of EAP at start of Case	.34	.30	.23	-.16	-.21
Work Presenteeism (WP)		.25	.36	.36	-.23	-.37
Workplace Distress (WD)		.19	.27	.49	-.47	-.31
Work Engagement (WE)		-.11	-.19	-.50	.44	.25
Life Satisfaction (LS)		-.16	-.30	-.22	.21	.36

Note: Total N = 24,363. All 1-5 range of scores. Lower scores indicate better outcomes for work absenteeism, work presenteeism and workplace distress; higher scores indicate better outcome for work engagement and life satisfaction. Correlations below diagonal are from Pre EAP Use; Correlations above diagonal are from Post EAP Use; Correlations on the diagonal are for paired Pre with Post for the same measure. All of the correlations in table are significant at $p < .001$.

same place in the overall distribution scores for the entire sample when ranked from low to high at both of the two time points. In the present study, all five of the WOS measures had significant but moderate size correlations over time from Pre to Post use of the EAP (see diagonal of matrix in Table 1 with r_{paired} = .34 to .49; all $p < .001$).

Part 2 – Improvement Over Time in WOS Outcomes

The second research question asked: What is the extent of improvement in WOS outcomes after EAP use? And which WOS outcome constructs have the largest improvement? These are answered using a multivariate general linear model (GLM) procedure with Time as repeated measures approach with two time points (Pre vs. Post use of EAP counseling) and the 1-5 rating formats for the single items that comprise the WOS-5 (but taken from all three versions of the WOS) and the new adapted 1-5 category rating version of work absenteeism for the full sample that was created for this analysis. The results are presented in **Table 5** and represent the primary findings of the study.

The results found the overall multi-variate effect for Time was highly significant and was a large size effect (η_p^2 = .34). This indicated that as a set, the five WOS measures had a substantial degree of change over time. Although each of the WOS measures individually had an improvement over time that was significant beyond chance levels, the measures differed substantially from each other in the magnitude of the relative size of the change from Pre to Post EAP counseling: work absenteeism (27%) and work presenteeism (26%) had the largest degree of improvement, followed closely by life satisfaction (22%) with workplace distress (14%) and work engagement (8%) both much less relative change. However, the differences between the WOS measures in their statistical effect sizes is the more important finding to discuss. Both work presenteeism and life satisfaction had large effect sizes (η_p^2 = .24 and .19), followed by a medium size effect for work absenteeism (η_p^2 = .13), and then small size effects for both workplace distress and work engagement (η_p^2 = .05 and .04, respectively).

Table 5: Tests of Improvement from Pre to Post Use of EAP in WOS Outcomes

	Pre M (SD)	Post M (SD)	Percentage Change	Effect for Change Over Time	
WOS Measure				Repeated Measures ANOVA F-test	Effect Size η_p^2
All Five Measures as Multivariate Effect	N/A	N/A	N/A	2,543***	.34 large
Work Absenteeism 1 - 5 categories	2.04 (1.40)	1.49 (1.06)	27%	3,543***	.13 medium
Work Presenteeism	3.30 (1.38)	2.43 (1.34)	26%	7,690	.24 large
Workplace Distress	2.25 (1.35)	1.94 (1.18)	14%	1,369***	.05 small
Work Engagement	3.21 (1.32)	3.46 (1.21)	8%	875***	.04 small
Life Satisfaction	3.00 (1.25)	3.66 (1.12)	22%	5,858***	.19 large

Note: Total N = 24,363. All 1-5 range of scores. Lower scores indicate better outcomes for work absenteeism, work presenteeism and workplace distress; higher scores indicate better outcome for work engagement and life satisfaction.

Part 3 – Contextual Factors as Potential Moderators of Improvement Over Time in WOS Outcomes

Is the level of improvement in WOS outcomes different for certain factors of the client (sex, age, global location), the clinical experience (referral and clinical problem types), and the employer context (industry and EAP delivery model)? These factors lack a compelling argument for why they would potentially influence the outcomes of EAP counseling. But as the data was available in such a large sample, it was prudent to conduct some exploratory analyses even though it was not expected to find many differences.

Even though the different sub-groups of each of contextual factor have some slight differences in where they start out on the Pre EAP WOS measures, it is the degree of change from Pre to the Post use of the EAP that of interest. This procedure determines if the degree of change (the relative percentage of improvement from Pre to Post) between the groups is of similar or different magnitude. For instance, do males have a larger reduction in absence hours after use of counseling than females? This question is tested as an interaction effect in the ANOVA statistical models. More specifically, the idea is to test if the *interaction* of Time X Age (or other context factors) was significant beyond chance and if so, how big was the statistical effect size for the interaction term in the repeated measures ANOVA model? Separate tests were conducted using the set of all five WOS-5 outcomes in a repeated measures multivariate analysis of variance (MANOVA) model with a between-subjects factor of the contextual variable and Time as Pre vs Post use of the EAP.

As shown in **Table 6**, the results found that only 6 of 35 tests even had a "small" size effect for the interaction of time and the context factor. Moreover, these six findings of interest were each barely above the partial eta squared effect size cutoff considered the minimum for a "small" effect of $\eta^2 = .01$ (the six results ranged from .010 to .025). To be more specific, these findings were for the presenteeism outcome and context factors of age, country, industry and EAP delivery model and also for the absenteeism outcome and context factors of industry and EAP delivery model. Refer to **Table 7** for the mean scores at Pre and Post and the relative change percentages for these factors and WOS measures.

However, the primary result was the other 29 tests had no effects for the context factors ($\eta^2 < .01$). The WOS outcomes of workplace distress, work engagement and life satisfaction each had similar levels of improvement for the various subgroups within all seven of the context factors examined. A similar degree of improvement on all five WOS outcomes also was found for male and female clients of EAP counseling. A similar degree of improvement on all five WOS outcomes was found for

Table 6: Results of Tests of Context Factors on Improvement Over Time in WOS Outcome Measures

	Workplace Outcome Suite Measure				
Context Factor:	**Work Absenteeism**	**Work Presenteeism**	**Workplace Distress**	**Work Engagement**	**Life Satisfaction**
Sex of Client	No effect	No effect	No effect	No effect	No effect
Age of Client	No effect	η_p^2 = **.012** *small effect*	No effect	No effect	No effect
Country of Client	No effect	η_p^2 = **.010** *small effect*	No effect	No effect	No effect
Referral Type	No effect	No effect	No effect	No effect	No effect
Problem Type	No effect	No effect	No effect	No effect	No effect
Industry of Employer	η_p^2 = **.025** small effect	η_p^2 = **.011** small effect	No effect	No effect	No effect
EAP Delivery Model	η_p^2 = **.016** small effect	η_p^2 = **.012** small effect	No effect	No effect	No effect

Table 7: Details of Key Results for Context Factors on Improvement Over Time in WOS Presenteeism and Absenteeism

Context Factor	N cases	Pre	Post	Percentage Change
Presenteeism Single Item 1 - 5 Rating Scale				
Age of EAP User				
< 30years	2,481	3.20	2.15	**33%**
30 - 39 years	3,094	3.23	2.22	**31%**
40 - 49 years	1,689	3.18	2.58	19%
50+ years	1,546	3.31	2.57	22%
Country of EAP User				
United States	19,234	3.34	2.54	24%
China	3,615	3.09	1.86	**40%**
Other Global	1,514	3.24	2.47	**24%**
Industry of Employer				
Healthcare	4,165	2.99	2.48	**17%**
Manufacturing	2,589	3.22	2.35	27%
Government	2,453	3.44	2.58	25%
Technology	1,254	3.44	2.65	23%
EAP Delivery Model				
External Vendor	15,086	*3.37*	2.40	29%
Employer Hybrid with External Vendor	4,760	*3.30*	2.46	25%
Employer with Internal EAP Staff	4,517	*3.04*	2.51	**17%**
Absenteeism Single Item 1 - 5 Rating Scale				
Industry of Employer				
Healthcare	4,165	2.03	1.59	**22%**
Manufacturing	2,589	2.54	1.76	31%
Government	2,453	2.49	1.48	41%
Technology	1,254	2.16	1.80	**17%**
EAP Delivery Model				
External Vendor	15,086	1.91	1.43	25%
Employer Hybrid with External Vendor	4,760	2.49	1.58	**37%**
Employer with Internal EAP Staff	4,517	2.02	1.61	20%

cases with different kinds of referrals into EAP counseling and for different kinds of presenting problems. In summary, 83 percent of the possible tests conducted indicated no meaningful differences for these context factors and the other positive tests all had very small effect sizes.

When these findings are considered together, the overall conclusion is that age and sex of client, source of referral into the EAP, type of presenting concern, employer industry, EAP delivery model and country of service have almost no practical impact on the level of the effectiveness of EAP counseling as represented in the rates of improvement on the five WOS scales. These contextual factors *do not* appreciably affect the degree to which clients of EAP counseling improve on these outcomes.

Part 4 – Relevance of the WOS Constructs to Employee Who Use EAPs

Finding a big change over time for some WOS measures (work presenteeism and life satisfaction) and yet smaller changes for other WOS measures (workplace distress and work engagement), raises a question of are certain WOS outcomes more relevant than the others to EAP counseling? One possible answer concerns how the starting level of

some of the WOS outcomes simply is not at a high enough level of problem severity (i.e. the negatively valued range of the 1- 5 rating scale, depending on the item for most of the cases in the sample to allow for improvement to occur after treatment. This is referred to as a restricted range problem when the starting score on a particular measure is close to the target level of the rating scale before treatment and thus provides little room for improvement after treatment.

To operationalize this approach involved asking how many cases were at a "problem" level before EAP use and thus had a reasonable opportunity to get better after counseling? This question was answered by using meaning embedded in the labels on the response scales to determine a more clinically relevant sub-portion of the EA user population who score at a "problem level" on a particular WOS outcome. This approach borrows from the wellness field's emphasis on finding employees who are at-risk for a health issue and then trying to reduce those risks through education and lifestyle coaching. This metric is simply the percentage of total cases that are at a "problem level" on each of the WOS measures.

The WOS data was re-coded for problem level status in the following manner. The two WOS scales that are phrased as unhealthy constructs (presenteeism and workplace distress) were considered to be at a "problem level" when a person either agreed or strongly agreed with the item (i.e., ratings of 4 or 5). Conversely, the other two WOS scales phrased as healthy constructs (work engagement and life satisfaction) were considered to be at a "problem level" when cases disagreed with the item (i.e., selected either of the options of disagree or strongly *dis*agree for the ratings of 1 or 2).

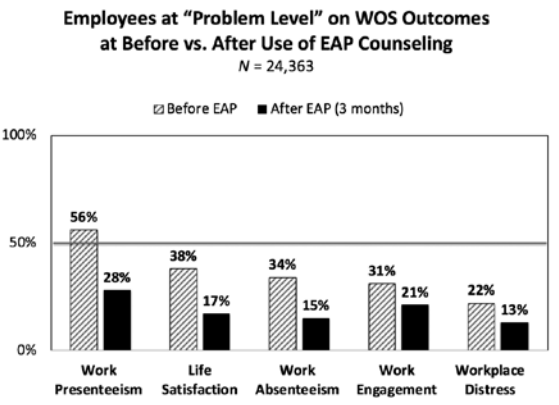
Finally for absenteeism this re-coding process had to be done differently. As the typical employee misses less than half a day of work each month due to health reasons (see review of four national survey studies by Attridge in 2016),[16] a criterion of four hours absence per month was established and an EAP user with 4 or more hours of absence was considered a "problem level" of absenteeism. The WOS scores were re-coded in this manner for all cases with available data.

The problem status variable for absenteeism was based on hours from the modified three-item measure full WOS 5-item version or from the single-item version, depending on which version was used for data collection. The problem status variable for the other four WOS outcomes were based on only the single item featured in the WOS-5 brief version, but this item was taken from all available responses pooled across the full WOS-25, WOS-9 and WOS-5 versions.

The results based on the full sample at baseline reveal that work presenteeism was the most common problem for users of EAP counseling, with 56 percent of cases agreeing that work problems prevented them from concentrating while at work. Next was having a problem with life satisfaction, with 38 percent of all EAP cases feeling their lives was *not* going well. About 1 in 3 EAP cases (34%) had a level of absenteeism from work greater than the typical employee (4 or more hours per month). About 1 in 3 EAP cases were *not* eager to get to the worksite and start their work day (31% had a problem with work engagement). And finally, about 1 in 4 EAP cases started counseling, feeling they dreaded going into work (22% had a problem with workplace distress).

Examining the variables of WOS outcome problem prevalence for the Post EAP use period, there was substantial reduction from Pre to Post use of the EAP for all five of the WOS measures (see **Figure 1**). The number of employees with these kinds of problems in the full sample was cut in half or reduced by one-third from Pre to Post (range from 56% to 32% relative reduction over time depending on the outcome).

Figure 1:



DISCUSSION

This study offers large sample evidence of the psychometric validity and test-retest reliability for all five WOS measures found in correlational tests. It also was discovered that some constructs of the WOS had better results than others concerning the effectiveness of EAP counseling. Of the five WOS measures, work presenteeism was the outcome that improved the most after EAP counseling. About 1 in every 2 EAP users had a work presenteeism problem at the start of counseling and this prevalence rate was cut in half when assessed three months later after counseling. The improvements over time for work presenteeism is the headline in the story of where EAPs make the most difference.

Perhaps most stunning was discovering that absence from work actually is not a significant aspect of the work performance burden among the majority of distressed employees who use an EAP. On average, only 1 in 3 EAP cases had a level of work absence in the past 30 days before they started counseling that exceeded the amount of health-related absence of the typical worker in the U.S. Even though the change in absence hours was good on a relative percentage basis (a 47% reduction), the specific number of hours involved is rather small, with a change from 7.4 hours on average per case at Pre EAP to 3.9 hours at Post EAP. In the big picture, 3.5 hours of restored lost work time is only a small fraction of the total 160 hours in the standard full-time monthly work schedule. Again, this fact points to the importance of the much larger change in work presenteeism among EAP cases as the time lost from being unproductive while at work usually involves far more total hours over the course of a month than does a half day of absence from work. For example, a recent review that data from multiple self-report measures of presenteeism and productivity from EAP cases worldwide estimated the typical case has a loss of 53 hours of unproductive time while at work during the month before seeking assistance from the EAP.[16] This is about six and a half total days of work loss from on-the-job presenteeism beyond the one day for absence found in the present study of WOS absenteeism data.

The large size statistical effect for the outcome of life satisfaction was somewhat of a surprise. This result can be interpreted as the life satisfaction item functioning as a more general indicator of the clinical relief and restored personal well-being that was experienced after getting personalized support and referral to needed additional resources from the EAP counselor.

Although EAP use does move work engagement and workplace distress in positive directions, these outcomes both had smaller effect sizes than the other three WOS measures. It may be that EAP interventions delivered at the individual level by counselors in private sessions cannot directly impact the larger workplace and managerial conditions operating at the organizational level that strongly influence work engagement and workplace distress.[53] More meaningful improvements in work engagement and work distress likely require other kinds of EAP services such as workplace training, managerial coaching, and work culture interventions. Even so, EAP counseling still has a measurable – if smaller – impact on work engagement and workplace distress.

Concerning the results of the exploratory tests of moderating factors, it was found that client demographic factors, clinical factors and employer contextual factors had either no effect or very small differences on degree of change from Pre to Post EAP use on the WOS outcomes.

The new analytical approach of splitting the cases into two groups of those with or without a "problem" with each kind of WOS outcomes revealed new insights about what appears to be the rather healthy status of the typical user of EAP counseling. Other than a slight majority of the cases with a work presenteeism problem, the majority of EAP cases were *not* at a problem level on all four of the other WOS scales when starting counseling. The rather low prevalence rates of having problems on multiple kinds of work outcomes can also be interpreted as an indication of the mostly non-clinical nature of employees who seek help from the EAP. It is self-evident that even though something happens in the personal or work life that prompts the need for seeking immediate assistance from employer-sponsored employee assistance programs, all of the individuals using EAP services are healthy enough to be gainfully employed (rather

than unemployed or on disability).

What is perhaps most interesting is the wide range between the different WOS measures in the percentage of cases at baseline with a "problem" on the measure. The biggest difference was that more than twice as many users of EAP counseling had a work presenteeism problem than had a workplace distress problem at the start of counseling. Such differences in the levels of baseline problem prevalence may explain the differences that were found between the WOS measures in their statistical effect sizes as described in Part 2 of the Results. Finding small size effects for workplace distress and work engagement makes more sense when considering these outcomes both had the smallest percentage of cases at a problem level when beginning counseling.

Putting the WOS Findings In Context

A global data review of EAP outcomes using a variety of measures and methods and based on 122,755 cases from 9 studies (excluding the other past studies in the review using the WOS measures) found that 27 percent of EAP cases, on average, have a problem with work absence in the month prior to counseling.[16] Thus, the problem status level of 34 percent in the present study of WOS aggegated data is on par with what has often been found in the past studies of absence among EAP users.

The same review of other global EAP outcomes data for work presenteeism examined eight studies (excluding the other past studies in the review using the WOS measures) with a variety of measures and methods and represented a combined total of 121,273 cases.[16] It found that 55 percent of EAP cases, on average, had a problem with being productive during the month prior to counseling. The finding that 56 percent of EAP cases had a problem with work presenteeism in the present study of WOS data is very consistent with what is typically found in past studies of presenteeism and lack of productivity among EAP cases.

The findings with the WOS emphasize that work presenteeism is much more of a significant issue than absenteeism for employees. Indeed, of the five WOS outcomes, work presenteeism is the most common problem at the start of counseling and also has the largest effect size for the magnitude of improvement after counseling from the EAP. This emphasis on presenteeism over absenteeism also has been found in many studies of worker health.[54-56]

Limitations

There are numerous variables missing from this study that are potentially responsible for differences in WOS results. Some of these factors are in the overall health or well-being status of the client (clinical risk factors), the counselor rated level of clinical severity of the case (seriousness of the risks), the number of counseling sessions experienced (clinical dosage delivered), the fidelity of the counseling interventions provided to meeting best practices for EAP (quality), whether or not the case was referred out after the EAP for more serious treatment (clinical referral), if the sessions were provided in-person or telephone or via e-health technology tools (clinical modality). All of these important factors are not in the present global dataset of WOS data. Thus, further research is needed to tease apart which of these factors are most strongly impacting how much clients improve (or do not improve) resulting from use of EAP counseling. Even so, the present study clearly indicates the "typical" kinds of EAP counseling delivered all over the world has a substantial impact on work presenteeism and overall life satisfaction of employees and has smaller effect on reducing problems of work absence, distress over conditions at the workplace and lack of engagement in one's work.

Conclusion

The workplace outcomes approach represents a departure from conventional measures by objectively identifying when employee assistance services demonstrably work in the context of the workplace. No self-report survey instrument is perfect, but the WOS is the best tool to date that EA professionals have for refuting the age-old question skeptical employers have of whether EAPs actually can contribute to improving the well-being and work performance of distressed employees.

The Workplace Outcome Suite also was developed to make the case for whether investing in EAP makes business sense.[57-59] There's a broad misconception that all EA

services and service providers are equal except in price.[60] Since the typical cost for EAP is remarkably low even when selecting the highest cost vendor, organizations would benefit from focusing on identifying an EAP partner that is a good fit for the organization, and not just one that is offered at the lowest price. These issues are reviewed in several other papers.[61-63] Indeed, employers and brokers focusing on finding the lowest cost provider or selecting an EAP vendor only on the level of program utilization should expand their selection criteria to include a more rigorous analysis of the EAP's ability to deliver direct and indirect business value to the organization using a validated outcomes tool with a credible methodology.

The Workplace Outcome Suite can fill this need and now that worldwide normative results are available, the different EAPs collecting WOS data can be compared with each other on the same outcome metrics. Such a scenario could usher in a new era that offers EAPs the chance to compete for business on program outcomes as well as on program price.

AUTHORS

Mark Attridge, PhD, MA, is president of Attridge Consulting, Minneapolis, MN, U.S.A. and a research scholar in independent practice focusing on workplace mental health and employee assistance programs.

David Sharar, PhD, is CEO of Chestnut Health Systems and Director of Chestnut Global Partners, (a Morneau Shepell company) Division of Commercial Science, Bloomington, IL, U.S.A., is co-creator of the Workplace Outcome Suite© (WOS) and a leading provider of employee assistance services worldwide.

Gregory DeLapp, MHS, CEAP is CEO of the Employee Assistance Professionals Association (EAPA), an international organization representing more than 4,000 EAP professionals based in Arlington, VA, U.S.A.

Barbara Veder, MSW, RSW, is Vice President, Global Clinical Services, Research Lead, and Chief Clinician at Morneau Shepell.

The authors wish to thank Kathryn Modisette of Chestnut Global Partners for her assistance in preparing the master file of WOS data for the study.

ENDNOTES

EN[1] For more information on the history of the WOS, see the paper by Lennox, Sharar, Schmitz, and Goehner in this same special issue that compares the three versions and examines the psychometric properties of the 5-item short form.

EN[2] For more information on the case study of the WOS data at Federal Occupational Health, see the paper by Mintzer, Morrow, Tamburo, Sharar and Herlihy in this same special issue.

EN[3] Excluded from this total was one internal EAP with 354 cases. This was excluded because it had not collected data on two of the five WOS measures (i.e., had missing data for all cases at Pre and Post on absenteeism and engagement) and no data on the case level client demographic or clinical experience factors.

REFERENCES

1. Karg RS, Bose J, Batts KR, Forman-Hoffman VL, Liao D, Hirsch E, Pemberton MR, Colpe LJ, Hedden SL. Past year mental disorders among adults in the United States: Results from the 2008–2012 Mental Health Surveillance Study. *CBHSQ Data Review.* Published by the Center for Behavioral Health Statistics and Quality. Washington, DC: SAMHSA. 2014, October.
2. Nyce S, Grossmeier J, Anderson DR, Terry PE, Kelley B. Association between changes in health risk status and changes in future health care costs: A multiemployer study. *Journal of Occupational and Environmental Medicine.* 2012;54(11):1364-1373.
3. Bennett J, Bray J, Hughes D, Hunter J, Frey JJ, Roman P, Sharar DA. Bridging Public Health with Workplace Behavioral Health Services. Unpublished independent paper jointly sponsored by the Employee Assistance Professionals Association, The Employee Assistance Research Foundation, and the Employee Assistance Society of North America. 2015. Available from: http://hdl.handle.net/10713/4876
4. Attridge M. Employee Assistance Programs: Evidence and current trends. In: Gatchel RJ, Schultz IA, eds. *Handbook of Occupational Health and Wellness.* Boston, MA: Springer. 2012: 441-467.
5. Employee Assistance Professionals Association. EAPA Standards and Professional Guidelines for Employee Assistance Programs. Arlington, VA: Author. 2010.
6. Employee Association Professionals Association. Definitions of employee assistance program and core technology. 2011. Available from: http://www.eapassn.org/i4a/pages/index.cfm?pageid=521
7. Roman PM, Blum TC. The Core Technology of Employee Assistance Programs. *The ALMACAN.* 1985;15(3):8-9,16-19.
8. Roman PM, Blum TC. Reaffirmation of the Core Technology of Employee Assistance Programs. *The ALMACAN.* 1988;19(8):17-22.
9. Sharar DA. General mental health practitioners as EAP network affiliates: Does EAP short-term counseling overlap with general practice psychotherapy? *Brief Treatment and Crisis Intervention.* 2008;8:358-369.
10. Shakespeare I, Ichikawa K, Antonissen D, Ozeisei A, Wigger H, Espinoza, J. A global look at EAP. *Journal of Employee Assistance.* 2014;44(4).
11. Attridge M. Future Trends in Organizational Risk Management: Survey Results and Implications for EAPs in Europe. [discussion leaders Antonissen D, Sommer M.). Keynote presentation at the 16th annual conference of the Employee Assistance European Forum, Milan, Italy; 2017, June. Available from: http://hdl.handle.net/10713/6721
12. Hartwell T, Steele P, French

M, Potter F, Rodman N, Zarkin G. Aiding troubled employees: The prevalence, cost, and characteristics of employee assistance programs in the United States. *American Journal of Public Health.* 1996;86(6):804-808.
13. Bureau of Labor Statistics, U.S. Department of Labor. The Economics Daily, Employer-provided quality-of-life benefits, March 2016. 2017. Available from URL: https://www.bls.gov/opub/ted/2016/employer-provided-quality-of-life-benefits-march-2016.htm
14. WorldatWork. 2017 Inventory of Total Rewards Programs & Practices. White paper. Washington, DC: Author. (2018).
15. Attridge M. The business case bibliography: 100 review papers on the workplace value of mental health, addiction and EAP services. EASNA Research Notes. 2011;2(4):1-10. Available from: http://hdl.handle.net/10713/5129
16. Attridge M. EAP Industry Outcomes for Employee Absenteeism and Presenteeism: A Global Research Analysis. Presented the annual conference of the Employee Assistance Professionals Association, Chicago, IL; 2016, October. Available from: http://hdl.handle.net/10713/7203
17. Csiernik R. The glass is filling: An examination of employee assistance program evaluations in the first decade of the new millennium. *Journal of Workplace Behavioral Health.* 2011;26(4): 334-355.
18. Blum TC, Roman PM. Cost-Effectiveness and Preventive Implications of Employee Assistance Programs. U.S. Department of Health and Human Services, Public Health Service, Substance Abuse and Mental Health Services Administration, Center for Substance Abuse Prevention. 1995.
19. McLeod J. The effectiveness of workplace counselling: A systematic review. *Counselling and Psychotherapy Research,* 2010;10(4):232-248.
20. Joseph B, Walker A, Fuller-Tyszkiewicz M. Evaluating the effectiveness of employee assistance programmes: A systematic review. *European Journal of Work and Organizational Psychology.* 2018;27(1):1-15.
21. Mellor-Clark J, Twigg E, Farrell E, Kinder A. Benchmarking key service quality indicators in UK Employee Assistance Programme Counselling: A CORE System data profile. *Counselling and Psychotherapy Research.* 2013;13(1):14-23.
22. Attridge M, Cahill C, Granberry GW, Herlihy PA. The National Behavioral Consortium industry profile of external EAP vendors. *Journal of Workplace Behavioral Health.* 2013;28(4):251-324. Available from: http://hdl.handle.net/10713/3687
23. Jacobson JM, Jones AL, Bowers N. Using existing employee assistance program case files to demonstrate outcomes. *Journal of Workplace Behavioral Health.* 2011;26(1):44-58.
24. Attridge M. Evolution of the Employee Assistance Program industry in North America: Historical changes and what purchasers want today. Unpublished report. Alexandria, VA: Employee Assistance Society of North America, 2018. Available from: http://hdl.handle.net/10713/8061
25. Lennox RD, Sharar DA, Schmitz E, Goehner DB. Development and validation of the Chestnut Global Partners Workplace Outcome Suite. *Journal of Workplace Behavioral Health.* 2010;25(2):107-131.
26. Sharar DA, Lennox R. The workplace effects of EAP Services: "Pooled" results from 20 different EAPs with before and after WOS 5-item data. EASNA Research Notes. 2014;4(1). Available from: http://www.easna.org/publications
27. Pompe JC, Lennox R. Case Example: Measuring EAP Success Using Workplace Outcomes. Presented at the 22nd Annual Institute of the Employee Assistance Society of North America, Montreal, QB, Canada. 2010, May.
28. Sharar DA, Pompe JC, Lennox R. Evaluating the workplace effects of EAP counseling. *IHPM Journal of Health & Productivity.* 2012;6(2):5-14.
29. Sharar DA, Pompe JC, Attridge M. On-site versus off-site EAPs: A comparison of workplace outcomes. *Journal of Employee Assistance.* 2013;43(2):14-28.
30. Sharar DA, Eertmans A. *Happiness, Life Satisfaction and Work Engagement: A Case Study with the WOS Demonstrating Effects of EAP (ConocoPhillips).* Presented at the annual conference of the Employee Assistance European Forum, Dublin, Ireland. 2013, June.
31. Lennox R, Mollenhauer M. The Workplace Outcome Suite: Results from an EAP Research Network. Presented at the Annual Conference of the Employee Assistance Professionals Association, San Diego, CA. 2015, October.
32. Sharar DA, Mollenhauer M, Heck P. EAP Works Across Cultures and Borders. White paper on EAPA website. 2016. Available from: http://www.eapassn.org/Study-EAP-Works
33. Mintzer J, Back Tamburo M. Demonstrating Value: Measuring Outcomes and Mitigating Risks with the Workplace Outcome Suite within the Federal government. Presented at the annual institute of the Employee Assistance Society of North America, Atlanta, GA. 2017, May.
34. Attridge M, Menco H, Stidsen A. Fewer employees have workplace problems after counseling: WOS-5 results at Partners HealthCare System EAP. *Journal of Employee Assistance.* 2018, in-press.
35. Chestnut Global Partners. Workplace Outcome Suite 2018 Annual Report: Global Results for Counseling Outcomes, EAP Profiles and Rethinking Absenteeism. Bloomington, IL: Author. 2018.
36. Servizio L. The universal language of ROI: Converting your EAP benefit into an investment. Keynote presentation at the 5th Forum on Employee Assistance Programs, Athens, Greece. 2017, May.
37. Li P, Mollenhauer M, Zhang C. Examining EAP effectiveness in China. *Journal of Employee Assistance.* 2015;45(3):24-27.
38. Li P, Sharar DA, Lennox R, Zhuang W. Evaluating EAP counseling in the Chinese workplace: A study with a brief instrument. *Journal of Workplace Behavioral Health.* 2015;30(1-2):66-78.
39. Li P. EAP Research Presentations from Around the Globe. Presented at the Annual Conference of the Employee Assistance Professionals Association, Chicago, IL. 2016, November.
40. Burgess K, Lennox R, Sharar DA, Shtoulman A. A substance abuse intervention program at a large Russian manufacturing worksite. *Journal of Workplace Behavioral Health.* 2015;30(1-2):138-153.
41. Mazouropoulou C. WOS (Workplace Outcome Suite): Longitudinal Outcomes of the Face to Face EAP Counseling Services in Greece. Presentatied at the 5th Forum on Employee Assistance Programs, Athens, Greece. 2017, May. Available from: http://hdl.handle.net/10713/7232
42. Richmond MK, Pampel FC, Wood RC, Nunes AP. The impact of employee assistance services on workplace outcomes: Results of a prospective, quasi-experimental study. *Journal of Occupational Health Psychology.* 2017;22(2):170-179.
43. Richmond MK, Pampel FC, Wood RC, Nunes AP. Impact of employee assistance services on anxiety, depression and risky alcohol use: A quasi-experimental study. *Journal of Occupational and Environmental Medicine.* 2016;58(7):641-650.
44. Nunes AP, Richmond MK, Pampel FC, Wood RC. The effect of employee assistance services on reductions in employee absenteeism. *Journal of Business and Psychology.* 2017:1-11. Available from: https://doi.org/10.1007/s10869-017-9518-5
45. Attridge M, Dickens, S. Health and Emotional Wellbeing in the Workplace: Behavioral Screening and Intervention as an Effective Approach to Wellness. Presented at the Vermont Worksite Wellness Conference, Burlington, VT. 2018, March. Available from: http://www.healthvermont.gov/wellness/physical-activity-nutrition/2018-worksite-wellness-conference
46. Attridge M. Can EAPs experiment in the real world. *EAPA Exchange.* 2001(2);26-27.
47. Lerner D, Rodday AM, Cohen JT, Rogers WH. A systematic review of the evidence concerning the economic impact of employee-focused health promotion and wellness programs. *Journal of Occupational and Environmental Medicine.* 2013;55(2):209-222.
48. Pompe J, Sharar DA. Preparing for the challenges of the Employee Assistance Research Foundation: A response to Carl Tisone's 'Call to Action'. *Journal of Workplace Behavioral Health.* 2008;23(3), 217—227.
49. Attridge M, Amaral T, Bjornson T, Goplerud E, Herlihy P, McPherson T, Paul R, Routledge S, Sharar DA, Stephenson D, Teems L. EAP services, programs and delivery channels. EASNA Research Notes. 2009;1(4). Available at: http://www.easna.org/publications
50. Cohen J. Statistical Power Analysis for the Behavioral Sciences. New York, New York: Routledge. 1998.
51. Richardson JTE. Eta squared and partial eta squared as measurements of effect size in educational research. *Educational Research Review.* 2011;6:135-147.
52. Wuensch KL. Standardized Effect Size Estimation: Why and How? Unpublished Report. 2015. Available from: http://core.ecu.edu/psyc/wuenschk/StatHelp/Effect%20Size%20Estimation.pdf
53. Attridge M. Measuring and managing employee work engagement: A review of the research and business literature. *Journal of Workplace Behavioral Health.* 2009;24(4):383-398.
54. Johns G. Presenteeism in the workplace: A review and research agenda. *Journal of Organizational Behavior.* 2010;31(4):519-542.
55. Goetzel RZ, Long SR, Ronald MS, Ozminkowski J, Hawkins K, Wang P, et al. Health, absence, disability and presenteeism cost estimates of certain physical and mental health conditions affecting U.S. employers. *Journal of Occupational and Environmental Medicine.* 2004;46(4):398-412.
56. Pauly MV, Nicholson S, Polsky D, Berger ML, Sharda C. Valuing reductions in on-the-job illness: 'Presenteeism' from managerial and economic perspectives. *Health Economics.* 2008;17(4):469-486.
57. Attridge M, Servizio L, Sharar DA, Mollenhauer M. EAP ROI Calculator - Conceptual approach and default data inputs: Research review appendix. White Paper. Bloomington, IL: Chestnut Global Partners. 2015.
58. Servizio LA. Why CFOs should learn to love EAPs. *WorkSpan.* 2017;April:51-57.
59. Servizio LA, Mollenhauer M, Shjerven T. Taking the mystery out of ROI calculations. *Journal of Employee Assistance.* 2016;46(4):26-27.
60. Pompe JC, Sharar DA, Jacobson-Frey J. EAP options for today's workforce: Maximizing value by design. Benefits Pro. 2017, April. Available from: https://www.benefitspro.com/2017/04/06/eap-options-for-todays-workforce-maximizing-value/?slreturn=20180308175439
61. Sharar DA, Hertenstein E. Perspectives on commodity pricing of Employee Assistance Programs: A survey of the EAP Field. *WorldatWork Journal.* 2006;Q1:34-41.
62. Attridge M. Integration Insights Column (#7): Implications of Pricing for EAP integration. *Journal of Employee Assistance.* 2017;47(1):26-27.
63. Frey JJ, Pompe J, Sharar DA, Imboden R, Bloom L. Experiences of internal and hybrid employee assistance program managers: Factors associated with successful, at-risk, and eliminated programs. *Journal of Workplace Behavioral Health.* 2018;33(1):1-23.