# Employee Assistance Program Counseling Improves Clinical and Work Outcomes: CuraLinc Healthcare Results from Over 85,000 Cases

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DOI: 10.29322/IJSRP.14.03.2024.p14722
http://dx.doi.org/10.29322/IJSRP.14.03.2024.p14722

Paper Received Date: 6th February 2024
Paper Acceptance Date: 9th March 2024
Paper Publication Date: 15th March 2024

***Abstract*:** This applied study explored how workers in different major industries used employee assistance program (EAP) clinical services and examined the level of effectiveness of service use on common behavioral health and work-related outcomes. We used data collected over a 7-year period from employee users of individual counseling or coaching from a single national EAP business in the United States. Data was obtained from archival records of the normal course of business at CuraLinc Healthcare. The sample included 85,432 clients who worked at 2,679 different employers. Longitudinal follow-up data at Post use was available from 9,063 cases (11% of the starting full sample). Among those cases initially at clinical risk status on outcomes in the total sample, severity scores from Pre to Post were reduced by almost two-thirds for anxiety, depression, alcohol misuse and hours lost work productivity (change from 63.5 hours to 23.6 hours). In the total sample, a large majority of the cases who started EAP use at-risk on the specific measure later successfully recovered to no longer be at clinical risk at the 30-day follow-up: anxiety (78% of 1,105 cases recovered; $\eta_p^2 = .77$), depression (87% of 1,316 cases recovered; $\eta_p^2 = .87$), and hazardous alcohol use (74% of 788 cases recovered; $\eta_p^2 = .74$). Among cases with a work absenteeism and/or work presenteeism problem before EAP use, 88% of 3,636 cases recovered ($\eta_p^2 = .74$). These longitudinal results in the total sample were all large size statistical effects. Users were grouped into eight types of industries according to their employer: manufacturing and related heavy labor (20% of the total cases); healthcare (18%); financial and business (14%); transportation (12%); restaurants and retail trade (12%); education (9%); government and municipality (7%); and technology (7%). The gender mix of clients ranged widely by industry (from 44% to 80% women). The rare event of being formally referred into the EAP by a manager at work also varied by industry (from <1% to 6%). In the total sample, when starting to use the EAP many cases reported having clinical level symptoms on standardized measures for anxiety disorder (43% at-risk), depression disorder (30% at-risk), alcohol misuse disorder (12% at-risk) and low work productivity (50% at problem level). Only small or trivial size variations were found between the industry types in the service use characteristics and for almost all clinical risk rates. These clinical and work outcome improvement test results were found to be similar within each industry type (i.e., specific industry results only ranged from 5% better to 5% worse than the study average result). Comparisons with past research, study limitations and implications are discussed. This study is unique in providing empirical profiles of multiple industries using the same operational system and the same clinical and work measures collected longitudinally from large samples of EAP users working at thousands of employers nationally.

***Index Terms***: absenteeism, alcohol, anxiety, counseling, depression, employee assistance program, industry, presenteeism, work

## I. Introduction

Mental health and substance misuse disorders affect about one-fourth of all employees on a yearly basis and up to one-half of employees over the course of their lifetimes [1-4]. Behavioral health disorders adversely impact businesses success in areas of health care costs [5,6], excessive absence and lost work productivity [7-9], employee turnover [4,10] and even workplace accidents and death [11,12]. Thus, it is no surprise that most employers strive to support the mental health of their workers in a variety of ways [13-16].

### *4.4. Overview of Employee Assistance Programs*

One of the most popular ways to suppport workers is to sponsor an employee assistance program (EAP). EAPs are designed to help workers resolve acute but modifiable behavioral health issues [17-20]. Through individual confidential counseling the goal is to restore the emotional, mental and general well-being of employees. Almost all users of EAP counseling are voluntary self-referrrals into the

program, but about 3% of cases are formally referraled to use the EAP by a manager at work [21]. Once at the program, the experience begins with an initial comprehensive assessment followed by short-term psychological treatment. The talk therapy can involve from between 1 to 10 or more sessions of counseling contact per case, depending both on the serverity of the clinical issue and the maximum number of treatment sessions allowed in the contract. Using 3 to 6 sessions of counseling per case is common at most EAPs. The reasons why employees present at the EAP for support involve a range of behavioral health, stress, personal life and work-related issues [22]. A full-service EAP can provide counseling either in-person at clinical office settings located in the community where the employee lives or remotely via phone, online video or text-based technologies [23-27]. Mental health coaching is a newer less clinically focused support option that is available at some EAPs [28].

Brief counseling provided by EAPs has substantial research evidence collected over the past 40 years that documents a high level of clinical success for most users on both clinical and work outcomes. This evidence comes from EAPs in the U.S. [29-33], Canada [34-36], Europe [37-41], South Africa [42], Australia [43], Taiwan [44] and other regions [20] that all have generally positive results for most users of the counseling. Mental health coaching also has evidence of effectiveness for improving both mental health and work outcomes for employees who have less severe clinical symptoms and prefer coaching serices over counseling treatment [28].

These kinds of programs first started in the U.S. back in the 1930s and initially were called occupational alcoholism programs [45]. Today this country has the largest and most mature EAP market in the world [46]. Recent national U.S. data from March of 2023 shows that overall, 64% of full-time workers have an EAP benefit available to them as part of employee benefits package [47]. Offering an EAP is higher among unionized workers at 75% compared to 52% for nonunion workers [48]. Earlier more detailed BLS data from year 2021 was analyzed [49] and that study revealed that offering an EAP benefit varies dramatically by size of the employer. In the private sector, a third of all workers at small employers (under 100 employees) have an EAP, about two-thirds of the workers at medium-sized employers (100 to 499 employees) have an EAP, and almost 9 of every 10 workers at large employers (500 or more employees) have an EAP. All together in the private sector, a total of over 3.2 million employers sponsor an EAP [49]. The majority of public sector organizations in the U.S. – such as local and state governments and the federal government – also offer an EAP benefit to their workers [49]. Altogether, over 75 million workers in the U.S. were estimated in 2021 to have access to an EAP benefit through their employer [49].

The success of EAPs is not limited to the U.S. EAPs are common in many other countries around the world [50-53]. For example, it is estimated that an EAP is available to over 24 million employees in the United Kingdom [54], over 10 million employees in Canada [55], and over 9 million employees in Australia and New Zealand [56]. Thus, the global reach of EAPs exceeds 100 million employees worldwide.

### *1.2. Overview of the Labor Market in the United States by Industry*

The U.S. civilian labor market includes over 157 million workers in January of 2024 [57]. These figures exclude the seasonal farm labor sector and the military but does includes all private sector (130 million; 85%) and public sector (23.1 million; 15%) workers. Demographic characteristics of the labor force include a gender mix of 53% men and 47% women and an average age of 42 years [58]. An important factor of a business is how many employees work at the company. Size of employer in the U.S. varies considerably from 1 to over 1,000 employees and is very skewed toward the low end of the range. Over half of employers in the country (57.3%) have just 1 to 4 employees. The next group of employers with 5 to 99 employees account for 40.3% of all employers. Employers with 100 to 499 workers are only 1.9% of the total establishments. Very few employers are in the larger size category with 500 or more employees (0.4%). Thus, small employers of under 100 workers comprise 98% of all of the companies and organizations in the U.S. However, despite their tiny numbers in the total count of establishments, the medium (25%) and larger size employers (18%) do provide jobs for over 4 in every 10 workers in the country (43% of the workforce). As noted above, this has implications for EAPs as having this benefit at a particular employer is strongly associated with increasing size of the establishment.

These employees work in hundreds of different industries [59]. Recent data collected by the Bureau of Labor Statistics (BLS) for the national government is presented in Table 1 by the major industry types most relevant to the industry categories featured in our study data on EAP users. The methodology used to create these groupings of different industries is provided in Appendix A. Each industry group is briefly reviewed below based on total workers and other factors.

**Manufacturing and Heavy Labor.** Workers in the manufacturing industry and related heavy labor ("blue-collar" jobs) category represent 19.4% of all workers in the country. This industry has 29.3 million workers in total with about half in manufacturing, followed by other groups including construction (8.1 million), wholesale trade (6.2 million), repair and maintenance (1.5 million) and utilities (such as oil, gas and electric; 0.6 million). This industry has 3 in every 4 of its workers being men (75%; 25% women), an average worker age of 44 years, with 9% of workers represented by a union. The typical worker earns $44 per hour in compensation (wages and benefits value combined) and works 39 hours per week. Of the 2.2 million employers, 99% are in the private sector and <1% in the government sector. This industry has an annual rate of 2.8 cases per every 100 employees who experience a workplace injury or illness.

**Transportation.** Workers in the transportation industry represent 4.3% of all U.S. workers. This industry has 4.3 million workers in total with sub-types of transportation via trucking (1.5 million workers), airlines (568k), railways (153k), waterways (93k) and pipelines (32k), as well as passenger and scenic transportation (465k), personal courier delivery services (1.1 million) and general warehousing and storage (2.6 million). This industry has 3 in every 4 of its workers being men (74%), an average worker age of 43 years, with 17% of workers represented by a union (which is almost three times the private section norm of 6%). The typical worker earns $35 per hour in compensation and works 38 hours per week. Of the over 367,000 employers, 91% are in private sector and 9% in the government sector. The transportation industry has a similar profile to the manufacturing industry and together these two male-dominated heavy labor industries account for 1 in every 4 workers. This industry has an annual rate of 4.8 cases per every 100 employees who experience a workplace injury or illness – which is the highest rate.

**Restaurants and Retail Trade.** Workers in the restaurant and retail trade industries together represent 18.5% of the U.S. labor force. This industry has 27.9 million workers in total with 12.3 million employees in the restaurant subtype of "food services and drinking places" and another 15.7 million employees in the retail trade subtype. This industry is evenly split on gender (50% men; 50% women) and the average worker is 34 years old. Only 3% of these workers are represented by a union. The typical worker earns $23.9 per hour in compensation and works 28 hours per week. Of the 1.8 million employers, 99% are in the private sector. This industry has an annual rate of 3.1 cases per every 100 employees who experience a workplace injury or illness. This industry has the most unique profile of the 8 major types with worker age being the youngest), compensation being the lowest and workload levels being the lowest. This reflects a group with many small employers and most workers having entry-level positions that require only minimal education and professional training. This industry also has high variability in work time schedules, seasonal employment and mix of part-time or full-time employee status among workers.

**Financial and Business.** Workers in the financial industry and related general business ("white-collar" jobs) represent 5.9% of all U.S. workers. This group also includes sub-types of banking, insurance, employee benefits and also more general business management activities. It has over 9.3 million workers with 53% workers being women and 47% men and the average worker is 44 years old. This group has high compensation per hour per worker ($69), with a 37-hour average work week, and a very low level of workers represented by a union (only 2%). Of the over 1 million employers, 99% are in the private sector. This industry has a very low annual rate of 0.4 cases per every 100 employees who experience a workplace injury or illness.

**Technology.** Workers in the technology and related information types of industry represent 5.0% of all U.S. workers. This industry has 7.6 million workers in total with 4.6 million employees in the subtype of scientific and technical services and another 3.0 million employees in the information services subtype. It has 56% workers being men and 44% women and the average worker is 42 years old. This group has high compensation per hour per worker ($69), with a 37-hour average work week, and 4% of workers represented by a union. Of the over 1 million employers, 99% are in the private sector. This industry has a low annual rate of 0.9 cases per every 100 employees who experience a workplace injury or illness. The technology industry has a profile very similar to the financial and business industry.

**Healthcare.** Workers in the healthcare and social assistance services industry represent 16.5% of all U.S. workers. It has over 24.9 million workers. A small segment of this industry type involves religious, civic and other supportive organizations in the private sector. This industry has 3 in every 4 of its workers being women (74%; 26% men), the average worker is 43 years old and 7.8% of these workers are represented by a union. The typical worker earns $34 per hour in compensation and works 33 hours per week. Of the 2.1 million employers, 99% are in the private sector. This industry has an annual rate of 4.2 cases per every 100 employees who experience a workplace injury or illness – which is one of the higher rates.

**Education.** Workers in the educational services industry represent 9.2% of all U.S. workers. It has over 14.5 million workers. This group includes sub-types of education for children (primary school through high school) and all forms of adult education provided by trade schools, 2-year and 4-year colleges, universities that offer graduate degrees and other kinds of professional training and educational support organizations. Unlike the other industries, education has a broader mix of employers by sector with the majority of employees coming from local school systems (8.0 million) and state level schools (2.6 million) and with just one-fourth of employees in the private sector (3.9 million). Reflecting this large government and municipal cohort, this industry has one of the higher levels of unionized workers at 28%. This group has moderate compensation per hour per worker ($58), with a 30-hour average work week when annualized. This industry has the distinction of having almost 8 out of 10 workers being women (77%) with 23% men and yet is average concerning worker age (44 years). This industry has an annual rate of 2.0 cases per every 100 employees who experience a workplace injury or illness. The number of employer establishments for this industry was unreliable data and not analyzed.

**Government and Municipality.** Workers in the government and municipality industry type represent 7.9% of all U.S. workers. It has over 12.4 million workers and all from the public sector (excluding workers in education – see above). Subtypes with the government include 2.7 federal employees, 2.8 million state level employees and 6.7 million local municipal employees. Many areas focus on public

administration and policy, public health and related research, physical science and engineering, social sciences and foreign languages and business and technology. Public safety, judicial work and law enforcement are high profile segments of government and municipal organizations. This industry type has the distinction of having the highest level of unionized workers (33%). This group has high compensation per hour per worker ($63), with a 40-hour average work week. The typical government worker is age 45 and the gender mix is 58% women and 42% men. However, some profile data was unavailable from the BLS for this public sector industry (weekly worked hours even though most employees are full-time; injury/illness rate; number of total establishments).

**Other Industries**. Finally, another 15.9% of the total U.S. workforce are employees in industries other than those profiled above. These 25.0 million workers are from a diverse mix of industries that included: a) administrative and support industries within the larger professional and business services (8.9 million); b) other professional services that were non-technical or non-scientific (6.4 million); c) leisure and accommodations (4.5 million; which has a very similar profile to the restaurants group); d) real estate management and leasing services (2.5 million); e) personal and laundry services (1.5 million); and f) natural resources and mining (>635,000).

**Table 1.** *United States Total Civilian Labor Force 2024 by Industry Types Relevant to Study*

| Industry | Characteristics | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Workers | | Age | Gender M/F | Union | Comp. per hour | Weekly hours | Injury illness | Employer establishments |
| | Number | % | Years | % | % | $ | # | # | # (% Private) |
| Manufacturing & "blue collar" | 29,342,100 | 18.6 | 43.6 | **75**/25 | 9.1 | 45.98 | 39.1 | 2.8 | 2,249,510 (99.3) |
| Transportation & warehousing | 6,556,000 | 4.2 | 43.1 | **74**/26 | **17.0** | 35.03 | 38.0 | **4.8** | 367,892 (**91.0**) |
| Restaurants & retail trade | 27,948,000 | 17.7 | **34.2** | 50/50 | 3.2 | *23.90* | 27.9 | 3.1 | 1,781,628 (99.9) |
| Financial & management | 9,305,100 | 5.9 | 43.5 | 47/53 | 1.9 | **68.77** | 37.4 | 0.4 | 670,826 (99.8) |
| Technology & information | 7,641,650 | 4.8 | 42.1 | 56/44 | 4.3 | **68.64** | 36.5 | 0.9 | 1,058,283 (99.3) |
| Healthcare & social assistance | 24,937,900 | 15.8 | 43.2 | 26/**74** | 7.8 | 42.77 | 33.1 | **4.2** | 2,107,459 (99.2) |
| Educational Services | 14,515,700 | 9.2 | 43.8 | 23/**77** | **28.0** | 58.52 | 32.3 | 2.0 | NA |
| Government & municipality | 12,427,100 | 7.9 | 45.1 | 42/58 | **32.5** | **62.67** | NA | NA | NA (**0**) |
| Other industries | 25,027,150 | 15.9 | 42.4 | 52/48 | 6.0 | 38.51 | 33.4 | 1.9 | 3,525,884 (99.5) |
| Total | 157,700,800 | 100 | 42.0 | 53/47 | 10.6 | 43.93 | 34.0 | 2.7 | 85% Private |

*Note*: Excludes farming industry and all military. Government & Municipal excludes education (as those workers moved to Educational Services). Compensation is wages and benefits combined. Illness and injury case rate per 100 workers per year. Source data from 2023 or January of 2024.

In summary, this analysis of multiple industries is useful to see a high-level picture of the eight industry groups of interest to our study and learn how they are similar or different (see elements in **bold** of Table 1). There are substantial differences in how many workers are in each industry, with the larger ones being manufacturing and restaurant/retail trade and the smaller ones being transportation/warehousing, technology/information and financial/business groups. Worker age is generally the same except for the restaurant/retail trade group which is considerably younger. The gender mix of the workforce ranges widely, with about three-fourths of workers being men in the manufacturing and transportation groups compared to about three-fourths of workers being women in the education and healthcare groups. Most industries have fewer than 10% of workers represented by a union, but the government/municipality (33%), education (28%), and transportation industries (17%) all being much more unionized. The level of paid wages and employee benefits provided also varies substantially by industry. The least compensated workers are in the

restaurant/retail trade group and the highest levels among workers in the financial/business, technology/information and government/municipality groups. The typical workload (measured in hours worked per week) is lowest for restaurant/retail trade and highest for the manufacturing and transportation industries. The level of safety at work for the typical worker also varied substantially by industry. The lowest rate for injury and illness cases is among the highly compensated "white-collar" workers in financial/business and technology/information industries, while the transportation and healthcare industries both had rates more than four times as high.

*1.3. Behavioral Health Issues by Industry*

The majority of research examining the prevalence of behavioral health disorders and the effectiveness of counseling to treat these disorders has been conducted from the perspective of the individual employee and his or her personal characteristics, life history and other contributing individual level factors [60,61]. For example, prior research has shown gender is related to different prevalence rates for behavioral health problems with a pattern that more women than men have internalizing emotion-focused disorders (such as depression and anxiety), while more men than women exhibit externalizing disorders such as substance abuse and antisocial behavior (i.e., anger and violence) [62]. Although research has focused on behavioral disorders among employees in certain industries and workplaces [see literature review of 556 studies; 63], it rare to find more comprehensive empirical investigations that directly compare multiple different industries in the same dataset. Among those studies that do compare industries on behavioral health disorder profiles, often it is on a specific disorder – such as depression or alcohol and drug use – rather than a general profile including both behavioral health and work-related factors. For example, a study of data from 2002-2005 in the state of Pennsylvania in the U.S. analyzed health claims treatment data from over 214,000 workers in 55 different industries [64]. The results showed that the prevalence rate for depression ranged from 7% to 16% by industry and that industries with the highest rates of depression tended to involve workers who experienced frequent or difficult interactions with the public or clients, high levels of stress from job demands and low levels of physical activity. As another example, large sample-size national surveys of workers in the U.S. repeatedly find the lowest rates of heavy alcohol use, illicit drug use and substance use disorders are generally found among workers in the education, health care and social assistance and public administration industries while the highest rates are generally found among workers in the mining, construction and accommodations and food services industries [65].

*1.4. EAP Research Involving Industry*

There is surprisingly little evidence about how EAP counseling and other services are used within different specific industries and even less research available on whether there are differences between industries in EAP services in general and on potential difference by industry for the users of EAP and related outcomes. A small literature of roughly a hundred past studies in EAP provide examples of how and why EAPs are used within different industries. However, only some of this literature is found in peer-reviewed scholarly journals as most of it resides in the "grey literature" consisting of trade journals, conference presentations and industry white papers. Nonetheless, past study examples exist for some industries. These include: the construction and transportation industries (focusing on workplace safety risks and substance use), the healthcare industry (internal EAPs at large hospital systems), the financial industry (often for workplace trauma from violence, robberies and crisis events), the education industry (university faculty and staff assistance programs), the government and municipality sector (federal and state employees with large internal staff of hybrid EA programs) and the municipality subtypes of police and law enforcement workers (for crisis events and related PTSD risks and substance use). For example, most of the classic cost-offset ROI studies for EAP conducted during the 1970s to 1990s [66] were done at specific large employers in the U.S. in the manufacturing industry (Campbell Soup Company, Crestar Bank, General Dynamics, McDonnel Douglas Corporation), the utilities industry (Southern California Edison; Virginia Power), the transportation industry (American Airlines) and the public sector (federal employees, Orange County Public Schools). These and employer case study reports of the EAP service use and outcomes certainly informs our understanding of the different qualitative contexts in which employee assistance is provided and illustrates the wide range of employee demands and workplace challenges it can address. Comparing EAP in different industries from past research also can be difficult when each of various source studies have used different data types and measures that do not allow for direct empirical comparisons to be made between one industry and another. Few research studies have analyzed data for employers in multiple different industries. Several of these past works are now briefly reviewed.

Three older studies from 1992, 1996 and 2001 each collected data from employees or managers in the U.S. working at employers in different industries. Each study focused on the market prevalence rate of having an EAP benefit or not at the company [67-69]. The results found that having an EAP was strongly linked with size of the employer (2 studies) and with the type of industry (all 3 studies). Private sector services and retail trade industries were least likely to sponsor an EAP and the public sector and manufacturing, transportation and communications industries were the most likely to have an EAP. But no other EAP use experiences or outcomes were analyzed in these studies by industry.

A 2002 study collected EAP use related data on 154 employers in Canada with an EAP [70]. Even though 16 industry sectors were identified among the sample, no analyses were provided that compared these industries (i.e., tests of variables such as EAP use rates, profiles of EAP user characteristics or the EAP users' health risks or other outcomes after use).

A 2010 study had program use data from 103 U.S. employer customers of one external EAP vendor [71]. They created four broad groupings of industries derived from 16 more detailed industry types. These groups varied somewhat by how many cases were in the study sample within each group (i.e., 16%, 25%, 29% and 30%). But this study conducted no analyses comparing the industry groups of variables such as EAP user characteristics, levels of health risks and post-use outcomes.

A study in 2011 examined ten years of EAP counseling cases from the external EAP vendor MHN [72]. The sample had over 90,000 cases from 219 different employer organizations in the U.S. It barely examined industry and instead created just two groups of for-profit employers (68% of cases) or not-for-profit employers (32% of cases). Only trivial size differences were found when comparing these two general types by their mix of cases of 15 categories of presenting issue why the EAP was used. There was no opportunity to conduct additional analysis by industry on user clinical or work outcomes as these measures were not included in the study.

Finally, only one research project has meaningfully examined the role of different industries concerning possible differences in the EAP effectiveness of counseling used by employees. The Workplace Outcome Suite (WOS) benchmarking project aggregates case-level EAP use and outcome data from over 50 different EAP internal programs and external vendors from all over the world. Three research studies have been conducted on various sample sizes (as the project has continued to grow with more cases added each year) that directly tested what the mix of cases were by industry and the level of improvement in WOS outcomes from before after use. The WOS outcomes include work absenteeism, work presenteeism, workplace distress, work engagement and overall life satisfaction.

- The first study from 2018 [73] had 10,461 cases with industry identified. It found a mix of the total EAP counseling users being 40% in healthcare, 25% in manufacturing, 23% in government and 12% in technology. Comparisons revealed that the extent of improvement in each outcome was similar between these four industry groups (all trivial statistical effect sizes).
- The second study from 2020 [74] had 19,215 cases with industry identified. It found a case mix of the total EAP counseling users split into seven groups: 26% healthcare, 18% manufacturing, 29% government, 12% technology, 5% education (colleges), 4% higher wage ("white collar", financial, professsional) and 6% lower wage (service, hospilaity, clerical). Comparisons revealed that the extent of improvement in each outcome was generally similar between these seven industry groups (all trivial or very small size statistical effect sizes).
- The third study from 2022 [75] had 25,557 cases with industry identified. It found a case mix of the total EAP counseling users of 16% healthcare, 19% manufacturing, 27% government, 14% technology and 24% education (colleges). Comparisons revealed that the extent of improvement in a composite outcome (created across the five measures on the WOS) was similar between these five industry groups (a trivial statistical effect size).

The series of WOS studies consistently had two results relevant for understanding industry in EAP counseling use. First, when examined in large samples of EAP users (mostly from the U.S.) there was a range of different industries relevant to EAP use including both private and public sector types. Second, industry affiliation had almost no impact on how much the employee users of counseling were able to improve afterwards (and significant changes were documented in each report for all five WOS outcomes for the average user across all industries). What was missing from these studies were analyses comparing the different industry groups on basic aspects of who used the EAP service, why it was used and how it was used. Also, no clinical outcomes were included in the WOS project and thus the different industries could not be compared on risk rates or improvement in clinical outcomes after counseling. The one non-work WOS outcome of "life satisfaction", however, did not show any meaningful differences between industries in the 2018 and 2020 studies.

### *1.5. Research Questions*

The present study was done to fill these gaps in the literature. This study explored how workers in eight major industries used employee assistance program (EAP) clinical services and examined the level of effectiveness of the service on common behavioral health and work-related outcomes within each industry. We used recent national data collected over a 7-year period from over 85,000 users of indivdual counseling or coaching from a single national EAP business in the United States (U.S.). Our very large dataset offered the opportunity to examine several important questions pertaining to the relevance and effectiveness of the service.

For cases at the start of EAP use:

- *RQ1*: Are there differences between industries in **demographic profiles of users**?
- *RQ2*: Are there differences between industries in **EAP service use experience factors**?
- *RQ3*: Are there differences between industries in the **prevalence rates** for behavioral health clinical risk factors or work productivity problems when assessed at the start of EAP use?

For the subgroups of any cases who had longitudinal follow-up data:

- *RQ4*: Are there differences between industries in the **reduction in prevalence rates** for behavioral health clinical risk factors or work productivity problems from before to after EAP use for all cases?

For the subgroups of cases who started EAP use at-risk on an outcome and who had longitudinal follow-up data:

- *RQ5*: Are there differences between industries in how much the **severity** of behavioral health clinical symptoms and hours of lost work productivity for the average clinical case from before to after use of the service?
- *RQ6*: Are there differences between industries in the rate of **recovery from clinical risk status** or **work problem status** from before to after use of the group of EAP for clinical cases?

## II. Methodology

### *2.1. Archival "Real-World" Business Data*

CuraLinc Healthcare is a global external vendor of EAP services, based in the United States. In business since 2008, it has over 4,200 employer customers that offer the EAP as a benefit to over 8 million employees. This company specializes in delivering transformative mental health care by marrying technology and personalized advocacy to engage, empower and support employees throughout their care journey. The intake clinicians, also referred to as Care Advocates, were all licensed, master's or doctorate level educated mental health professionals. During the initial intake assessment, these clinicians were asked to conduct throrough clinical assessments, make expert referrals and collect study outcome data when relevant. The clinicians also provided navigation and consultative follow-ups on all EAP cases. This study is the sixth in a series of projects completed in collaboration with this EAP [26-28,76,77].

Users were made aware of the service as a benefit open to all covered employees through a variety of digital, interpersonal and workplace promotional practices. There was no direct cost to the employees in this study, as access to the EAP was sponsored by their employer. Employees participated voluntarily and were not paid for using the services. The study period spanned 80 months, from April of 2017 through December of 2023, based on the start date of program use. The last case included in the study had a Post use data collection date of January 4 of 2024. The year of use was defined by date of when the employee contacted the program and completed the initial intake assessment (2017 to 2023). The case-level raw data was aggregated into one master dataset and analyzed for the present paper. The full sample included 85,432 clients who worked at 2,679 different employers in the United States.

Some data came from the operational business processes used by the staff and clinicians who provided the services. Part of this process involves recording core aspects of the business customer context, employee demographics and the clinical use experience. For this study we extracted the following information from the operational data system: name of employer/customer, industry, maximum clinical sessions allowed per case in the employer/customer contract, date of first use of the service, date of follow-up survey, employee age (date of birth), employee gender, source of referral to the EAP (self or formal referral from management), type of EAP service used (counseling or mental health coaching), primary clinical issue (alcohol, depression, work and so on) and the modality of how the service was delivered via online video or in-person at the counselor's office.

### *2.2. Counseling Intake, Intervention and Follow-up*

As per the clinical practice model, every employee who requested support from CuraLinc was referred to a clinician with a specialty that matched their presenting issue or concern who also had confirmed appointment availability. All counselors involved in the delivery of the clinical treatment services were fully licensed and trained professionals, with earned master's or doctoral degrees in social work, mental health or other related fields. Clients had a use model determined by their employer that limited the maximum number of counseling sessions allowed per treatment episode. This per case treatment limit ranged as follows: limit of 3 sessions = 9%; 4 sessions = <1%; 5 sessions = 34%), 6 sessions = 26%; 7 sessions < 1%; 8 sessions = 21%; 9 sessions < 1%; 10 sessions = 7%; or unlimited sessions < 1%). A statistical profile of the total sample of EAP users is presented in Table 2. This is one of the largest samples of EAP users ever examined in the literature. It spans seven years of time, starting in year 2017 and with about half of the total sample coming from the most recent year of 2023. Most of the clients were females (62%; males 38%). The age of clients ranged from late teenage years to over 80, but the average client was 40 years old. All users were employees. Other non-employee users of the service were excluded (i.e., spouse, children or other family member of the employee with the EAP benefit).

Most users chose to use a licensed mental health counselor (94%). Only 6% of employees selected a professional coach to address non-clinical issues involving emotional fitness or mild mental health concerns (see our other paper profiling users of coaching [28]). The vast majority (97%) of users were self-referrals into the service, with only 3% being formally referred to use EAP counseling by their manager at work (see our other paper profiling this group [76]). The modality of how the counseling was delivered was split between in-person at the counselor's office (59%) or online video (41%). All coaching services were delivered only via online video.

**Table 2.** *Profile of Cases at Start of EAP Use in Full Sample*

| Factor | *n* count | % of cases |
|---|---|---|
| **Total EAP users** | 85,432 | 100% |
| | | |
| **Year of use** | All | |
| 2017 | 1,929 | 2% |
| 2018 | 4,992 | 6% |
| 2019 | 5,918 | 7% |
| 2020 | 9,171 | 11% |
| 2021 | 9,699 | 11% |
| 2022 | 8,144 | 9% |
| 2023 | 45,579 | 53% |
| | | |
| **Client age** | 82,861 | |
| Under 30 years | 18,346 | 22% |
| 30-39 years | 25,855 | 31% |
| 40-49 years | 19,690 | 24% |
| 50 plus years | 18,970 | 23% |
| Average years (min-max) | 40 (16-86) | |
| | | |
| **Client gender** | 83,350 | |
| Female | 51,788 | 62% |
| Male | 31,562 | 38% |
| | | |
| **EAP service used** | All | |
| Counseling | 80,637 | 94% |
| Coaching | 4,795 | 6% |
| | | |
| **EAP referral source** | All | |
| Self / family / other | 34,107 | 97% |
| Formal management at work | 1,121 | 3% |
| | | |
| **EAP modality of use** | All | |
| In-person office (face-to-face) | 50,492 | 59% |
| Online video / other technology | 34,940 | 41% |
| | | |
| **EAP presenting issue** | All | |
| Mental health | 38,447 | 45% |
| Substance use – drug or alcohol | 3,369 | 4% |
| Stress personal / other | 23,626 | 28% |
| Marital or family relationship | 14,250 | 17% |
| Work stress | 5,470 | 6% |
| | | |
| **EAP use duration (if have post data with specific date)** | 7,635 | |
| 1-30 days | 2,027 | 27% |
| 31-59 days | 3,936 | 52% |
| 60-89 days | 922 | 12% |
| 90 plus days (max 320 days) | 750 | 10% |
| Average: | 49 days | |
| | | |
| **Longitudinal follow-up** | All | |
| Any outcome data – yes | 9,063 | 11% |

The reason given for why these clients wanted to use the service included over 30 different specific kinds of issues. The most common issues for EAP use involved mental health topics (45%; anxiety = 15.4%, depression 16.3%, other emotional/psychological = 15.7%), followed by personal stress and other issues (28%), marriage and family issues (17%), work-related issues (6%); or substance use (4%; involving alcohol 2.9%; drugs 1.0%; or other addiction issues = 0.1%).

Treatment duration data was available only from the subset of users with longitudinal data. Use episode was defined by the difference in days between the date of case open at first session to the date of the longitudinal follow-up to measure the outcomes, minus either 30 days for counseling cases or 7 days for coaching clients. Most clients engaged in multiple counseling treatments or coaching sessions over a two-month period, with the average being 49 days (range 1 to 320; median 44). This 7-week average episode of use was based on a much wider actual range that depended on the clinical severity and needs of the specific client and varied from just one session to multiple sessions lasting over 10 months.

*2.3. Industries Included in Study Sample*

Table 3 shows the mix of cases within the eight major industries included in the study. Each industry group had many different specific employers included in the data, ranging from 77 employers for transportation to 629 employers for manufacturing. The total number of employers across all industries was 2,679.

**Table 3.** *EAP Users by Industry of Employer*

| Industry | Count of employers | Count of EAP cases | % of EAP cases | Details |
|---|---|---|---|---|
| Manufacturing | 629 | 17,389 | 20% | Included manufacturing (*n* = 11,851), energy and utility (*n* = 2,051), skilled trades and "blue collar" industries (*n* = 2,177), construction (*n* = 1,198) and the environment (*n* = 112) |
| Healthcare | 458 | 15,794 | 18% | hospital systems, treatment providers for medical and behavioral health, and healthcare insurance companies |
| Financial & Business | 551 | 11,895 | 14% | Included insurance (*n* = 3,713), finance and banking (*n* = 2,924), employee benefits (*n* = 2,414), business and "white collar" work (*n* = 1,414), real estate and property management (*n* = 1,312) and other (*n* = 118) |
| Transportation | 77 | 10,227 | 12% | Included national and regional airlines, consumer/business goods delivery companies with air and ground transportation, railway companies, regional and local shipping, delivery and trucking companies |
| Restaurant & Retail Trade | 201 | 9,869 | 12% | Included a wide range of national, regional and local companies for restaurants, casinos and retail stores and consumer services |
| Education | 217 | 8,020 | 9% | Majority are K-12 school systems; but 25% cases included community colleges, trade schools, 4-year colleges and universities, and other school support organizations; some private schools and colleges |
| Government & Municipality | 317 | 6,369 | 8% | Included mostly cities, local governments and municipal entities (*n* = 4,080) as well as civic, charitable, and philanthropic service kinds of organizations in the public sector (*n* = 2,289) |
| Technology | 229 | 5,869 | 7% | Included companies in AI, scientific, computer devices and services, internet, telecommunications, mobile phones, security, HR benefits technology |
| Total | 2,679 | 85,432 | 100% | |

The most prevalent industry in the study was the manufacturing which accounted for 1 in every 5 cases in the sample (20% of the total). Employees working in healthcare were the second most common industry in the sample (18% of cases). This group included hospital systems, treatment providers for medical and behavioral health and healthcare insurance companies. This was followed by the financial and business management industry (14%). Employees in the transportation industry represented 12% of the sample. The restaurants and retail trade industry workers accounted for 12% of the sample. Workers in the technology industry represented 7% of all EAP cases. Workers in the education industry accounted for 9% of the sample. Employees in the government and municipality industry group accounted for 8% of all cases.

**Industry Prevalence**. Our national sample of over 85,000 EAP users had a generally similar mix of employees in the eight different industries when compared to the 157 million employees in the full U.S. workforce (see Figure 1). This comparison of the percentages in each industry type is shown visually in Figure 1. This chart reveals similar percentages for 5 of the 8 industries which differed by only 1% or 2%. The EAP study sample had three times as many employees in the transportation industry than the U.S. total (12% > 4%, respectively). The study sample had more than twice as many employees in the financial/business industry than the U.S. total (14% > 6%, respectively). The study also sample had relatively fewer employees in the restaurant and retail industry than the U.S. total workforce (12% < 18%, respectively).

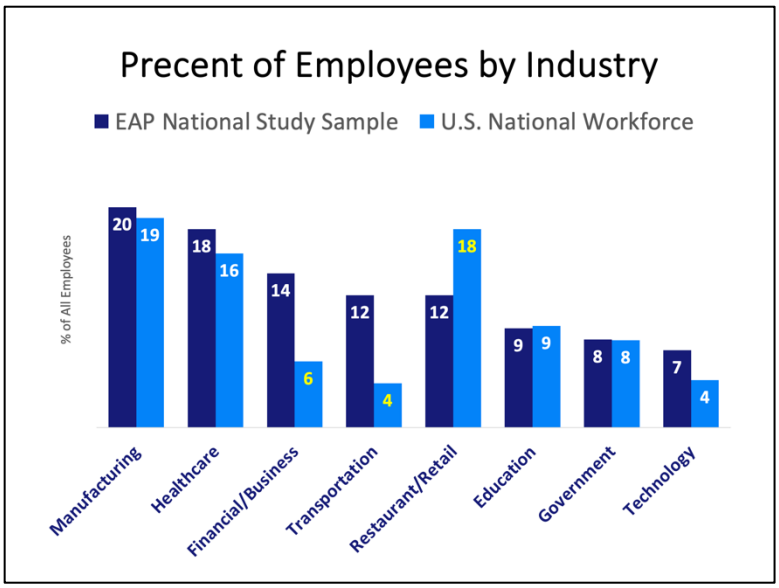


**Figure 1.** *Mix of Industries in Sample Compared to U.S. Total Workforce*

*2.4. Self-Report Outcomes Measures*

During the initial assessment, the multiple self-report measures were collected, either over the telephone or from a brief online survey. After the treatment phase was completed, the EAP conducted individual follow-ups with clients about 30 days after the last clinical session to collect outcome measures and evaluate other quality of use metrics. Standardized measures of behavioral health and work outcomes were assessed using published and validated self-report scales. The health measures included symptoms of anxiety, depression and hazardous alcohol use. The work measures included hours of absenteeism, level of presenteeism and a post hoc derived measure of combined hours of lost work productivity from both missed work and poor performance while working. All of these measures had acceptable levels of psychometric validity and reliability (see Appendix B).

**Mental Health**. The mental health disorders of anxiety and depression severity were measured using The Patient Health Questionnaire 4-item brief scale (PHQ-4) [78,79]: This scale combines two items from the Generalized Anxiety Disorder full 7-item scale (GAD-7) [80-82] and two items from the full Patient Health Questionnaire 9-item scale for depression (PHQ-9) [83,84]. These measures have been used in thousands of research studies and more generally are used every day in healthcare service delivery clinic settings. The instructions state: "Over the last 2 weeks, how often have you been bothered by any of the following problems?" Each item has the same four response options of: (0) *Not at all*; (1) *Several days*; (2) *More than half the days*; and (3) *Nearly every day*.

Anxiety. The two anxiety questions were: "Feeling nervous, anxious or on edge" and "Not being able to stop or control worrying." This scale ranges from 0 to 6. Higher scores on this measure indicate greater anxiety. Clinical risk status for anxiety was categorized as scores of 3 or higher [79]. This scale had excellent measurement reliability as demonstrated by high internal consistency ($\alpha = .90$, $n = 50{,}787$) and acceptable test-retest stability from Pre to Post ($r_{paired} = .55$, $n = 2{,}398$).

Depression. The two depression questions were: "Little interest or pleasure in doing things" and "Feeling down, depressed, or hopeless." This scale ranges from 0 to 6. Higher scores on this measure indicate greater depression. Clinical risk status for depression was categorized as scores of 3 or higher [79]. This scale had excellent measurement reliability as demonstrated by high internal consistency ($\alpha = .86$, $n = 57{,}022$) and acceptable test-retest stability from Pre to Post ($r_{paired} = .54$, $n = 4{,}331$).

**Alcohol Misuse**. Developed by the World Health Organization (WHO), the Alcohol Use Disorders Identification Test is a 10-item scale (AUDIT-10) [85,86]. It also has a brief 3-item version called the AUDIT-C, which features only the first three items of the full scale that emphasize consumption levels [87]. It is scored by adding together the scores for the following questions. Item 1: "How often do you have a drink containing alcohol?" 0 = *never*; 1 = *Monthly or less*; 2 = *2-4 times per month*; 3 = *2-3 times weekly*; 4 = *4 or more times per week*. Item 2: "How many drinks containing alcohol do you have on a typical day of drinking?" 0 = *1 or 2 drinks*; 1 = *3 or 4 drinks*; 2 = *5 or 6 drinks*; 3 = *7 to 9 drinks*; 4 = *10 or more drinks.* Item 3: "How often do you have 5 (for men under age 65) / 4 (for women and men over age 65) or more drinks on one occasion?" 0 = *never*; 1 = *less than monthly*; 2 = *monthly*; 3 = *Weekly*; 4 = *Daily or almost daily*. This last item assesses what is called "binge drinking*."* This scale score can range from 0 to 12 and higher scores indicate more hazardous alcohol use. "At risk" clinical status is defined as a score of 3 or higher for women or 4 or higher for men [86]. A cutoff of 3 or more was used if gender of the client was missing (as most users are typically women; gender was missing for less than 1% of these cases). This scale had excellent measurement reliability as demonstrated by high internal consistency ($\alpha$ = .84 at Pre, $n$ = 51,535) and acceptable test-retest stability from Pre to Post ($r_{paired}$ = .64, $n$ = 3,273).

**Work Absenteeism**. This outcome was assessed using two different measures over the seven-year study period. During Phase 1, the full 5-item Absenteeism Scale from the Workplace Outcome Suite [88]. In Phase 2, the shorter single-item work absenteeism question from the WOS was used [89]. The WOS is the most widely used outcome measure in the EAP field [73-75,91-93].

Work Absenteeism – WOS 5-item scale. Instructions for the five-item scale were: "Please report for the period of the past thirty (30) days, the total number of hours your personal problems: _____." Item 1 "Caused you to miss work altogether." Item 2 "Made you late for work." Item 3 "Caused you to take off early." Item 4 "Pulled you away from your normal work location." And Item 5 "Required you to be on the phone, e-mail or internet while at work." A fill in the blank field is used for each response. Unlike the other outcome scales, the work absenteeism measure did not use a set of statements to be rated, rather it asked for specific hours of missed work to be provided in five behavioral contexts and each context is added up for total number of hours of missed work. Thus, the internal measurement reliability of the WOS work absence scale was not relevant to assess.

Work Absenteeism – WOS single item scale. The brief version of the WOS has a single question for absenteeism. Instructions were: "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." A fill in the blank field is used for the response of a specific number of hours. The internal consistency measurement reliability of a single item was not relevant to assess.

Work Absenteeism – Hours. The absence data from clients in Phase 1 came from the original WOS scale (using all of the 5 items) and the absence data from clients in Phase 2 came from the revised WOS scale with a single item.

Work Absenteeism – Valid Cases. Based on past research using the WOS [91-93] we excluded cases who reported 160+ hours missed and thus were not actively working (assuming a full-time schedule of 40 hours of scheduled work time per week for four weeks in a month). This excluded only about 1% of all cases with this measure.

Work Absenteeism – Problem Status. As other research shows the typical employee in the U.S. misses only about 3 hours per month of work due to health-related issues (see review in [92]) problem status for work absenteeism was defined as 4 or more hours of absence (4-159 hours).

**Work Presenteeism**. This outcome was assessed using two different measures over the study period. During Phase 1, the Stanford Presenteeism Scale was used while during Phase 2, the shorter single-item work presenteeism question from the WOS was used.

Work Presenteeism – Stanford Presenteeism Scale 6-item. Originally a 32-item version, the brief 6-item version of the Stanford Presenteeism Scale (SPS-6) is a widely used scale for assessing the impact of health problems on work productivity of employees [94-96]. It consists of two dimensions, with one factor on completing work (items 2, 5, and 6) and a second factor on avoiding distraction while working (items 1, 3, and 4). Sample item theme 1: "At work I was able to focus on achieving my goals despite my depression, stress, or anxiety" (reversed). Sample item theme 2: "I felt hopeless about finishing certain work tasks due to my depression, stress or anxiety." It has response options of: (1) *Strongly disagree*; (2) *Somewhat disagree*; (3) *Uncertain*; (4) *Somewhat agree*; and (5) *Strongly agree*. The items are answered for the time period of the past month. On the original scale three items are reverse scored (items 1, 3, and 4). The SPS-6 score is the sum of the three raw scores and the three reversed scores (range 6–30). This scale had excellent measurement reliability as demonstrated by high internal consistency of responses within person across the set of items ($\alpha$ = .94, $n$ = 27,696 at Pre) and acceptable test-retest stability ($r_{paired}$ = .42, $n$ = 3,287).

The creators of this scale defined presenteeism as a positive aspect of work productivity [94]: "A decrease in presenteeism can hurt productivity in a way similar to an increase in absenteeism" (p .14). However, most researchers in this area define the concept of presenteeism in the opposite direction and negatively as a problem of not being psychologically present enough while working to perform

properly [97,98]. For example, Cooper and Dewe [99] defined it as "lost productivity that occurs when employees come to work ill and perform below par because of that illness" (p. 522). Therefore, to better align the interpretation of the SPS-6 scores with the dominant deficit-themed definition of presenteeism (and how it is interpreted on the WOS presenteeism measure – see below), the scale total score was reversed so that a higher score indicated greater presenteeism (i.e., worse performance and less focus while at work). For example, after reverse scoring of the total scale score, a score of 30 became 6, a score of 29 became 7, and so on.

Work Presenteeism – WOS single item. The single-item version of the Presenteeism Scale from the Workplace Outcome Suite was used in Phase 2 [89]. Instructions were: The following statement reflects what you may do or feel on the job or at home. Please indicate the degree to which you agree with each of the statements for the past thirty (30) days. Item: "My personal problems kept me from concentrating on my work." It has response options of: (1) *Strongly disagree*; (2) *Somewhat disagree*; (3) *Neutral*; (4) *Somewhat agree*; and (5) *Strongly agree*.

Work Presenteeism – Problem Status. To allow us to conduct a test of the change in "at-risk status" on work presenteeism for EAP users (like for the clinical outcomes), following past research on the WOS [91-93], "problem" status for work presenteeism was defined as a rating of 4 or 5 (somewhat agree or strongly agree). For the Stanford Presenteeism Scale data, we split the distribution of SPS-6 scores into two groups based on a cutoff score on the average rating for the SPS-6 (i.e., the scale summary score of 6 to 30) at 21 through 30 that was in the high or very high presenteeism range as having a "problem" with work presenteeism. This cutoff was chosen to be equivalent to the range of the "somewhat agree" rating 4 or "strongly agree" rating of 5 on the 1-5 rating scale for the WOS presenteeism item.

**Work Productivity – Problem Status**. The work absenteeism and presenteeism measures were combined into a single metric for the analyses in the work problem status. First problem status was determined for each case as described above for each measure in each phase of data collection. Next, the problem status variable for work absenteeism (0 = no problem; 1 = problem) and for work presenteeism (0 = no problem; 1 = problem) were added together. This summary score result was 0 (no problem on either measure), 1 for having a problem on one work outcome or 2 for having problems on both work outcomes. A work productivity problem was defined as a score of 1 or 2 on this summary variable.

**Work Productivity – Estimated Hours of Lost Productive Time**. The work absenteeism and presenteeism measures were also combined into a single metric useful for conducting analyses in the severity of the work productivity problem. Following standard research practices established in the EAP field for this approach [91-93,100], an estimated specific number of hours of lost work productivity per case per month was created. The specific levels of productive time (on a 0-100% scale) assigned to each rating level of the two presenteeism measures is detailed in Appendix B, Table B3. A sample calculation of LPT for one case is shown in Table B4.

### *2.5. Phases of Data Collection for Self-Report Outcomes Measures*

The outcomes were collected in two phases (see Appendix B). During Phase 1 – which lasted from 2017 through July of 2021 – clinical symptom outcome data was collected at Pre for cases that had a relevant clinical issue (i.e., the case had either depression or alcohol as a primary or secondary issue) whereas the work outcome data at Pre was collected for more cases regardless of treatment issue. The Post use data was collected routinely for those cases who had the same outcome(s) collected at the start of the program use. Not all relevant EAP cases with depression or alcohol issues were invited to complete the depression or alcohol clinical symptom measure and not all users completed the work outcome measures. This inconsistency in the data collection was because many employees had limited time available at the intake session or were not interested in engaging in the outcome measurement process.

During Phase 2 – which lasted from August of 2021 through the end of 2023 – shorter measures were used for depression, anxiety, alcohol misuse, work absenteeism and work presenteeism. Both measures of work absenteeism both had similar instructions, a fill-in-the-blank response format and the same potential range of hours absence. The method of scoring on the two work presenteeism measures in Phase 1 and Phase 2 was standardized to have the same meaning and scale score range (see Appendix B). In addition, the entire set of five outcome measures were routinely collected for as many cases as possible at Pre during Phase 2. Thus, Phase 2 period data offers a more representative sample of users with much wider variation in severity levels of the clinical risks. The percentage of EAP user cases in each industry differed by the phase of data collection (see Appendix B, Table B5). Because of these timing differences, relevant tests included a statistical covariate for the data phase.

### *2.6. Longitudinal Follow-up*

The criteria for inclusion in the longitudinal group for each outcome was: **a**) having the valid score collected at Pre (the start of the counseling); **b**) being at-risk status on that measure at Pre; and **c**) having a valid score at the follow-up for the same measure. The obtained longitudinal paired data sample size for at-risk cases varied for each outcome measure and represented from 5% to 13% of the

total relevant starting sample sizes for cases at-risk on the same measure (see below). Across all outcomes, 9,063 cases had follow-up data (10.6%). It is typical in EAP research to engage about 10% of counseling cases at a longitudinal follow-up after use [88-93,100].

- Anxiety at-risk cases: *n* = 1,150 paired Pre and Post data out of 21,768 at Pre = 5.2% longitudinal test group
- Depression at-risk cases: *n* = 1,136 paired Pre and Post data out of 15,415 at Pre = 8.5% longitudinal test group
- Alcohol at-risk cases: *n* = 788 paired Pre and Post data out of 6,025 at Pre = 13.1% longitudinal test group
- Work productivity problem cases: *n* = 3,636 paired Pre and Post data out of 38,140 at Pre = 9.5% longitudinal test group

Although the number of cases available for each outcome with longitudinal data was large by absolute standards (ranging from 788 to 3,636 EAP users), these groups were a small segment of the total stating samples. Therefore, preliminary statistical analyses were conducted to verify the representativeness of the longitudinal subsamples for each outcome measure. Overall, the results indicated that the cases in the longitudinal samples for each outcome had the same level of severity on the outcome of interest when starting treatment and had the same general profile for almost all of the employee demographic factors, clinical use factors and employer context factors as the cases who did not engage in the follow-up process and had only data at Pre. Thus, the test results support the representativeness of the longitudinal samples. Some differences were found such that that longitudinal subsamples for some outcomes had a higher percentage of cases who were formally referred to the EAP by their manager at work. To account for this factor, tests of the changes in outcomes from before to after EAP use used a covariate factor of referral type (formal management referral = 1 and self-referral = 0) to statistically control for this influence and to yield adjusted mean scores for the total sample and each industry group.

*2.6. Data Analysis Plan*

All analyses were conducted using the Statistical Package for the Social Sciences (SPSS) Version 29. Analyses with categorical variables were conducted with chi-square ($\chi^2$) non-parametric test procedures. For the sub-groups of cases at-risk for depression, at-risk for anxiety, at-risk for alcohol misuse, or work productivity problem status, we determined the percentage of cases who had recovered at post to no longer be at-risk or to not have the work problem anymore. The samples and timing of the data needed to answer each research question are summarized in Table 4. All tests comparing the industry groups on clinical and work outcomes collected in both phases of the study data collection used adjusted scores on the outcomes to statistically control for possible differences associated with the study phase of data collection and associated historical, methodological, outcome measures and longitudinal participation rates.

**Table 4.** *Relevant Samples and Timing of Study Data Used to Test Research Questions*

| Part | Research question | Sample relevant to question | Timing of data in analysis | Statistical controls in test and adjusted scores |
|---|---|---|---|---|
| 1 | Industry Profiles | Total sample of all cases | Pre – at Start of EAP use | Not applicable |
| 2 | Prevalence of Risks | Total sample from only Phase 2 of study for 3 clinical measures and total sample from all years for work measures | Pre – at Start of EAP use | Not applicable |
| 3 | Reduction in Risk Prevalence | Total sample from only Phase 2 of study for 3 clinical measures and total sample from all years for work measures with valid longitudinal data on outcome | Pre and Post Longitudinal | Yes = phase of data collection and referral type |
| 4 | Reduction in Risk Severity | Clinical sub-samples for each risk measure from all years but only for cases with valid longitudinal data | Pre and Post Longitudinal | Yes = phase of data collection and referral type |
| 5 | Recovery from Risk Status | Clinical sub-samples for each risk measure from all years but only for cases with valid longitudinal data | Pre and Post Longitudinal | Yes = phase of data collection and referral type |

*2.7. Statistical Power, Effect Sizes and Criteria for Interpretation of Findings*

With different sample sizes for each outcome, we assessed the power to detect a particular finding as being statistically significant [101]. The level of power to detect a small size effect at $p < .05$ chance level was very high in this study at .99. To allow for reasonable comparison of the findings from outcomes involving different sample sizes, we calculated the statistical effect size for most results. The partial eta squared ($\eta_p^2$) effect size statistic 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 [102]: large size effect is $\eta_p^2 = .14$ or greater; medium size effect is $\eta_p^2 = .06$ to .13; small size effect is $\eta_p^2 = .01$ to .05; and trivial effect is $\eta_p^2$ less than .01. Meaningful findings in this study were defined as having both a statistically significant result and at least a small size statistical effect.

*2.8. Ethical Considerations*

The privacy of users was protected by having all program use and survey data deidentified before being shared with the independent consultant (first author) who conducted all statistical analyses. As this was an applied study of archival anonymized data collected from routine use of the service, additional informed consent from individual participants beyond their initial consent agreement in terms of use of the EAP service was not required. All data was collected as part of the normal business practices and not for a separate specific research project. Project approval from a university internal review board was not required. The use and analysis of archival operational data in this manner for applied research is consistent with the published ethical guidelines of the American Psychological Association [103]. All counselors involved in the delivery of the clinical treatment services were fully licensed and trained professionals. The real-world conditions for this study are like other applied studies published in peer-review journals that have examined the effectiveness of commercial mental health support programs [73,100,104-106].

## III. Results

*3.1. PART 1: Descriptive Profile of 8 Industries*

**EAP User Age**. Demographic factors among EAP clients were tested for possible differences between the employees working in different industries (see Table 5 and Figure 2). The age of client did not have any meaningful difference by industry. The youngest average age of 37 years was found for EAP users in the restaurant and retail industry with all of the other groups much closer to each other and ranging from age 39 to 41 years. Note this pattern for age in EAP users closely matches the average age by industry profile data in Table 1 for U.S. total workforce.

**EAP User Gender**. Gender of the EAP user had a medium size statistical effect for differences by industry group. In the total sample, the majority of clients who used the EAP were females and this gender mix was also true in 7 of the 8 industries. But this user characteristic ranged considerably by industry, from the healthcare industry being 80% women to the manufacturing industry being 66% men. Note this pattern of industry differences in EAP users matches the same rank ordering of industries by gender mix in Table 1 for U.S. total workforce.

**Table 5.** *Industries Compared on Client Demographic Factors*

| *Client Demographic Factors* | **Industry Type** | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Manufact | Transport | Tech | Rest&RT | Gov | Financial | Educ | Health |
| **Age of user** | 17,128 | 10,077 | 5,135 | 9,641 | 6,255 | 11,495 | 7,874 | 15,256 |
| Years Mean (SD) | 40.1 | 40.9 | 39.2 | 37.0 | 40.4 | 40.6 | 39.1 | 40.1 |
| | $F(7,82860) = 107.69$, $p < .001$, $\eta_p^2 = .009$ trivial size effect | | | | | | | |
| **Gender of user** | 17,389 | 10,227 | 5,869 | 9,869 | 6,369 | 11,895 | 8,020 | 15,794 |
| Female % | 44.1 | 57.4 | 57.1 | 59.7 | 65.2 | 66.0 | 71.6 | 79.5 |
| Male % | **55.9** | **42.6** | **42.9** | **40.3** | **34.8** | **34.0** | **28.4** | **20.5** |
| | $X^2(7,83350) = 4905.46$, $p < .001$, $\eta_p^2 = .059$ **medium size effect** | | | | | | | |

*Note*: The number of cases within each industry are listed first for each factor tested. Manufact = Manufacturing and Distribution; Transport = Transportation; Tech = Technology; Rest&RT = Restaurant and Retail Trade; Gov = Government and Municipality; Financial = Financial and Business; Educ = Education; Health = Healthcare.

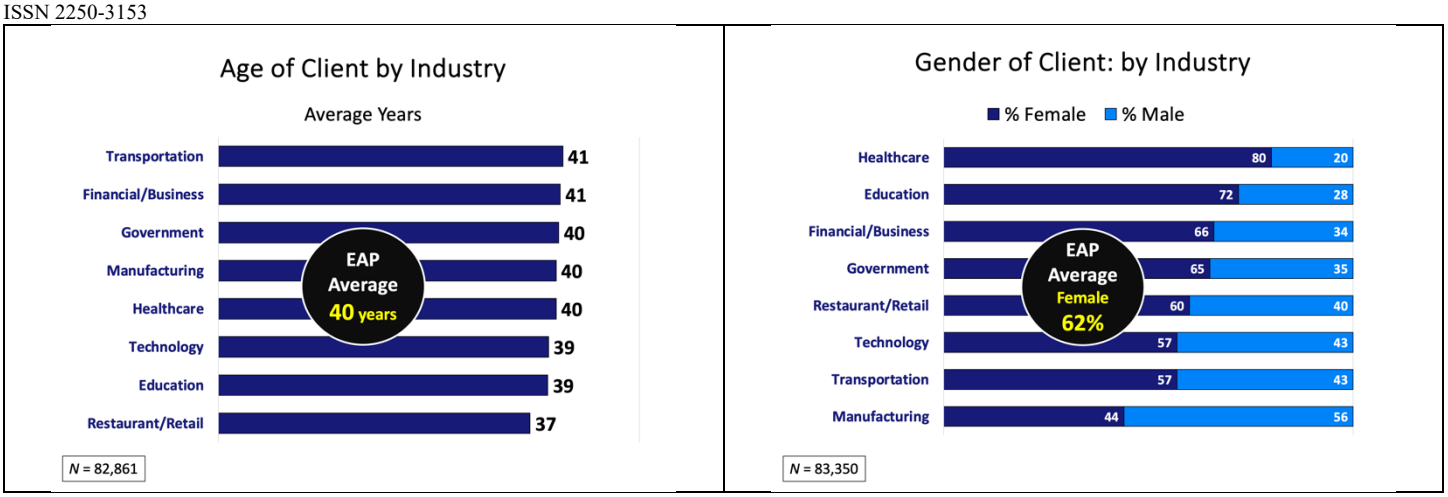


**Figure 2.** *Client Age and Gender in Total Sample and by Industry of Employer*

**EAP Use Counselor or Coach.** The vast majority of employees using the EAP had sought support from a licensed counselor with only 6% choosing a professional coach instead. The use of coaches from the EAP ranged from a low of 4% of the employees working in government to a high of 8% of employees working in education. However, this range in the proportion of counselor vs. coach service types by industry was not a statistically meaningful test result (see Table 6 and Figure 3).

**Table 6.** *Industries Compared on Client Demographic and EAP Service Use Factors*

| | **Industry Type** | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| *Service Use Factors* | Manufact | Transport | Tech | Rest&RT | Gov | Financial | Educ | Health |
| **EAP service type** | 17,389 | 10,227 | 5,449 | 9,869 | 6,369 | 11,895 | 8,020 | 15,794 |
| Counseling % | 94.9 | 94.6 | 92.8 | 94.1 | 96.2 | 94.9 | 92.4 | 94.3 |
| Coaching % | 5.1 | 5.4 | 7.2 | 5.9 | 3.8 | 5.1 | 7.6 | 5.7 |
| | $X^2(7,85432) = 147.50$, $p < .001$, $\eta_p^2 < .001$ trivial size effect | | | | | | | |
| **EAP referral type** | 17,389 | 10,227 | 5,869 | 9,578 | 5,996 | 11,726 | 7,970 | 15,535 |
| Self % | 95.0 | 98.4 | 99.1 | 97.1 | 94.1 | 98.6 | 99.4 | 98.4 |
| Formal manager % | **5.0** | **1.6** | **0.9** | **2.9** | **5.9** | **1.4** | **0.6** | **1.6** |
| | $X^2(7,83350) = 1024.75$, $p < .001$, $\eta_p^2 = .012$ **small size effect** | | | | | | | |
| **EAP modality** | 17,389 | 10,227 | 5,869 | 9,869 | 6,369 | 11,895 | 8,020 | 15,794 |
| In-person office % | 63.1 | 55.6 | 60.7 | 56.3 | 67.1 | 56.3 | 59.2 | 60.5 |
| Online video % | 36.9 | 44.4 | 39.3 | 43.7 | 32.9 | 43.7 | 40.8 | 39.5 |
| | $X^2(7,85431) = 322.54$, $p < .001$, $\eta_p^2 = .004$ trivial size effect | | | | | | | |
| **EAP duration use** | 1,972 | 552 | 623 | 721 | 708 | 958 | 811 | 1,290 |
| Days of use Mean | 47.7 | 50.3 | 47.4 | 46.0 | 51.1 | 48.6 | 48.3 | 53.9 |
| (SD) | (35.6) | (30.6) | (31.4) | (31.7) | (38.3) | (34.5) | (33.3) | (42.5) |
| | $F(7,7634) = 5.23$, $p < .001$, $\eta_p^2 = .005$ trivial size effect | | | | | | | |

*Note*: The number of cases within each industry are listed first for each factor tested. Manufact = Manufacturing and Distribution; Transport = Transportation; Tech = Technology; Rest&RT = Restaurant and Retail Trade; Gov = Government and Municipality; Financial = Financial and Business; Educ = Education; Health = Healthcare.

**EAP Use Referral Type.** The vast majority of employees using the EAP were self-referrals (97%) with only 3% of all cases being formally referred to use counseling by their manager at work. Formal referrals into the EAP ranged from a low of 0.6% of the employees working in education to a high of 5.9% of the employees working in government. This range by industry was a meaningful difference, yet it was only a small size statistical effect (see Table 6 and Figure 3).

**EAP Use Modality**. Participating in counseling face-to-face in a local office setting ranged from a low of 56% of the cases who were working in the transportation industry to a high of 67% of cases who were working in the government. Conversely, the proportion of cases using online technology ranged from 33% of employees in government to 44% of employees in the transportation industry.

However, this range in the mix of which access modality was chosen by the client when compared by industry was not a meaningful statistical effect (see Table 6 and Figure 3). Note that coaching services were only provided using online video.

**EAP Use Episode Duration.** The number of days, on average, for the EAP treatment episode when compared by industry was not a meaningful statistical effect (see Table 6 and Figure 3). The average per case duration of EAP treatment episode ranged from 46 days in the restaurant and retail trade group to 54 days in the healthcare industry.

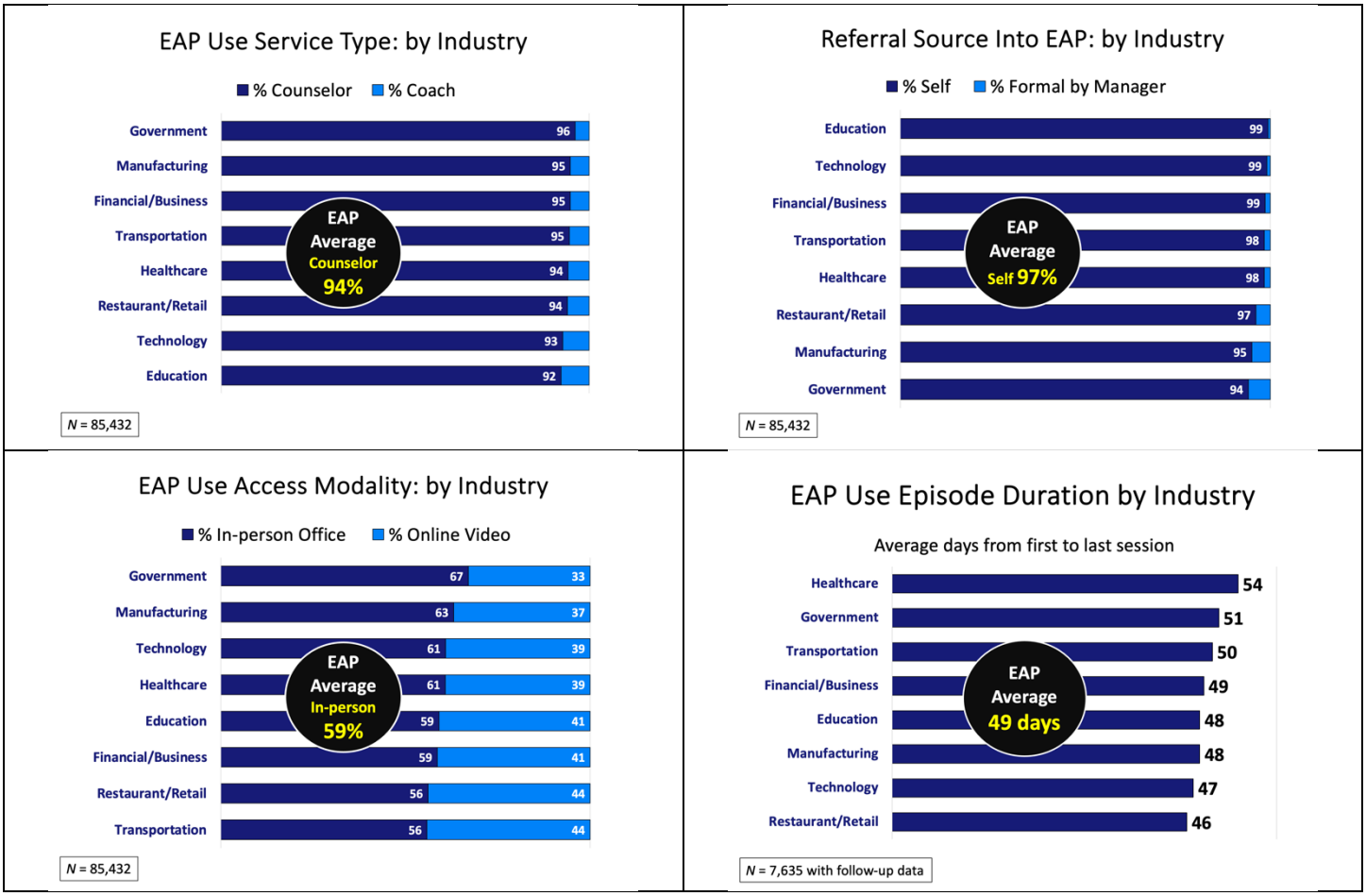


**Figure 3.** *EAP Service Use factors in Total Sample and by Industry of Employer*

**EAP Use Presenting Issue.** The mix of five general types of presenting issues among EAP users was compared by industry group (see Table 7). The test result was not a meaningful statistical effect ($X^2[28,85432] = 1,878.71$, $p < .001$, $\eta_p^2 = .002$ trivial size effect). However, for descriptive purposes Figure 4 shows the range by industry group for each of the five major types of presenting issues.

**Table 7.** *Industries Compared on Presenting Issues*

| | Industry Type | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Manufact | Transport | Tech | Rest&RT | Gov | Financial | Educ | Health |
| *n* cases: | 17,389 | 10,227 | 5,449 | 9,869 | 6,369 | 11,895 | 8,020 | 15,794 |
| **Issue Type:** | % | % | % | % | % | % | % | % |
| Mental health | 43.0 | 41.0 | 43.3 | 47.8 | 43.9 | 44.8 | 49.3 | 47.1 |
| Alcohol or drug | 7.7 | 3.5 | 3.9 | 4.6 | 3.0 | 3.2 | 1.9 | 2.2 |
| Stress / personal | 23.8 | 34.2 | 27.7 | 29.3 | 23.7 | 28.6 | 27.3 | 27.5 |
| Marriage / family | 20.2 | 16.3 | 17.0 | 12.8 | 18.8 | 17.1 | 14.6 | 16.3 |
| Work occupational | 5.3 | 5.1 | 6.4 | 5.5 | 10.5 | 6.2 | 6.9 | 7.0 |

*Note*: Manufact = Manufacturing and Distribution; Transport = Transportation; Tech = Technology; Rest&RT = Restaurant and Retail Trade; Gov = Government and Municipality; Financial = Financial and Business; Educ = Education; Health = Healthcare.

The most defining issue type for EAP was mental health and this ranged by industry with the highest at 49% of cases in education to the lowest at 41% in transportation. The next most common issue type was stress and personal life problems with the highest at 34% for transportation to a low of 24% for government workers. The issue type of problems with marriage or family ranged from a high of 20% of cases in the manufacturing industry to a low of 13% for workers in restaurants and retail trade (also the youngest average age as well and thus less relevant to this issue type). The issue type of problems with work or other occupational stressors ranged from the high of 11% of cases in government or municipal jobs to a low of 5% for transportation. Finally, the least common issue type involving substance abuse and addictions ranged from a high of 8% of cases in the manufacturing industry to 2% of the workers in schools and college settings. Chi-square tests conducted separately within each of these five major categories of presenting issue (i.e., substance use) also had only trivial effect size results.

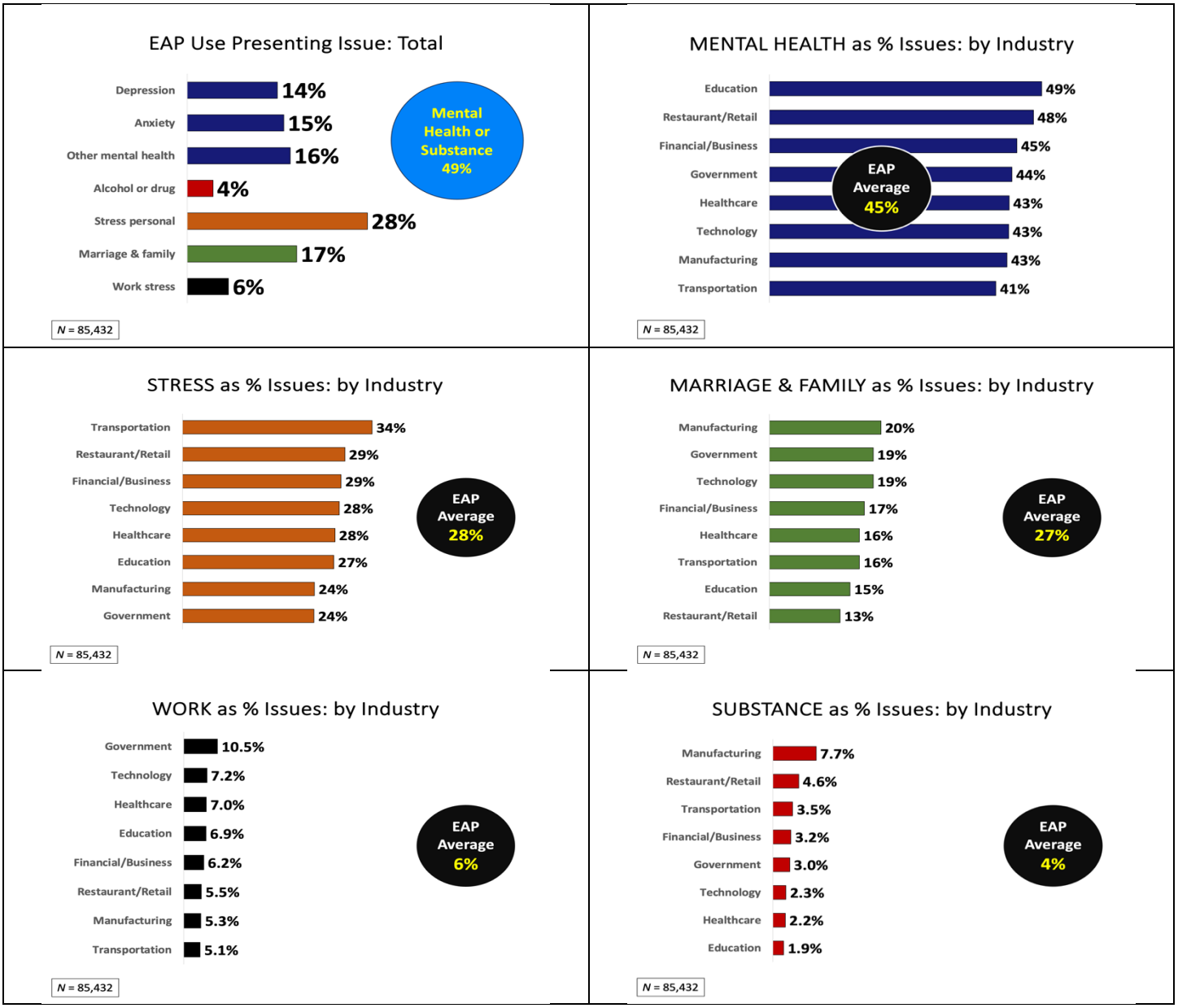


**Figure 4.** *Major Categories of Presenting Issues in Total Sample and by Industry of Employer*

### *3.2. PART 2: Prevalence of Clinical Risks at Start of EAP Use*

This part examines the data for research questions 3 and 4 for all four outcomes. Key results are presented in Table 8 and Figure 5.

**Anxiety: Prevalence of Clinical Risk**. Among the over 50,000 cases with data on the GAD-2 measure at Pre during Phase 2 of data collection (which involved almost all EAP users during that period), 42.9% met the criteria for clinical anxiety disorder when starting EAP counseling or coaching. Thus, more than 4 of every 10 cases had moderate to severe symptoms of clinical anxiety when starting care (see Table 8 and Figure 5). Yet, 15.4% of all cases sought support from the EAP to address an anxiety issue. The risk rate for clinical anxiety disorder was about three times higher than the number of employees who sought support from the EAP for anxiety. These findings indicate that clinical anxiety symptoms were frequently occurring in the context of other kinds of presenting issues that were judged as more important to the EAP user as a goal for their treatment. These findings also emphasize how anxiety overlaps with other behavioral health and work problems (see correlational results in Appendix B).

The prevalence rate for clinical anxiety disorder risk among users within each industry ranged from a low of 40% of workers in government to a high of 47% of workers in the restaurant and retail trade industry group. Differences in the prevalence risk rates for anxiety within each industry did not represent a statistically meaningful finding (see Table 8). Anxiety risk by industry is possibly influenced by client age, as younger age industries had slightly more workers with an anxiety risk (ex. Restaurants and retail trade had the highest prevalence rate for anxiety risk and also the lowest average client age).

Among the much smaller subsample of 2,929 cases with longitudinal data on anxiety symptoms, Table 9 shows the risk rates within each industry group at Pre and at Post. Each of the eight industries has a substantial change over time in the reduction of the risk rate for anxiety among all workers who used the EAP. The statistical test result also found that this rate of risk reduction among all cases occurred to similar extent within each industry.

**Table 8.** *Industries Compared on Risk Rate Prevalence at Start of Counseling for Clinical and Work Outcomes*

| | | Industry Type | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Outcome** | | Manu | Tran | Tech | R&RT | Gov | Finan | Educ | Health | Total |
| **Anxiety** | *n* cases | 8,592 | 9,560 | 3,243 | 7,381 | 2,879 | 6,993 | 3,627 | 8,512 | 50,787 |
| | At-risk at Pre % | 41.2 | 42.2 | 40.6 | 46.5 | 40.2 | 42.9 | 43.6 | 43.5 | 42.9 |
| | Industry differences: | $X^2(7,50787) = 68.64$, $p < .001$, $\eta_p^2 = .001$ trivial size effect | | | | | | | | |
| **Depression** | *n* cases | 8,592 | 9,560 | 3,243 | 7,381 | 2,879 | 6,993 | 3,627 | 8,512 | 50,787 |
| | At-risk at Pre % | 29.1 | 31.6 | 27.4 | 35.7 | 26.7 | 29.1 | 28.7 | 29.6 | 30.3 |
| | Industry differences: | $X^2(7,50787) = 157.63$, $p < .001$, $\eta_p^2 = .003$ trivial size effect | | | | | | | | |
| **Alcohol** | *n* cases | 8,267 | 9,225 | 3,117 | 7,101 | 2,770 | 6,723 | 3,521 | 8,197 | 48,921 |
| | At-risk at Pre % | 14.9 | 11.6 | 11.9 | 14.6 | 10.1 | 11.6 | 10.8 | 11.6 | 12.3 |
| | Industry differences: | $X^2(7,48921) = 139.47$, $p < .001$, $\eta_p^2 = .001$ trivial size effect | | | | | | | | |
| **Work** | *n* cases | 15,117 | 10,012 | 5,244 | 9,250 | 5,649 | 10,618 | 6,986 | 13,717 | 76,593 |
| **Productivity** | At-risk at Pre % | 50.2 | 47.7 | 47.3 | 55.4 | 48.7 | 49.4 | 48.1 | 49.6 | 49.8 |
| | Industry differences: | $F(7,76592) = 22.83$, $p < .001$, $\eta_p^2 = .002$ trivial size effect | | | | | | | | |

*Note*: Manu = Manufacturing and Blue Collar; Tran = Transportation; Tech = Technology; R&RT = Restaurant and Retail Trade; Gov = Government and Municipality; Finan = Financial and Business; Educ = Education; Health = Healthcare. Test 2: Percentages on outcomes for industry groups at Pre and Post adjusted by referral type and phase of data collection. $\eta_p^2$ = partial eta squared statistical effect size.

**Depression: Prevalence of Clinical Risk**. Among the over 50,000 cases with data on the PHQ-2 measure at Pre during Phase 2 of data collection (which involved almost all EAP users during that period), 30% met the criteria for clinical depression disorder when starting EAP counseling. Thus, 3 of every 10 cases had moderate to severe symptoms of clinical depression when starting care (see Table 8 and Figure 5). Other data reveals 16.3% of all cases sought support from the EAP to address a depression issue. The risk rate for clinical depression was about double that of the rate of employees who used the EAP for a presenting issue of depression. These findings indicate that clinical depression symptoms were frequently occurring in the context of other kinds of presenting issues that were judged as more important to the EAP user as a goal for their treatment. These findings also emphasize how depression can co-occur with other behavioral health and work problems (see correlational results in Appendix B).

The prevalence rate for clinical depression disorder risk among EAP users within each industry ranged from 27% of workers in technology industry to 36% of workers in the restaurant and retail trade industry group. Differences in their prevalence rates of clinical depression risk among cases between all eight industry groups was not a statistically meaningful finding (see Table 8). Depression risk by industry is influenced by client age as younger age industries have slightly more depression (see restaurants and retail trade as the industry highest in depression risk and also lowest in average age of clients).

Among the much smaller subsample of 2,929 cases with longitudinal data on depression symptoms, Table 9 shows the risk rates within each industry group at Pre and at Post. Each of the eight industries has a substantial change over time in the reduction of the risk rate for depression among all workers who used the EAP. The statistical test result also found that this rate of risk reduction among all cases occurred to similar extent within each industry.

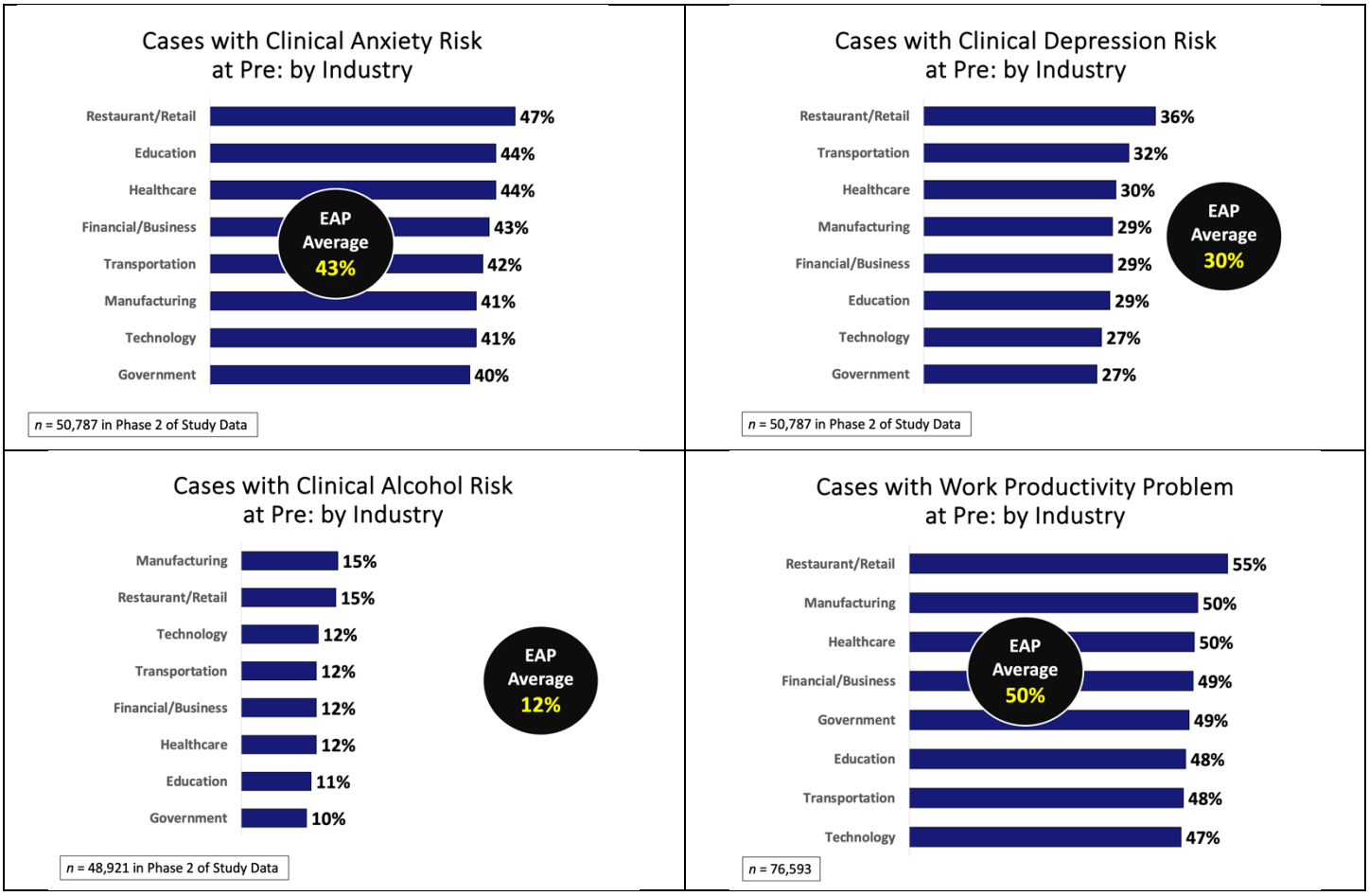


**Figure 5.** *Prevalence of Clinical Risk Status for Health and Work Outcomes in Total Sample and by Industry of Employer*

**Alcohol: Prevalence of Clinical Risk**. Among the over 48,000 cases with data on both the AUDIT-C measure and gender at Pre during Phase 2 of the study, 12.3% meet the criteria for clinically hazardous use of alcohol when starting EAP use. Thus, about 1 of every 8 cases were misusing alcohol before the start of EAP service (see Table 8 and Figure 5). Other data revealed only 2.9% of all cases sought support from the EAP to address an alcohol-related issue. It appears that the risk rate for clinical alcohol misuse was four times higher than the number of employees seeking support from the EAP for an alcohol-related issue. These findings indicate that alcohol issues were substantially under-represented as a goal for treatment by these users of the EAP. Compared to the mental health risk factors, alcohol misuse overlapped much less with other health and work problems (see correlational results in Appendix B).

The prevalence rate for clinical alcohol disorder risk among EAP users within each industry ranged from 10.1% of workers in government to 14.9% of workers in manufacturing. The differences by industry in the alcohol risk rates among EAP users was not a statistically meaningful finding (see Table 8). However, alcohol risk by industry is influenced by client age and gender profiles among EAP uses, as younger age industries had slightly higher alcohol risk rates and cases with alcohol as presenting issue (see restaurants and retail trade industry) and men had more alcohol risk rates and more alcohol as their presenting issue (see manufacturing industry, which had the highest percentage of men in their workforce).

Among the much smaller subsample of 2,928 cases with longitudinal data on hazardous alcohol use, Table 9 shows the risk rates within each industry group at Pre and at Post. Each of the eight industries has a substantial change over time in the reduction of the risk rate for alcohol misuse. The statistical test result also found that this rate of risk reduction among all cases within each industry occurred to similar extent.

**Table 9.** *Industries Compared on Reduction in Risk Rates of Clinical and Work Outcomes from Pre to Post*

| Outcome | | Industry Type | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Manu | Tran | Tech | R&RT | Gov | Finan | Educ | Health | Total |
| **Anxiety** | *n* cases | 629 | 434 | 211 | 387 | 230 | 344 | 235 | 468 | 2,929 |
| | At-risk at Pre % | 34.9 | 37.0 | 40.1 | 43.2 | 32.9 | 43.6 | 37.3 | 43.8 | 39.1 |
| | At-risk at Post % | 8.2 | 11.3 | 6.8 | 10.4 | 7.4 | 10.7 | 8.8 | 12.0 | 9.5 |
| | Industry differences | $F(7,2931) = 1.82$, $p = .08$, $\eta_p^2 = .004$ trivial size effect | | | | | | | | |
| **Depression** | *n* cases | 629 | 434 | 211 | 387 | 230 | 344 | 235 | 468 | 2,929 |
| | At-risk at Pre % | 24.5 | 23.7 | 23.9 | 33.6 | 17.9 | 25.2 | 22.3 | 24.8 | 24.5 |
| | At-risk at Post % | 3.1 | 3.3 | 0.4 | 5.7 | 5.0 | 5.4 | 5.3 | 6.3 | 4.3 |
| | Industry differences | $F(7,2931) = 3.31$, $p = .002$, $\eta_p^2 = .008$ trivial size effect | | | | | | | | |
| **Alcohol** | *n* cases | 605 | 422 | 206 | 367 | 213 | 336 | 230 | 449 | 2,928 |
| | At-risk at Pre % | 16.7 | 13.3 | 13.6 | 13.5 | 3.9 | 17.7 | 16.5 | 17.6 | 14.1 |
| | At-risk at Post % | 3.9 | 2.8 | 1.4 | 2.5 | 1.7 | 3.5 | 3.8 | 2.2 | 2.7 |
| | Industry differences | $F(7,2819) = 3.61$, $p < .001$, $\eta_p^2 = .009$ trivial size effect | | | | | | | | |
| **Work Productivity** | *n* cases | 1,783 | 539 | 564 | 690 | 614 | 837 | 721 | 1,117 | 6,865 |
| | At-risk at Pre % | 54.1 | 51.2 | 47.8 | 55.7 | 47.4 | 52.8 | 52.8 | 56.2 | 52.2 |
| | At-risk at Post % | 6.9 | 7.1 | 7.0 | 8.9 | 9.0 | 7.4 | 8.2 | 6.8 | 7.7 |
| | Industry differences | $F(7,6855) = 3.65$, $p < .001$, $\eta_p^2 = .004$ trivial size effect | | | | | | | | |

*Note*: Manu = Manufacturing and Blue Collar; Tran = Transportation; Tech = Technology; R&RT = Restaurant and Retail Trade; Gov = Government and Municipality; Finan = Financial and Business; Educ = Education; Health = Healthcare. Test 2: Percentages on outcomes for industry groups at Pre and Post adjusted by referral type and phase of data collection. $\eta_p^2$ = partial eta squared statistical effect size.

**Work Productivity: Prevalence of Problem Status**. The average EAP user in this study had 45 hours of work loss during the month before seeking support from the EAP (when combining 4 hours of absence and 41 hours of presenteeism; see Figure 6). According to other research [92], the typical full-time worker misses about 3 hours of work per month due to health-related absence and about another 24 hours of unproductive time while working (assuming an 85% level of work performance on a 0 to 100 scale [see literature review in 92 for typical workers]; which also indicates a 15% level of work presenteeism loss). As EAP users report more work loss than the typical employee, our findings show how work absenteeism and presenteeism factors are relevant to examine for EAP service users. This is particularly true for presenteeism. The details for the specific numbers of hours of presenteeism and absenteeism are listed in Table C1 in Appendix C for various industry groups and time points in the study. As commonly found in this area of workplace research, the vast majority of the work performance problem for the typical EAP user was due to being less productive *while working*, rather than missing work entirely due to their EAP-related issue. In general, presenteeism losses were about 90% of the total lost productive time while absenteeism contributed only about 10%. This same pattern was also found in each of the industry groups as well.

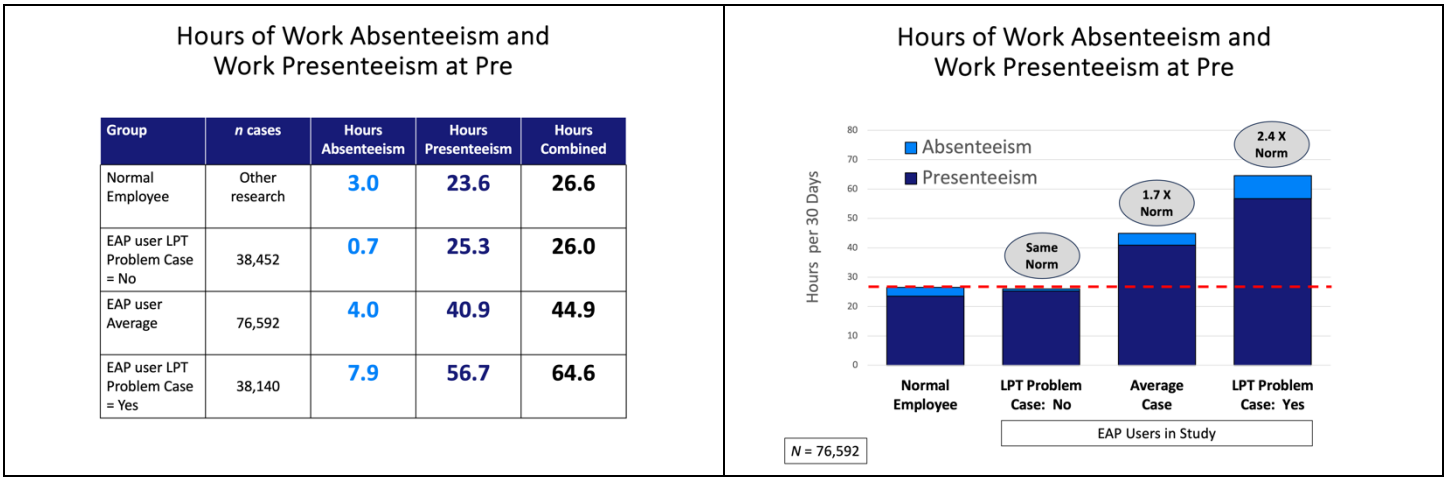


**Figure 6.** *Hours of Work Absenteeism, Work Presenteeism and Combined Lost Productive Time in Total Sample at Pre and by Problem Status Group at Pre and for Norms of Typical Employee*


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Among the over 76,000 cases with valid work absenteeism and work presenteeism data at Pre, almost 50% met the criteria for having a problem with their work performance during the month before starting EAP counseling. Thus, half of the users of all EAP had a work productivity problem (see Table 9 and Figure 5). How is this result for a high prevalence rate of work productivity problem to be understood? Figure 6 shows how the total hours of lost productive time were more than double among the EAP cases with a work productivity problem at Pre compared to cases who did not have a work productivity problem at Pre (65 hours *vs*. 26 hours, respectively). This finding is even more interesting when we know that only 6% of all cases in the study sought support from the EAP to address a work-related problem. Taken together, this data suggests that the majority of those employees with a work productivity problem were not directly using the EAP to address work issues and yet were nonetheless experiencing significant adverse impacts on their ability to work effectively from the distress caused by mental health, alcohol/drug, personal stress, family or other kinds of issues. In contrast, the other half of EAP cases who were not at a problem level at Pre had a level of lost productive time that was similar to the typical employee (only a 0.4-hour difference from the norm of 26.6 hours; see Figure 6).

The workers who used the EAP from the restaurant and retail trade industry had the highest rate of work productivity problems, at 55% of these users. At 47% of the users, the workers in the technology industry had the lowest rate of work productivity problems. The differences between the eight industry groups in the rate of work productivity problem status was not a statistically meaningful finding (see Table 9).

Among the much smaller subsample of 6,865 cases with longitudinal data on work productivity, Table 9 shows the risk rates within each industry group at Pre and at Post. Each of the eight industries has a substantial change over time in the reduction of the risk rate for work problems among all employees who used the EAP. The statistical test result also found that this rate of risk reduction among all cases occurred to similar extent within each industry.

### *3.3. PART 3: Reduction in Severity of Risks After EAP Use and Recovery Among Clinical Cases*

This part examines the final two research questions concerning the extent of improvement after EAP use.

**Anxiety: Improvement from Pre to Post**. Among the cases with longitudinal paired data on the GAD-2 from Phase 2 of data collection who started their EAP use being at-risk for clinical anxiety ($n$ = 1,150), the average case experienced a 62.5% reduction in the severity of their symptoms of anxiety after completing treatment. This was a significant and very large statistical effect. Within each of the industry groups, similar results were obtained, ranging from a low of 60% for the financial industry to a high of 64% for the manufacturing industry. The differences between the industry groups in the improvement on this outcome was not significant (see Table 10 and Figure 7). In addition, in this clinical group overall, 78% of these at-risk cases recovered after EAP use to no longer be at-risk for clinical anxiety. Similar results were obtained within each industry group, ranging from a low of 72% of cases in the transportation industry who recovered from anxiety to a high of 82% of cases in the technology industry who recovered from anxiety (see Table 11 and Figure 7).

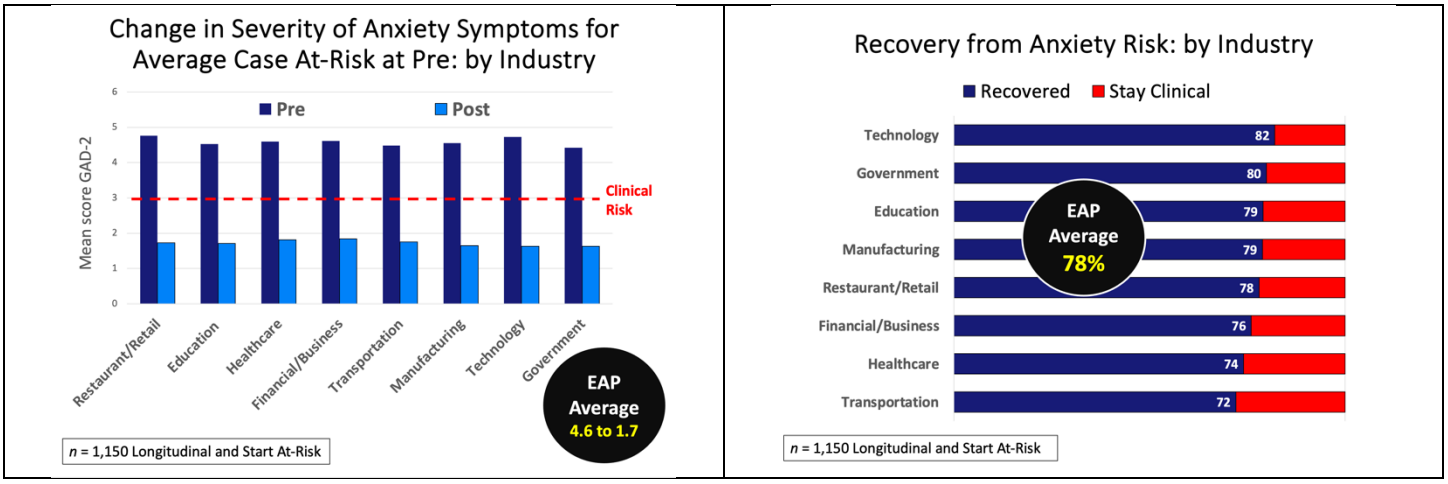


**Figure 7.** *Reduction in Severity of Clinical Symptoms for Anxiety by Industry of Employer*

**Depression: Improvement from Pre to Post**. Among the cases with longitudinal paired data on the PHQ-2 from either phase of data collection ($n$ = 1,316), the average case experienced a 63.2% reduction in the severity of their symptoms of depression after completing treatment. This was a significant and very large statistical effect. Within each of the industry groups, similar results were obtained, with a range of the average clinical case having a 58% reduction in depression severity for cases in the financial industry and a 69%

reduction for the average clinical case in the technology industry. The differences between the industry groups in the improvement for this outcome were significant but were a small size effect (see Table 10 and Figure 8). In addition, in this clinical group overall, 87% had recovered after EAP use to no longer be at-risk for clinical depression at the follow-up. Within each of the industry groups, similar results were also obtained, ranging from a low of 82% of cases in the financial industry to a high of 93% of cases in the technology industry who recovered from depression (see Table 11 and Figure 8).

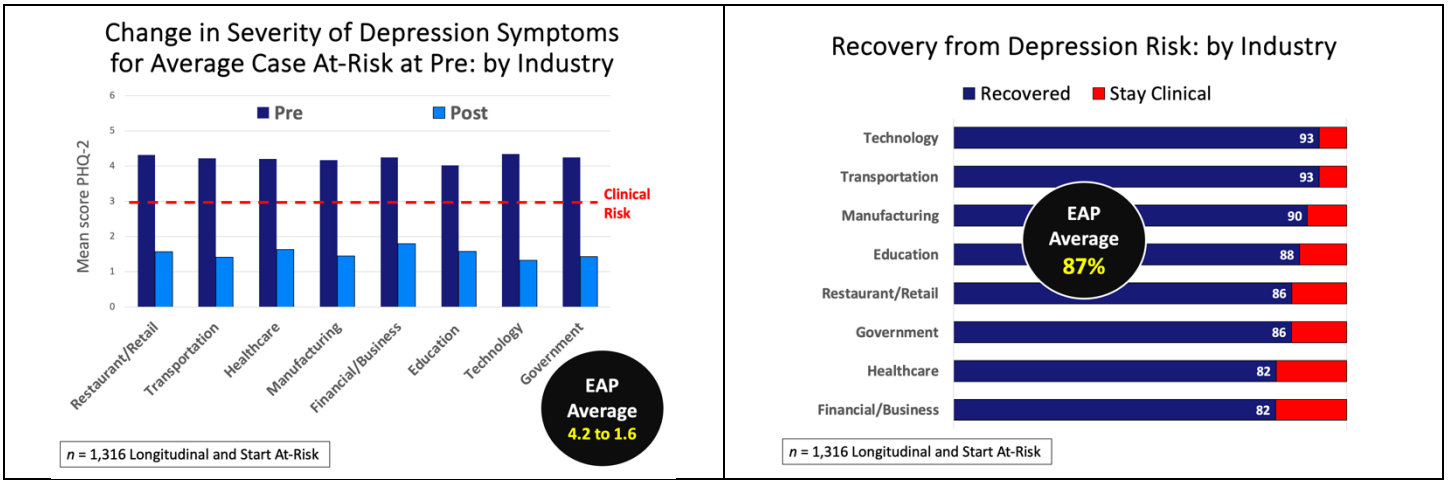


**Figure 8.** *Reduction in Severity of Clinical Symptoms for Depression by Industry of Employer*

**Alcohol: Improvement from Pre to Post**. Among the cases with longitudinal paired data on the AUDIT-C from either phase of data collection ($n$ = 788), the average case experienced a 63.0% reduction in the severity of their symptoms of hazardous alcohol use after completing treatment. This was a significant and very large statistical effect. Within each of the industry groups, similar results were obtained, with the average clinical case having a 62% reduction in hazardous use severity for cases in the healthcare industry and a 69% reduction for the average clinical case in the manufacturing industry. The differences between the industry groups in the improvement on this outcome was significant but this was only a small size statistical effect (see Table 10 and Figure 9). In addition, in this clinical group overall 74% had recovered after EAP use to no longer be at-risk for clinical alcohol misuse. Within each of the industry groups, similar results were obtained, ranging from 67% of cases in the financial industry who recovered from alcohol misuse to a high of 79% of cases in the manufacturing industry who recovered from alcohol misuse (see Table 11 and Figure 9). Note that two industries did not have enough cases with relevant data to reliably test for a recovery result.

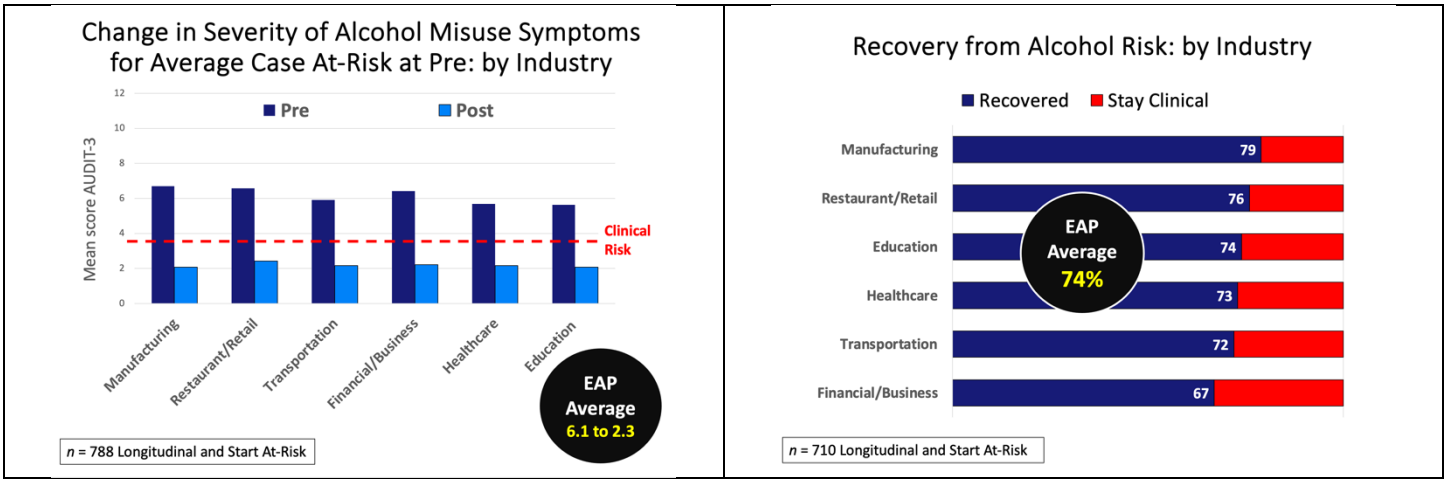


**Figure 9.** *Reduction in Severity of Clinical Symptoms for Alcohol Misuse by Industry of Employer*

**Work Productivity: Improvement from Pre to Post**. Among the employees with longitudinal paired data on work absenteeism and work presenteeism measures ($n$ = 3,636), the average case had 63.46 hours of lost productive time (from the combination of 12.00 absenteeism hours and 51.46 presenteeism hours). After EAP use this amount of LPT for the average worker changed to be only 23,55 hours (from a combination of 1.49 absence hours and 22.06 presenteeism hours). This 62.9% relative reduction in the hours of lost

work productivity after completing treatment at the EAP was a highly significant and very large statistical effect (see Table 9). Within each of the industry groups, similar results were obtained, ranging from a 61% to a 65% reduction for the average problem case. The differences between the industry groups in this outcome was not a meaningful result (see Table 10 and Figure 10). These results by industry were also similar when comparing hours of absenteeism separately and hours of presenteeism separately (see Table C1 in Appendix C). In addition, in this work productivity problem group overall, 88% of these clients recovered after EAP use to no longer have a work productivity problem. Within each of the industry groups, similar results were obtained, ranging from 84% to 89% of the cases experiencing recovery (see Table 11 and Figure 10).

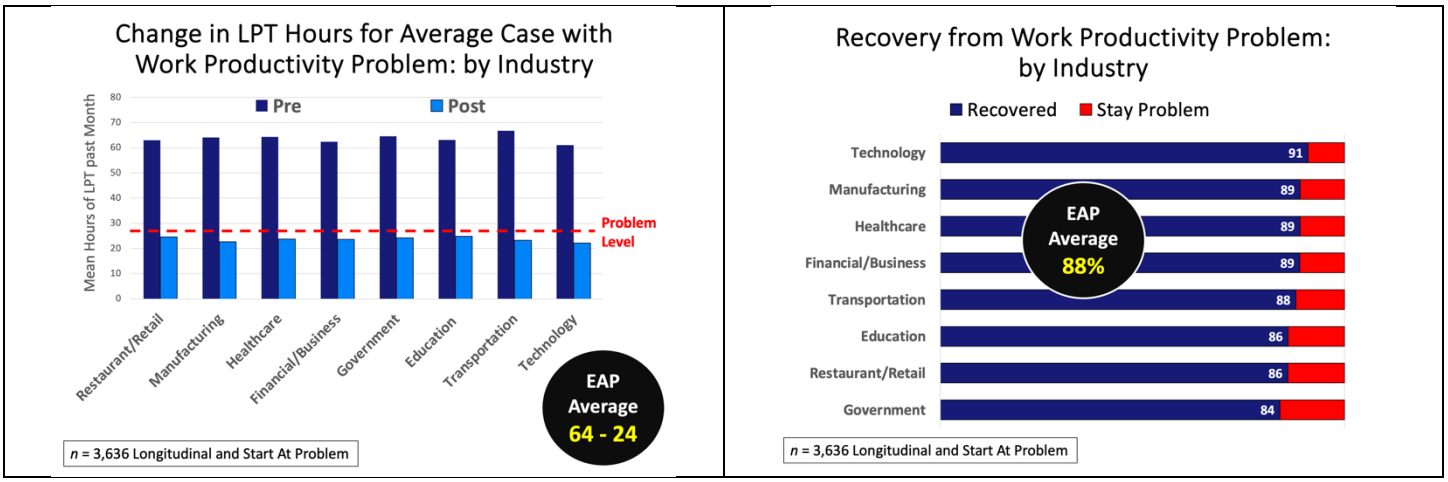


**Figure 10.** *Reduction in Severity of LPT Hours and Work Productivity Problem by Industry of Employe***r**

**Table 10.** *Industries Compared on Longitudinal Improvement in the Severity of Clinical and Work Outcomes*

| | | Industry Type | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Outcome** | | Manu | Tran | Tech | R&RT | Gov | Finan | Educ | Health | Total |
| **Anxiety** | *n* cases paired data | 209 | 166 | 88 | 167 | 65 | 154 | 92 | 209 | 1,150 |
| (GAD-2 scores: | *M* severity at Pre | 4.17 | 4.22 | 4.34 | 4.32 | 4.25 | 4.25 | 4.02 | 4.20 | 4.59 |
| range 0 to 6) | *M* severity at Post | 1.45 | 1.41 | 1.33 | 1.57 | 1.43 | 1.80 | 1.58 | 1.63 | 1.72 |
| | Change % from Pre | **-65.2** | **-66.6** | **-69.4** | **-63.7** | **-66.4** | **-57.6** | **-60.7** | **-61.2** | **-62.5** |
| | Industry differences: | *Time X Industry test* = $F_{paired}(7,1141) < 1$, $p = .49$ n.s., $\eta_p^2 = .006$ trivial size effect | | | | | | | | |
| | Total sample change: | *Time test* = $F_{paired}(1,1149) = 3601.76$, $p < .001$, $\eta_p^2 = .758$ **very large size effect** | | | | | | | | |
| **Depression** | *n* cases paired data | 286 | 120 | 83 | 198 | 75 | 167 | 142 | 245 | 1,316 |
| (PHQ-2 scores: | *M* severity at Pre | 4.17 | 4.22 | 4.34 | 4.32 | 4.25 | 4.25 | 4.02 | 4.20 | 4.21 |
| range 0 to 6) | *M* severity at Post | 1.45 | 1.41 | 1.33 | 1.57 | 1.43 | 1.80 | 1.58 | 1.63 | 1.55 |
| | Change % from Pre | **-65.2** | **-66.6** | **-69.4** | **-63.7** | **-66.4** | **-57.6** | **-60.7** | **-61.2** | **-63.2** |
| | Industry differences: | *Time X Industry test* = $F_{paired}(7,1306) = 2.29$, $p = .03$, $\eta_p^2 = .012$ small size effect | | | | | | | | |
| | Total sample change: | *Time test* = $F_{paired}(1,1315) = 4296.00$, $p < .001$, $\eta_p^2 = .766$ **very large size effect** | | | | | | | | |
| **Alcohol** | *n* cases paired data | 269 | 58 | 39* | 85 | 36* | 100 | 67 | 134 | 788 |
| (AUDIT-C | *M* severity at Pre | 6.69 | 5.91 | NA | 6.58 | NA | 6.42 | 5.63 | 5.68 | 6.13 |
| scores: | *M* severity at Post | 2.08 | 2.16 | NA | 2.42 | NA | 2.22 | 2.08 | 2.16 | 2.27 |
| range 0 to 12) | Change % from Pre | **-68.9** | **-63.5** | NA | **-63.2** | NA | **-65.4** | **-63.1** | **-62.0** | **-63.0** |
| | Industry differences: | *Time X Industry test* = $F_{paired}(5,705) = 3.68$, $p = .003$, $\eta_p^2 = .025$ small size effect | | | | | | | | |
| | Total sample change: | *Time test* = $F_{paired}(1,787) = 1638.92$, $p < .001$, $\eta_p^2 = .676$ **very large size effect** | | | | | | | | |
| **Work** | *n* cases paired data | 983 | 277 | 261 | 389 | 299 | 437 | 369 | 621 | 3,636 |
| **Productivity** | *M* severity at Pre | 64.05 | 66.65 | 60.97 | 62.98 | 64.45 | 62.42 | 63.07 | 64.30 | 63.46 |
| (LPT Hours) | *M* severity at Post | 22.62 | 23.29 | 22.15 | 24.61 | 24.22 | 23.60 | 24.84 | 23.82 | 23.55 |
| | Net fewer hours | -41.43 | -40.33 | -38.82 | -38.37 | -40.23 | -38.82 | -38.23 | -40.48 | -39.41 |
| | Change % from Pre | **-64.7** | **-63.4** | **-63.7** | **-60.9** | **-62.4** | **-62.2** | **-60.6** | **-63.0** | **-62.9** |
| | Industry differences: | *Time X Industry test* = $F_{paired}(7,3626) = 1.63$, $p = .33$ n.s., $\eta_p^2 = .002$ trivial size effect | | | | | | | | |

| | |
|---|---|
| Total sample change: | *Time test* = $F_{paired}(1,3635) = 11904.69$, $p < .001$, $\eta_p^2 = .766$ **very large size effect** |

*Note*: Only cases with Pre and Post longitudinal data. Manu = Manufacturing and Blue Collar; Tran = Transportation; Tech = Technology; R&RT = Restaurant and Retail Trade; Gov = Government and Municipality; Finan = Financial and Business; Educ = Education; Health = Healthcare. Mean scores on outcomes for each industry adjusted by data collection phase and referral type. $\eta_p^2$ = partial eta squared statistical effect size.
* excluded due to not meeting test criteria of minimum valid sample size of 50 cases.

**Table 11.** *Industries Compared on Longitudinal Recovery from Risk Status on Clinical and Work Outcomes*

| | | Industry Type | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Outcome** | | Manu | Tran | Tech | R&RT | Gov | Finan | Educ | Health | Total |
| **Anxiety** | *n* cases paired data | 209 | 166 | 88 | 167 | 65 | 154 | 92 | 209 | 1,150 |
| (GAD-2 scores: | % At-risk at Pre | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| range 0 to 6) | % At-risk at Post | 21.4 | 27.7 | 17.8 | 22.0 | 20.5 | 23.8 | 20.8 | 26.7 | 22.3 |
| | % Recovered | **78.6** | **72.3** | **82.2** | **78.0** | **79.5** | **76.2** | **79.2** | **73.3** | **77.7** |
| | Industry differences: | *Time X Industry test* = $F_{paired}(7,1141) < 1$, $p = .49$ n.s., $\eta_p^2 = .006$ trivial size effect | | | | | | | | |
| | Total sample change: | *Time test* = $F_{paired}(1,1149) = 3781.40$, $p < .001$, $\eta_p^2 = .767$ **very large size effect** | | | | | | | | |
| **Depression** | *n* cases paired data | 286 | 120 | 83 | 198 | 75 | 167 | 142 | 245 | 1,316 |
| (PHQ-2 scores: | % At-risk at Pre | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| range 0 to 6) | % At-risk at Post | 10.1 | 7.2 | 6.6 | 13.6 | 14.2 | 18.4 | 12.1 | 17.7 | 13.1 |
| | % Recovered | **89.9** | **92.8** | **93.4** | **86.4** | **85.8** | **81.6** | **87.9** | **82.3** | 86.9 |
| | Industry differences: | *Time X Industry test* = $F_{paired}(7,1306) = 2.54$, $p = .01$, $\eta_p^2 = .013$ small size effect | | | | | | | | |
| | Total sample change: | *Time test* = $F_{paired}(1,1313) = 8746.28$, $p < .001$, $\eta_p^2 = .869$ **very large size effect** | | | | | | | | |
| **Alcohol** | *n* cases paired data | 269 | 58 | 39* | 85 | 36* | 100 | 67 | 134 | 788 |
| (AUDIT-C | % At-risk at Pre | 100 | 100 | NA | 100 | NA | 100 | 100 | 100 | 100 |
| scores: | % At-risk at Post | 22.0 | 27.6 | NA | 23.8 | NA | 33.0 | 26.1 | 26.9 | 26.0 |
| range 0 to 12) | % Recovered | **78.0** | **72.4** | NA | **76.2** | NA | **67.0** | **73.9** | **73.1** | **74.0** |
| | Industry differences: | *Time X Industry test* = $F_{paired}(5,705) = 1.03$, $p = .40$ n.s., $\eta_p^2 = .007$ trivial size effect | | | | | | | | |
| | Total sample change: | *Time test* = $F_{paired}(1,787) = 2238.15$, $p < .001$, $\eta_p^2 = .740$ **very large size effect** | | | | | | | | |
| **Work** | *n* cases paired data | 983 | 277 | 261 | 389 | 299 | 437 | 369 | 621 | 3,636 |
| **Productivity** | % At-risk at Pre | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| (LPT Hours) | % At-risk at Post | 10.9 | 12.2 | 8.8 | 14.2 | 15.8 | 11.5 | 13.7 | 11.0 | 12 |
| | % Recovered | **89.1** | **87.8** | **91.2** | **85.8** | **84.2** | **88.5** | **86.3** | **89.0** | **88.0** |
| | Industry differences: | *Time X Industry test* = $F_{paired}(7,3626) = 1.58$, $p = .14$ n.s., $\eta_p^2 = .003$ trivial size effect | | | | | | | | |
| | Total sample change: | *Time test* = $F_{paired}(1,3635) = 26,678.90$, $p < .001$, $\eta_p^2 = .880$ **very large size effect** | | | | | | | | |

*Note*: Only cases with Pre and Post longitudinal data who started EAP use at-risk or problem status on outcome. Manu = Manufacturing and Blue Collar; Tran = Transportation; Tech = Technology; R&RT = Restaurant and Retail Trade; Gov = Government and Municipality; Finan = Financial and Business; Educ = Education; Health = Healthcare. Recovery at Post percentage among the cases at-risk at Pre was adjusted by phase of data collection and by referral type. $\eta_p^2$ = partial eta squared statistical effect size.
* excluded due to not meeting test criteria of minimum valid sample size of 50 cases.

## IV. Discussion

This study explored the role of different industry contexts in the U.S. for understanding who uses the EAP, how it was used and what results were obtained on health and work outcomes. The over 85,000 cases in the study provided a very large sample in which to profile each industry on factors measured at the start of program use. The mix of industries within this sample of EAP users was similar to the proportions of employees in the same industries in full U.S. workforce. The clinical and work outcomes were assessed using standardized self-report tools from the scientific literature that had good psychometric properties and thus offered a solid basis for the study. The longitudinal subsamples ranged in size from 3,636 cases for work productivity to 788 cases for alcohol misuse. These subsamples were generally a fair representation of the full starting sample and thus the findings can be reasonably considered to extend to the full sample of EAP users. Moreover, the "real world" business context of this study also provides external validity for the results as normally delivered by this program. The key findings of the study overall and for the industry comparisons for the four outcomes are shown in Table 12.

**Table 12**. *Summary of Key Findings for Four Outcomes in Total Sample and by Industry*

| Key Results | Group | Outcome | | | |
|---|---|---|---|---|---|
| | | Mental Health Anxiety | Mental Health Depression | Alcohol Misuse | Below Normal Work Productivity |
| Prevalence of at-risk clinical or problem status before EAP use among all cases | Total Sample | **43%** | **30%** | **12%** | **50%** |
| | By Industry | 41% to 47% trivial effect | 27% to 32% trivial effect | 10% to 15% trivial effect | 47% to 55% trivial effect |
| Average per case reduction in severity of symptoms after EAP use for the subgroup of at-risk cases | Total Sample | **-70%** large effect $\eta_p^2 = .76$ | **-63%** large effect $\eta_p^2 = .77$ | **-63%** large effect $\eta_p^2 = .68$ | **-63%** large effect $\eta_p^2 = .77$ |
| | By Industry | -60% to -66% trivial effect | -58% to -69% small effect | -62% to -69% small effect | -61% to -65% trivial effect |
| Recovery to no-risk status after EAP use as percentage of subgroup of at-risk cases | Total Sample | **78%** large effect $\eta_p^2 = .77$ | **87%** large effect $\eta_p^2 = .87$ | **74%** large effect $\eta_p^2 = .74$ | **88%** large effect $\eta_p^2 = .88$ |
| | By Industry | 72% to 82% trivial effect | 82% to 93% small effect | 67% to 79% trivial effect | 84% to 91% trivial effect |

*Note*: Tests of differences between the eight industry groups on outcomes yielded only small or trivial size statistical effects. Improvement over time calculated as difference between the Pre and Post scores on measured divided into the Pre score for the average case with outcome. $\eta_p^2$ = partial eta squared statistical effect size.

*4.1. Research Questions Revisited*

RQ1: Summary of EAP User Demographics Compared by Industry

Of the two demographic factors, only one had meaningful differences between the industry groups. The age of the client did not differ much by the eight industry groups but the EAP users in the restaurant and retail trade category were the youngest. Gender of the user had a medium size effect by industry and the most difference by industry of any variable in the study. At one end was the healthcare industry with 80% women and at the other was the manufacturing industry with 44% women. These findings for EAP users by industry were also similar to the age and gender profiles in the U.S. total workforce by industry.

RQ2: Summary of EAP Use Factors Compared by Industry

Overall, the eight industries were mostly similar on the EAP use profile factors. Of the five context factors tested, only one had meaningful differences. Factors that had no meaningful differences by industry whether counseling or coaching was used, whether the service was delivered in-person or using online video, the particular mix of different types of reasons why the service was used and how long the service use episode had lasted. Referral source into the EAP was a small size effect for the difference by industry, with formal referrals being only 0.6% of the employees working in education but up to 5.9% of the employees working in government.

RQ3: Summary of Clinical Risk Prevalence Rates at Baseline Compared by Industry

Of the four outcomes tested, none had any meaningful differences between the eight industry groups in the percentage of cases who started out their EAP use being at-risk. Thus, the risk rates among cases on these health and work factors were similar by industry.

RQ4: Summary of Reduction in Clinical Risk Prevalence Rates After Use Compared by Industry

All four outcomes had large reductions in the number of cases who were at-risk from Pre to Post. This positive change was evident to largely similar levels for each industry as well.

RQ5: Summary of Reduction in Severity of Clinical Symptoms After Use Compared by Industry

All four outcomes had significant and very large statistical effect sizes for the extent of improvement after use. This positive change was evident to largely similar levels for each industry as well. Anxiety and work productivity outcomes both had trivial differences

between the industry groups in the amount of symptom severity reduction achieved for the average case. Depression and alcohol misuse both had only a small size difference by industry groups in how much the average at-risk case was able to reduce their symptom severity.

RQ6: Summary of Recovery from Clinical Risk Status After Use Compared by Industry

All four outcomes had a large majority of the at-risk cases successfully recover to no risk status after use (ranging from 74% to 88% of the at-risk cases in total sample relevant to these outcomes). Of all outcomes tested, the eight industry groups had only a small range of only a plus or minus 5% difference from the total sample average result in the percentage of cases who started out their EAP use at a risk level but then successfully changed to not be at risk at the follow-up after completing EAP use. The EAP treatment was effective to similar levels in each industry group based on the rates of recovery from clinical risk or work problem status.

### *4.2. Literature Context*

Similar to other studies of employee assistance program counseling, this study found that mental health clinical risks were relevant to almost half of EAP users and that about 1 in every 10 cases had hazardous alcohol use. We also found that problems with missing work and/or presenteeism while working described half of these EAP cases. Among those with a work problem, presenteeism accounted for 90% of their total lost productive time while absence was only 10%. Even though absence from work may be easier for most managers to notice and track among the workers they supervise, it is under-performance while working that is far more consequential factor. When workers are distressed about something at home or work or are experiencing symptoms of common behavioral health disorders, work presenteeism is the more costly culprit in driving down their productivity. Correlational tests determined that these behavioral health and work problem factors also tended to overlap and were experienced together to various degrees.

The total sample results of this study replicate other research investigations [29-45] in providing evidence that brief counseling from EAPs can improve the clinical and work outcomes for a large majority of relevant users who were at-risk on a particular outcome when first seeking support from the EAP. These findings indicate that EAP counseling can restore this work loss and return most employee users to a more normal level of work performance and focus and can keep them on the job as scheduled. These results are important to the employers who sponsor an EAP for their company.

The lack of differences based on industry found in this study for improvement on the work outcome measure replicates the same finding in the three WOS studies cited earlier [73-75]. What is new in this study is also finding no differences by industry groups in the rates of improvement in the anxiety, depression and alcohol risk clinical factors.

### *4.3. Implications*

Having such a large multi-year dataset provided a unique opportunity to identify even minor differences between the various industries. Our results, however, tell a story of similarity across industries in areas of client use, risk rates at the start of use and improvement after use. It appears the range of personal or job-specific characteristics across employees who work in different industries is apparently more consequential to why employees use the EAP, how the counseling is used and how effective it is than is the broad category of the industry that defines their employment context. Finding so few meaningful differences between the eight industry groups on the effectiveness results for these clinical and work outcome areas also speaks to the quality and operational consistency of the clinical and coaching services provided by this EAP company to deliver consistent results across different industries.

More generally, this study also offers valuable new descriptive evidence in the statistical profiles of the eight major industry types in BLS data for the U.S. total workforce and also the user experience profiles for the same eight industry types in our own EAP data. For example, the only previous study [72] to examine the presenting issues of EAP users had used only two crude groups of industry (for-profit and not-for-profit). Our study had details for eight different industry types and thus provided a much richer examination of the differences and similarities between these industries on presenting issues. Our first-ever data results on clinical risk prevalence levels and the extent of reductions in clinical severity and recovery obtained for employee users in each of the eight industries are also useful to deepening our understanding of the behavioral risk profiles for each industry. For example, individual employers in a particular industry can use this profile information as a comparison for the EAP experiences at their specific company.

### *4.4. Limitations of the Study*

Certain limitations are present for this study. It was conducted on a convenience sample of employees who all had access to the same commercially available EAP service. Thus, data from only one EAP provider was evaluated. Perhaps other providers would have a different result for a comparison of industries from their program. Our reliance on brief self-report data sources could be questioned, as other records or external sources of the outcomes potentially could provide more accurate measurements. As this was a retrospective study design without a control or comparison group, we cannot definitively conclude that the use of EAP services is what caused the

positive changes in the outcomes. Other unknown factors likely also influenced the results beyond just the use of our counseling or coaching services. Although large segments of the at-risk groups did recover after use, others still did not. This mixed level of clinical success for different cases is commonly found in treatment studies in psychology [100,104-106], yet it calls for further investigation into the reasons for non-recovery and what could potentially be done better in the future.

Factors not examined in the study also merit discussion. Missing from this study are measurements of the working conditions, the behavioral profiles and actions of managers, the leadership styles and the larger work culture. These workplace-level factors are known to vary by certain industries and also to contribute to the development or deterioration of behavioral health conditions of workers [107-109]. Also missing from the study was data on program utilization rates for employers by industry. Did certain industries have greater use of EAP counseling (i.e., number of cases per every 100 covered employees per year? [see 110])? Also missing from the study was other kinds of program use data involving the workplace and organizational level kinds of services offered by this provider, such as educational or skill enhancing trainings for employees and for managers, responses to crisis and violence incidents affecting the workplace, consultations with managers and leadership and other similar services. Perhaps there were some meaningful differences between particular industries in these workplace-level EAP services in terms of their utilization rates and associated direct or indirect outcomes. Future studies could focus on these other aspects of EAP services and possible industry-specific contextual factors that impact the success of EAP service delivery and the health of the larger organization.

## V. Conclusion

This applied exploratory study provided EAP user profiles in eight major types of industries in the United States. It also provides longitudinal evidence that use of brief counseling and coaching was associated with large size improvements for employees with clinical levels of anxiety, depression and hazardous alcohol use as well as restoring the level of work productivity after use to a normal level. Only small or trivial size variations were found by industry in the service use characteristics and for almost all of the results involving clinical and work outcomes. Although one industry was noticeably younger than the others (restaurants and retail trade), the gender mix of clients ranged widely by industry as did the rather rare event of being formally referred into the EAP for counseling by one's manager at work. But other than those factors, the general conclusion is that the range of personal or job-specific characteristics across employees who work in different industries is apparently more consequential to why employees use the EAP, how the counseling is used and how effective it is than is the broad category of the industry that defines their employment context. Simply knowing the industry of the employer who sponsored the EAP had little impact on who used the EAP benefit, how the services were used, why the services were used, the risk profiles of the users and how effective the services were for improving relevant clinical and work performance outcomes. Individual factors and other kinds of work or employer context factors thus appear to be more useful in understanding employee assistance program use and impact.

## Acknowledgment

We acknowledge support of the counselors and other staff at CuraLinc Healthcare who provided the clinical services and collected the data for this project. We are grateful to the thousands of people who used the services for making the study possible.

## Declarations

**Funding:** The research was financed by the authors' own resources. No external research grant funding was involved.

**Author Contributions:** MA performed the statistical analyses of the aggregated dataset, conducted the literature review and drafted the manuscript. DP developed the study design, selected the measures involved, coordinated the data collection and led preparation of annual reports of preliminary results. All authors discussed the results and contributed to the final manuscript.

**Conflict of interest/Competing interests:** MA is an independent research scholar and consultant who received financial support from CuraLinc Healthcare for preparing this research manuscript. MA has also occasionally worked on other projects for this company. DP works for CuraLinc Healthcare company.

**Institutional Review Board Statement:** No formal ethical approval of the study was required due to the retrospective archival naturalistic design of the study. All employees who used the counseling and completed the outcome measures participated voluntarily and had their personal identity protected as all unique identifiers were removed from the data prior to analysis. All counselors involved in the delivery of the clinical treatment services were fully licensed and trained professionals. All aspects of this evaluation project and preparation of the manuscript followed the ethical guidelines of the American Psychological Association (2017).

**Informed Consent Statement:** All data was collected as part of the normal business practices and not for a separate specific research project. Consent for participation in a research study and use of data for publication of study results was therefore not necessary.

## APPENDIX A

**Table A1.** *Data Sources for United States Total Civilian Labor Force 2024 by Industry*

| Factors | Sources from Bureau of Labor Statistics, United States Government |
|---|---|
| General counts of workers, hours worked per week, number of establishments | Employment Situation News Release. Establishment Data. Table B-1. Employees on nonfarm payrolls by industry sector and selected industry detail. February 2024. https://www.bls.gov/news.release/archives/empsit_02022024.htm<br>The employment situation – January 2024. https://www.bls.gov/news.release/pdf/empsit.pdf<br>Industries at a glance – January 2024. https://www.bls.gov/iag/ |
| Gender of worker | https://www.bls.gov/news.release/archives/empsit_02022024.htm (Table B-5) |
| Age of worker | https://www.bls.gov/cps/cpsaat18b.htm (Table 18b) |
| Union | https://www.bls.gov/news.release/pdf/union2.pdf |
| Compensation | https://www.bls.gov/news.release/pdf/ecec.pdf |
| **Industry** | |
| Manufacturing & heavy labor | Manufacturing: NAICS 31-33. https://www.bls.gov/iag/tgs/iag31-33.htm<br>Construction: NAICS 23. https://www.bls.gov/iag/tgs/iag23.htm<br>Wholesale trade: NAICS 42. https://www.bls.gov/iag/tgs/iag42.htm<br>Repair and maintenance: NAICS 811. https://www.bls.gov/iag/tgs/iag811.htm<br>Utilities: NAICS 22. https://www.bls.gov/iag/tgs/iag22.htm |
| Transportation | Transportation and warehousing: NAICS 48-49. https://www.bls.gov/iag/tgs/iag48-49.htm |
| Restaurants & retail trade | Food services and drinking places: NAICS 722. https://www.bls.gov/iag/tgs/iag722.htm<br>Retail trade: NAICS 44-45. https://www.bls.gov/iag/tgs/iag44-45.htm |
| Financial & Management | Finance and insurance: NAICS 52. https://www.bls.gov/iag/tgs/iag52.htm<br>Management of companies and enterprises: NAICS 55. https://www.bls.gov/iag/tgs/iag55.htm |
| Technology & Information | Scientific and technical services: NAICS 5413-5417. See five subtypes:<br>https://www.bls.gov/oes/current/naics4_541300.htm<br>https://www.bls.gov/oes/current/naics4_541400.htm<br>https://www.bls.gov/oes/current/naics4_541500.htm<br>https://www.bls.gov/oes/current/naics4_541600.htm<br>https://www.bls.gov/oes/current/naics4_541700.htm<br>Information services: NAICS 51. https://www.bls.gov/iag/tgs/iag51.htm |
| Healthcare & Social Assistance | Health care and social assistance: NAICS 62. https://www.bls.gov/iag/tgs/iag62.htm<br>Religious, grantmaking, civic, professional and similar organizations: NAICS 813. https://www.bls.gov/iag/tgs/iag813.htm |
| Educational | Educational services: NAICS 61. https://www.bls.gov/iag/tgs/iag61.htm |
| Government & Municipality | Employment Situation News Release. Establishment Data. Table B-1. Employees on nonfarm payrolls by industry sector and selected industry detail. February 2024. https://www.bls.gov/news.release/archives/empsit_02022024.htm |
| Other industries | Professional, scientific and technical services: NAICS 54 [without scientific & technical]. https://www.bls.gov/iag/tgs/iag54.htm<br>Adminstrative and support services: NAICS 561. https://www.bls.gov/iag/tgs/iag561.htm<br>Waste management and remediation services: NAICS 562. https://www.bls.gov/iag/tgs/iag562.htm<br>Leisure and hospitality services [without food and drink]: NAICS 71 & 72. https://www.bls.gov/iag/tgs/iag70.htm<br>Natural resources and mining: NAICS 11 & 22. https://www.bls.gov/iag/tgs/iag10.htm<br>Personal and laundry services: NAICS 812. https://www.bls.gov/iag/tgs/iag812.htm |

*Note:* NAICS = North American Industry Classification System.

## APPENDIX B

*Details for Clinical Risk and Work Outcome Measures*

### *B.1. Correlations Within Cases at Start of EAP Use*

The outcome measures were correlated with each other in expected ways when tested among the available cases with data on both measures at the start of EAP use (see Table B1).

**Table B1.** *Correlations Between Outcomes at the Start of EAP Use and Outcomes with Types of Presenting Issue*

| | | Correlations at Pre | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| | **Outcome measures** | | | | | | |
| 1 | Depression severity | 1.0 | **.54** | **.87** | **.16** | **.23** | **.31** |
| 2 | Anxiety severity | | 1.0 | **.89** | **.10** | **.19** | **.31** |
| 3 | Mental health severity | | | 1.0 | **.14** | **.23** | **.36** |
| 4 | Alcohol misuse | | | | 1.0 | **.21** | .05 |
| 5 | Work absenteeism | | | | | 1.0 | **.23** |
| 6 | Work presenteeism | | | | | | 1.0 |
| | **Presenting issue** | | | | | | |
| 7 | Depression issue | **.34** | .06 | **.21** | .04 | .05 | .08 |
| 8 | Anxiety issue | -.02 | **.20** | **.11** | -.03 | .01 | .03 |
| 9 | Alcohol issue | -.01 | -.03 | -.02 | **.52** | .06 | .02 |
| 10 | Work issue | -.04 | .04 | .01 | -.04 | .01 | .07 |
| | Scale Reliability $\alpha$ | .86 | .90 | .84 | .84 | NA | NA |
| | *M* | 2.08 | 2.68 | 4.64 | 1.35 | 3.04 | 3.15 |
| | SD | 1.92 | 2.01 | 3.43 | 2.46 | 38.28 | 1.35 |
| | *n* cases | 57,022 | 50,787 | 50,787 | 51,535 | 80,089 | 78,331 |

*Note*: Depression = PHQ-2. Anxiety = GAD-2. Mental health = PHQ-4. Absenteeism hours (WOS-5 or WOS-1) tested using square root transformed version of variable to reduce skew. Presenteeism = SPS-6 or WOS item. All outcome measures designed with higher scores to indicate greater severity. Correlation $n$ = 50,142 to 76,593. All correlations significant at $p < .01$.

Significant associations (all $p < .001$) were found in all but one of the tests. More specifically, depression severity was associated with greater severity of anxiety ($r = .54$), greater alcohol misuse ($r = .16$), greater work absence ($r = .23$) and greater work presenteeism ($r = .31$). Anxiety had the same pattern of findings as depression, as greater severity of anxiety symptoms was positively associated with alcohol misuse ($r = .10$), absence ($r = .19$) and presenteeism ($r = .31$). In addition, more severe alcohol misuse was related to greater work absence ($r = .21$) but was unrelated to level work presenteeism ($r = .05$). As expected, the two work outcomes were correlated with each ($r = .23$). This pattern of associations offers strong evidence for the convergent form of measurement validity for each outcome measure as demonstrated in the study sample.

The presenting issue topic for EAP clients was associated with initial severity levels of the matching clinical outcome measure. More severe depression symptoms were associated with the presenting issue being depression-related ($r = .34$). More severe anxiety symptoms were associated with the presenting issue being anxiety-related ($r = .20$). More severe alcohol misuse symptoms were strongly associated with the presenting issue being alcohol-related ($r = .52$). These findings are evidence for the construct validity of the three clinical measures. In contrast, the initial severity levels of the two work outcomes were unrelated to clients having a presenting issue that focused on job stress or work-related issues. These findings for work impact severity and work as the presenting issue were expected, though, as absenteeism and presenteeism are potentially relevant to all workers regardless of the kind of issue guiding their use of the EAP. More generally, the other results in Table B1 that reveal weak or no associations between conceptually distinct outcome measures provided evidence for the discriminant form of measurement validity for each outcome measure as demonstrated in the study sample.

*B.2. Correlation of Outcome Measures at Start of Counseling with Client Demographic and EAP Use Factors*

The five outcome measures at Pre were also tested for possible associations with client demographic and service use context factors. Results revealed that few of the tests yielded a meaningful finding (defined as at least a small effect of $r$ of .10 or higher and $p < .001$). In the full sample, the two demographic factors of EAP clients had few meaningful associations with the levels of the various health and work outcomes during the period just before the start of EAP use. Age of the client was unrelated to the severity levels of all five outcomes. Gender of the client was also unrelated to all outcomes except for alcohol misuse. Male clients tended to have greater alcohol misuse than female clients ($r = -.18$). Accordingly, the percentage of cases who were at clinical at-risk status on the alcohol misuse measure when starting counseling varied by gender: 19% of men *vs*. 13% of women.

The percentage of cases who were at clinical at-risk status on alcohol misuse when starting counseling also varied by referral type: 26% of formal referral cases by manager at work vs. 12% of self/family referral cases ($r = .09$). The hours of missed work in the past month before starting counseling also varied by referral type: average of 8.0 hours for formal referral cases vs. average of 2.8 hours for self/family referrals. Thus, the very small percentage of formal referral cases (3% of total) had - on average – almost three times the

level of absence compared to self-referral cases. Other EAP use factors of the type of EAP service used (counselor or coaching), the modality of use and the duration of use episode were each unrelated to the five outcome measures at Pre (test details not shown). These many findings of the *lack of association* also offers evidence for the discriminant form of measurement validity for each outcome measure as demonstrated in the study sample (i.e., scores on the measure did not correlate with other measures not conceptually expected have meaningful relationships).

*B.3. Outcome Measures Data Collection and Standardization Across the Two Phases of the Study*

This appendix presents details of how the measures from each phase compare and the final standardized version of the measures that blended the case-level data across the two phases of data collection. Figure B1 and Table B2 and show the sources for each outcome measure across the seven years of the project. Data on anxiety was only collected in Phase 2. Each of the other outcomes involved a different version of the measure depending on the phase of the project. This profile reveals the outcome measures tended to be similar overall when comparing psychometric attributes from the two phases. Some differences existed between phases, however, as the clinical severity levels for depression and alcohol measures among all cases with data were both much higher in Phase 1 (when cases were specifically selected for having these issues) than in Phase 2 (when collecting data occurred for almost all cases as feasible). As the main interest of the study was to test for longitudinal change within the at-risk clinical subsamples, the clinical measures of depression and alcohol misuse in each phase had the same items across the two phases and used only the at-risk subsamples from within each data collection phase. The two work outcome measures collected in each phase also were standardized (see Table B3) and had the same cut-off scoring criteria in each phase of data collection for work productivity.

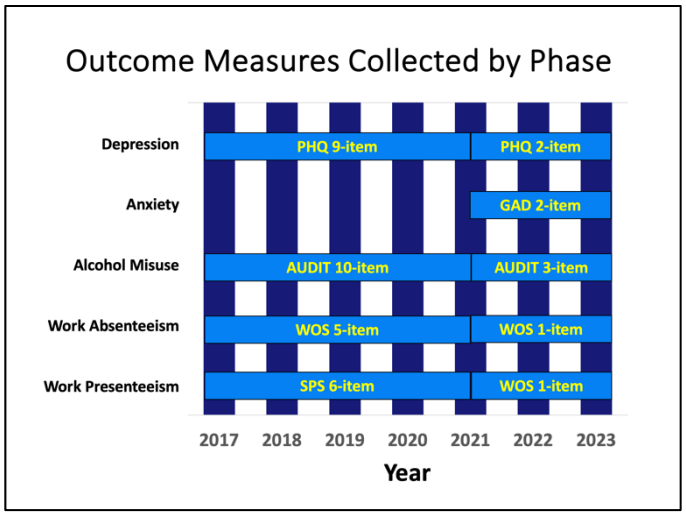


**Figure B1.** *Outcome Measures Collected by Year and Study Phase*

**Table B2.** *Phases of Data Collection for Outcome Measures*

| | **Phase of Data Collection** | | **Analyzed for this study** |
|---|---|---|---|
| | 1: January 2017 to July 2021 | 2: August 2021 to December 2023 | |
| | Relevance of case for measure(s) decided by counselor(s) | Same set of measures collected on almost all cases routinely | |
| **Measure** | | | |
| Depression | PHQ-9 | PHQ-2 from PHQ-4 | PHQ-2 from both phases |
| Anxiety | Not applicable | GAD-2 from PHQ-4 | GAD-2 from phase 2 |
| Alcohol Misuse | AUDIT-10 | AUDIT-3 from AUDIT-10 | AUDIT-3 from both phases |
| Work Absenteeism | WOS-5 | WOS-1 | Both measures used |

| | | | |
|---|---|---|---|
| Work Presenteeism | SPS-6 | WOS-1 | Both measures used, but the SPS-6 scale was reverse scored (i.e., higher score indicates more presenteeism) and converted to 1-5 range to match range of the WOS. |

*Note*: PHQ = Patient Health Questionnaire. GAD = Generalized Anxiety Disorder. AUDIT = the Alcohol Use Disorders Identification Test. SPS = Stanford Presenteeism Scale. WOS = Workplace Outcome Suite.

**Table B3**. *Standardization Procedures for Two Work Presenteeism Measures*

| | **Stanford Presenteeism Scale** (reverse scored) | | **Workplace Outcome Suite Presenteeism Item** | | Estimated Level of Productivity | Problem Status Productivity |
|---|---|---|---|---|---|---|
| Item(s): | "I felt hopeless about finishing certain work tasks due to my depression, stress or anxiety." | | "My personal problems kept me from concentrating on my work." | | | |
| Higher scores indicate: | Work presenteeism (loss of work productivity) | | Work presenteeism (loss of work productivity) | | | |
| | 26-30 | Very high | 5 | Strongly agree | 55% | Problem |
| Score | 21-25 | High | 4 | Somewhat agree | 65% | Problem |
| range | 16-20 | Moderate | 3 | Neutral | 75% | No Problem |
| | 11-15 | Low | 2 | Somewhat disagree | 85% | No Problem |
| | 6-10 | Very low | 1 | Strongly disagree | 95% | No Problem |

**Table B4**. *Calculation of Lost Productive Time (LPT) Hours per Case*

| Step | **Concepts** | **Data Example** |
|---|---|---|
| | **Amount of LPT** | |
| 1 | Full work schedule in month | 160 hours (4 weeks x 40 hours per work week) |
| 2 | Amount of absence experienced in month | 10 hours |
| 3 | Actual hours worked in month | 160 hours scheduled minus 10 hours absent = 150 hours actually worked |
| 4 | Level of work productivity while working on a 0% to 100% scale (lowest to highest) | 100% maximum level minus presenteeism deficit of 30% = 70% productive |
| 5 | Level of work presenteeism while working | 100% maximum minus 70% productive level = 30% presenteeism |
| 6 | Hours of productivity lost to presenteeism | 150 hours worked multiplied by 30% presenteeism loss = 45 hours of presenteeism |
| 7 | Combination of hours of absenteeism reported and hours of estimated presenteeism | 10 hours absenteeism + 45 hours presenteeism = 55 hours total LPT |

**Table B5.** *Mix of EAP Cases Within Each Industry Type at Each Phase of Data Collection and Total Sample*

| **Industry** | Phase 1 ($n$ = 34,587) % | Phase 2 ($n$ = 50,845) % | Total ($N$ = 85,432) % |
|---|---|---|---|
| Manufacturing/Distribution | **25.4** ($n$ = 8,793) | **16.9** ($n$ = 8,596) | 20.4 ($n$ = 17,389) |
| Healthcare | 21.0 ($n$ = 7,275) | 16.8 ($n$ = 8,519) | 18.5 ($n$ = 15,794) |
| Banking/Financial | 14.1 ($n$ = 4894) | 13.8 ($n$ = 7,001) | 13.9 ($n$ = 11,895) |
| Transportation | **1.9** ($n$ = 654) | **18.8** ($n$ = 9573) | 12.0 ($n$ = 10,227) |
| Restaurant/Retail | **7.2** ($n$ = 2,476) | **14.5** ($n$ = 7,393) | 11.6 ($n$ = 9,869) |
| Education | **12.7** ($n$ = 4,386) | **7.1** ($n$ = 3,634) | 9.4 ($n$ = 8,020) |

| | | | |
|---|---|---|---|
| Government/Municipality | **10.1** ($n$ = 3,487) | **5.7** ($n$ = 2,882) | 7.5 ($n$ = 6,369) |
| Technology | 7.6 ($n$ = 2,622) | 6.4 ($n$ = 3,247) | 6.9 ($n$ = 5,869) |
| Test: | $X^2(7,85432) = 8095.26$, $p < .001$, $\eta_p^2 = .095$ **medium size statistical effect** | | |

## APPENDIX C

*LPT Details for Absenteeism and Presenteeism by Industry*

**Table C1.** *Industries Compared on Work Outcomes of Hours of Absenteeism, Hours of Presenteeism and Total Hours of LPT in the Maximum Sample at Pre and in the Longitudinal Subsamples at Pre and Post: Work Problem Cases Only*

| Work LPT | **Industry Type** | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Manufact | Transport | Tech | Rest&RT | Gov | Financial | Educ | Health |
| Pre – Maximum sample size | **Hours of Lost Productive Time (LPT) for Work** If Work Problem at Pre – Total Cases with Valid Data at Pre ($n$ = 38,140) | | | | | | | |
| Total $n$ cases | 7,494 | 4,979 | 2,464 | 5,211 | 2,690 | 5,244 | 3,292 | 6,766 |
| Absenteeism | 8.23 | 8.34 | 6.65 | 8.74 | 8.37 | 7.57 | 6.23 | 7.81 |
| Presenteeism | 56.56 | 56.83 | 56.57 | 56.92 | 55.93 | 56.67 | 57.33 | 56.65 |
| Total | **64.79** | **65.17** | **63.22** | **65.66** | **64.3** | **64.24** | **63.56** | **64.46** |
| If Work Problem at Pre – Longitudinal Cases with Valid Data at both Pre and Post ($n$ = 3,636) | | | | | | | | |
| Total $n$ cases | 983 | 277 | 261 | 389 | 299 | 437 | 369 | 621 |
| **Pre Longitudinal** | | | | | | | | |
| Absenteeism | 12.28 | 11.42 | 10.81 | 10.84 | 13.19 | 12.76 | 11.39 | 12.32 |
| Presenteeism | 51.77 | 55.23 | 50.16 | 52.14 | 51.26 | 49.67 | 51.68 | 51.98 |
| Total | **64.05** | **66.65** | **60.97** | **62.98** | **64.45** | **62.43** | **63.07** | **64.30** |
| **Post Longitudinal** | | | | | | | | |
| Absenteeism | 1.21 | 1.13 | 1.42 | 1.74 | 1.45 | 1.43 | 2.57 | 1.28 |
| Presenteeism | 21.41 | 22.16 | 20.72 | 22.87 | 22.77 | 22.17 | 22.27 | 22.54 |
| Total | **22.62** | **23.29** | **22.15** | **24.61** | **24.22** | **23.60** | **24.84** | **23.82** |

*Note*: Manufact = Manufacturing and Blue Collar; Transport = Transportation; Tech = Technology; R&RT = Restaurant and Retail Trade; Gov = Government and Municipality; Financial = Financial/Insurance/Other Business; Educ = Education; Health = Healthcare. Mean hours of LPT at Pre and at Post for industry groups in al samples adjusted by data collection phase and referral type. Tests for differences between industries for level of outcome and for extent of change after EAP use in average hours of absenteeism per case and for level of outcome and extent of change after EAP use in average hours of presenteeism per case were all non-significant ($p > .05$).

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