In-person EAP Counseling: Profile of 35,228 Cases and Tests of Depression, Anxiety, Alcohol and Work Outcomes at CuraLinc Healthcare 2017-2023

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Abstract: This applied study examined client characteristics and outcome data for users of brief counseling treatment delivered by licensed counselors in-person at clinic office settings. A sample of 33,228 clients was obtained from archival records of the normal course of business at CuraLinc Healthcare, which is a national employee assistance program (EAP) service provider in the United States. Based on a 7-year naturalistic study design, we profiled who the users are, how and why the counseling was used and what impact it had on their health and work. Almost all of the clients were employees (98%; 2% family) and voluntarily used the EAP (97% self-referrals; 3% formal management referrals from work). There was a wide range between users for age (range 16-86 years; average 40) and gender (females 61%, males 39%). Many different industries were also represented (10+ types). The reasons why the EAP was used had substantial variation across mental health (63%), personal stress (20%), relationships and family life (20%), work (7%) and substance use (2%) issues. The duration of the counseling treatment per case spanned from 1 week to over 10 months, but most clients found relief after about two months of time engaging in talk therapy with their EAP counselor. Self-report outcomes were assessed with standardized measures. Prevalence rates for clinical status when starting counseling were: 39% at-risk for anxiety; 29% at-risk for depression; 14% at-risk for alcohol misuse; 39% at-risk for a work presenteeism problem; and 22% at-risk for a work absenteeism problem. At 30-days after completing counseling, improvements in the severity of symptoms and clinical recovery (i.e., changing from at-risk/unhealthy to no risk/healthy) were documented for each outcome. Longitudinal tests conducted within each clinically at-risk subsample of clients found significant improvement after counseling (all $p < .001$) with large size statistical effects: Anxiety severity (GAD-2) was reduced by 65% for the average at-risk case ($d = 1.71$) and 80% of the 124 at-risk cases recovered; Depression severity (PHQ-2) was reduced by 50% ($d = 1.91$) and 78% of the 281 at-risk cases recovered; Alcohol misuse (AUDIT-3) was reduced by 53% ($d = 1.48$) and 76% of the 307 at-risk cases recovered; Work absenteeism per past 30 days (Workplace Outcome Suite) was reduced by 88% from 25 hours at Pre to 4 hours at Post ($d = 1.63$) and 88% of the 1,101 at-risk cases recovered; and severity of work presenteeism (i.e., lack of focus and performance while working; WOS or Stanford Presenteeism Scale) was reduced by 47% for the average case ($d = 1.71$) and 88% of the 1,217 at-risk cases recovered. Overall, the broad appeal and high level of effectiveness of in-person delivered counseling for health and work outcome areas confirms this kind of delivery context is an important option for EAPs and other workplace mental health support services. Comparisons with past research, study limitations, and implications are also discussed.

Index Terms: absenteeism, alcohol, anxiety, counseling, depression, employee assistance program, in-person, presenteeism, work

I. INTRODUCTION

The need for employers to support the mental health of working adults is widely acknowledged [1-5]. Failing to do so can result in personal harm to employees and is costly to businesses in areas of health care [6,7], lost work productivity [8-10], turnover [11], and even accidents [12] or death [13]. Historically mental health and substance misuse disorders affect about 20% to 30% of all employees each year and up to one-half of employees in their lifetimes [14-17]. Prevelence rates for behavioral health issues increased slightly during the COVID-19 global pandemic that started in early 2020 [18-22]. One of the consequences of the pandemic was that during the initial periods of restricted or no-contact conditions needed to prevent the transmission of virus, there was a greater reliance on the delivery of clinical services using remote technology channels (such as telephone, online video, email or text) rather than in-person office settings involvinig face-to-face contact [23,24]. This switch to technology-based service delivery for mental health services has not eliminated the need for in-person counselors, however, as many studies show that up to half (or more) of mental health patients report they they prefer to see a therapist in-person for mental health support [25-29].

This study explores the in-person context for clinical service delivery and examines the level of effectiveness on common behavioral health and work-related outcomes in recent data from a large sample of users of indivdual counseling from an employee assistance progam (EAP). Being able to provide different access points and options for the delivery of counseling to employees is important not only because many clients continue to prefer to use in-person care, but also because of the recent emergence of digital mental health providers who offer either no or very limited options for in-person counseling [30,31].

1.1. Behavioral Health Conditions

Mood disorders are psychiatric conditions involving a prolonged, pervasive emotional disturbance, such as a major depression, bipolar depression and substance-induced mood disorder [32]. Suicide risk is also linked to more severe depression. Anxiety disorders have a theme of the emotional state of fear, worry, or excessive apprehension. Types of anxiety disorders include generalized anxiety disorder, panic disorder and various kinds of phobias (such as social phobia or a specific phobia). According to large population-based epidemiologic surveys in the U.S., up to a third of people will be affected by a mood or anxiety disorders during their lifetime [15,30]. The annual prevalence rate for these disorders is lower and the best epidemiologic data suggests that about 10% to 15% of working Americans each year are at risk for anxiety and/or depression disorders [14]. This annual rate doubles to the 20% to 25% range when adding in all of the other kinds of psychiatric and substance use related disorders and considering the overlap or comorbidity between anxiety and mood disorders [16,17].

Alcohol and other substance addictions are widely experienced in the workforce with serious implications for employers [16,17,33]. National risk surveys consistently have estimated about 1 in 10 workers in the U.S. report heavy alcohol use and up to one-third are binge drinkers. In addition, over a third of people with alcohol problems have a high rate of also having another kind of addiction or have a mental disorder. Unlike most other costly chronic health conditions that plague the aged, mental health and substance abuse disorders typically first take hold in adolescence or young adulthood and thus affect people in their prime working years.

1.2. The Role of EAPs

Employee assistance programs are a popular resource for employers to use in their efforts to manage these kinds of behavioral health risks of the workforce [32-35]. EAPs are employer-sponsored programs designed to help workers resolve acute but modifiable behavioral health issues. They are a work-based intervention program designed to restore the emotional, mental and general well-being of employees or their family members (when also given access to the benefit). EAPs offer professional assessment and short-term counseling for individuals who typically present at the EAP with a wide range of behavioral health, personal life and work-related issues.

Recent data indicates almost 75 million workers in the U.S. have an EAP benefit available to them to use if needed [36]. U.S. Bureau of Labor surveys reveal that having an EAP is far more common as the size of the employer increases. In the privater sector, 32% of employers with under 100 workers have EAP, 68% of employer with 100-499 workers have an EAP and 86% of employers with 500 or more workers have an EAP. Overall, 3.2 million private sector employers sponsor an EAP as do an additional 182,000 public sector organizations, including the federal government [36]. EAPs are also common at most larger employers in Canada [37,38] and are increasingly popular in many other countries around the world [39].

A full-service EAP can provide brief counseling through multiple kinds of remote access channels as well as from in-person (face-to-face) office settings [44]. EAP counseling offices can be located onsite at the employer's worlplace but more commonly they are located somewhere in the local community to provide more privacy to the clients. EAPs, like other health providers [23,24], had to shift their service delivery options during the COVID-19 pandemic to emphasize remote care through technology-based options [40-43]. But now in year 2023, as the pandemic has largely subsided and most workplaces and social interactions have returned to pre-COVID-19 levels of operation, there has been a resurgence of interest from employers and from employee users in having counseling by their EAP delivered face-to-face in private office settings rather than virtually delivered using remote technology [45,46]. Indeed, an industry survey conducted in 2023 of over 200 EAP industry professionals found that providing "counseling by licensed human providers" was the single most important service attribute that EAPs can offer (95% rated it as high importance) [47]. The same survey found that only 63% of respondents considered "technology self-care and counseling" to be of high importantce to defining what an EAP should be.

1.3. In-Person Delivered Psychological Treatment

Face-to-face behavioral health treatments provided by licensed professional therapists are empirically supported and widely used. The success rates for the professional treatment for some of the most common mental health disorders using the traditional models of in-person contact between client and patient contact are quite high. Meta-analysis reviews of the results from thousands of high-quality studies have concluded that outpatient mental health treatment delivered in-person is largely effective at improving many aspects of

patient functioning and work performance [48-50]. Similarly, the in-person counseling provided by EAPs for distressed workers also tends to have a high level of clinical success. There is substantial evidence for this statement from 17 different scholarly reviews of the body of EAP counseling research published over the last 50 years [51-67]. Indeed, the in-person counseling context has often been used as the benchmark for judging the quality and effectiveness of telephone [68-73] or online video modalities [74-77] of service provision.

1.4. Project Opportunity

CuraLinc Healthcare is a global external vendor of EAP services, based in the United States. In business since 2008, it has over 3,800 employer customers that offer the EAP as a benefit to over 7 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 independently licensed, masters 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 fifth in a series of projects completed in collaboration with this EAP [78-81].

1.5. Research Questions and Hypotheses

We wanted to leverage the client background and operational data available in our study to profile the users of in-person counseling and to determine the initial levels of risks for clinical and work problems among this population of service users. Thus, we proposed the following research questions:

- *RQ1*: What is the demographic, employer and clinical experience profile of users of in-person counseling?
- *RQ2*: What is the behavioral health and work risk factor profile of users of in-person counseling?

Given the positive results in the literature on the general effectiveness of in-person counseling by EAPs for mental health, alcohol and work outcomes, we also expected to find positive changes in these outcomes after use of in-person counseling in this study. Thus, we proposed the following research hypotheses:

- *H1*: Among cases who started EAP use with a clinical level of depression, the severity level of depression symptoms will be reduced from Pre to Post use of the service for the typcial case and as a group a majority of clients will recover to no longer be at-risk.
- *H2*: Among cases who started EAP use with a clinical level of anxiety, the severity level of anxiety symptoms will be reduced from Pre to Post use of the service for the typcial case and as a group a majority of clients will recover to no longer be at-risk.
- *H3*: Among cases who started EAP use with a clinical level of alcohol misuse, the severity of symptoms of alcohol misuse will be reduced from Pre to Post use of the service for the typcial case and as a group a majority of clients will recover to no longer be at-risk.
- *H4*: Among cases who started EAP use with a problem level of work absenteeism, the number of hours of missed work will be reduced from Pre to Post use of the service for the typcial case and as a group a majority of clients will recover to no longer be at-risk.
- *H5*: Among cases who started EAP use with a problem level of work presenteeism, the severity level of presenteeism will be improved from Pre to Post use of the service for the typcial case and as a group a majority of clients will recover to no longer be at-risk.

II. METHODOLOGY

2.1. Archival Business Data

In this study we focused only on the clients who had chosen to get counseling from the EAP provided in-person (face-to-face) at a clinical office setting. Thus, all of the other users during this period of counseling delivered using technology channels (i.e., telephone or online live video) were excluded. Note that this in-person only sample of clients was included as part of the larger samples of service used examined in previous studies from this same EAP [78-81].

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 73 months, from the start of April of 2017 through the end of May 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 June 19 of 2023. 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 sample at Pre included 35,228 clients who worked at over 1,800 different employers in the United States.

The first kind of data came from the operational business processes used by the staff and counselors who provided the counseling services. Part of this process involves recording core aspects of the business customer context, employee demographics and the clinical experience. For this study we extracted the following information from the operational data system: name of employer/customer, 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), primary clinical issue (alcohol, depression, work and so on) and the clinical modality (limited to in-person for this study).

2.2. Counseling Intake, Intervention and Follow-up

As per the CuraLinc clinical model, every employee who requested support 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 related fields.

During the initial assessment, the outcome measure(s) were collected, either over the telephone or from a brief online survey. The counseling was delivered via face-to-face sessions at the counselor's office. Participants had an EAP use model determined by their employer that limited the maximum number of counseling sessions allowed per treatment episode per case. This limit ranged as follows: 3 sessions per case = 11%; 4 sessions = <1%; 5 sessions = 40%), 6 session = 27%; 7 sessions = <1%; 8 sessions = 14%; 9 sessions = <1%; 10 sessions = 5%; or unlimited sessions = 2%). The typical case had a maximum of 5 or 6 sessions of counseling. The typical case engaged in treatment over a 53-day period (i.e., date of case open at first session to case close at last session; see Figure 1).

After the counseling treatment phase was completed, a Care Advocate conducted individual follow-ups with cases about 30 days after the last clinical session to assess the employees' clinical progress, use of any recommended additional support services and determine if any other referrals were needed. At this point, the second wave of data was collected for each relevant outcome measure. In all cases, the counselor who treated the employee was not the same person who collected the outcome data. Note, the total amount of time involved for each case to complete their use of the service and participate in the follow-up varied from case to case.
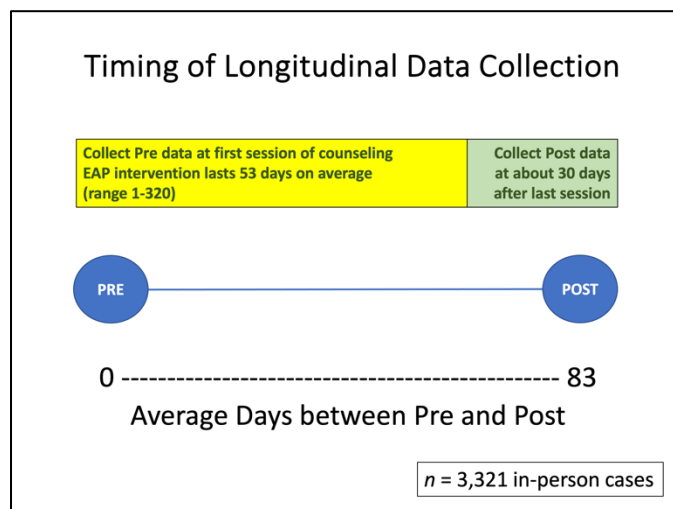

Figure 1: Timing of data collection for a typical in-person case.

2.3. Self-Report Outcomes Data

The outcomes were collected in two phases (see Appendix A). During Phase 1, 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 as the reason for using the EAP) whereas work outcome data at Pre was collected for cases regardless of the specific clinical issue. 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. The business needs and the unique individual preferences of the employees and/or the intake Care Advocates ultimately determined which specific cases participated in the outcomes study data collection efforts. The Post use data was collected routinely for cases that had the same outcome(s) collected

at the start of the program use. During Phase 2, shorter measures were used for depression, anxiety, alcohol, work absenteeism and work presenteeism and this entire set of five outcome measures were routinely collected for as many cases as possible at Pre and at Post.

2.4. Outcome 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. All measures had acceptable levels of psychometric validity and reliability. Data collection occurred in two phases, with four of the five outcomes measured across both phases and some specific outcomes measures being the same over time while others were different in each phase (see Appendix A).

Mental Health. The mental health disorders of anxiety and depression severity were measured using The Patient Health Questionnaire 4-item brief scale (PHQ-4) [82,83]. This scale combines two items from the Generalized Anxiety Disorder full 7-item scale (GAD-7) [84-86] and two items from the full Patient Health Questionnaire 9-item scale for depression (PHQ-9) [87,88]. These measures have been used in thousands of research studies and more generally are used every day in healthcare service delivery. The instructions state: "Over the last 2 weeks, how often have you been bothered by any of the following problems?" Each item (see below) 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*.

Depression. The PHQ-2 is created by adding together the scores for the two depression questions: "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 at risk status for depression was categorized as scores of 3 or higher [83]. This scale had excellent measurement reliability as demonstrated by high internal consistency (α = .86, *n* = 14,422 at Pre).

Anxiety. The GAD-2 is created by adding together the scores for the two anxiety questions: "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 at-risk status for anxiety was categorized as scores of 3 or higher [83]. This scale had excellent measurement reliability as demonstrated by high internal consistency (α = .89, *n* = 10,824 at Pre).

Alcohol Misuse – AUDIT 3-item Scale. Developed by the World Health Organization (WHO), the Alcohol Use Disorders Identification Test is a 10-item scale (AUDIT-10) [89,90]. 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 [90,91]. 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 [91]. This scale had excellent measurement reliability as demonstrated by high internal consistency (α = .86, *n* = 12,110 at Pre).

Work Absenteeism. Developed by Chestnut Global Partners [92-94], the Workplace Outcome Suite (WOS) is a validated questionnaire with five outcomes that has been used in over 40 EAP studies [95-99]. One of the five outcomes on the WOS is work absenteeism (another is work presenteeism – see next part). The original scale from 2010 had five questions on different contexts of absence and the revised measure from 2014 has one comprehensive item for absence hours [93,94].

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. Similar to past research [98,99] that has analyzed EAP users in samples with both the five item and the single item version of the WOS absenteeism data, we used only the first three items from the original scale as the sum for data collected in Phase 1. 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 [93,94]. 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 – full sample metric. The absence data from clients in Phase 1 came from the original WOS scale (using 3 of the 5 items) and the absence data from clients in Phase 2 came from the revised WOS scale (with just one item). 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 [98]) problem status for work absenteeism was defined as 4 or more hours of absence (4-159 hours). Based on past research using the WOS [98,99] 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 Presenteeism. This outcome was assessed using two different measures over the seven-year 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 [100-102]. 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). 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. Half of the 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 ($\alpha = .94$, $n = 19{,}957$ at Pre).

Note that the creators of this scale defined presenteeism as a positive aspect of work productivity [100]: "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 negatively as a problem of not being psychologically present enough while working to perform properly [103,104]. For example, Cooper and Dewe [105] 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 measured on the WOS – 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.

To allow us to conduct similar analyses of a change in "at-risk status" for this scale (like for the clinical outcomes), we split the distribution of SPS-6 scores into two groups of at-risk (i.e., demonstrating a presenteeism problem) or not at-risk. We defined a cutoff score on the average rating for the SPS-6 (i.e., the scale summary score of 6 to 30 and divided it by 6) at 3.51 though 5.00 that was in the high or very high presenteeism range (i.e., the agree or strongly agree range on the 1-5 rating scale – same as the WOS Presenteeism item – see below) as having a "problem" with work presenteeism.

Work Presenteeism – WOS single item.   The single-item version of the Presenteeism Scale from the Workplace Outcome Suite is a widely used measure in the EAP field [93-99]. 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*. Following past research on the WOS [98,99], "problem" status for work presenteeism was defined on this measure as a rating of 4 or 5 (somewhat agree or strongly agree).

2.5. Longitudinal Follow-up

The criteria for inclusion in the longitudinal group for each outcome was having the outcome measure collected for all items on the relevant measurement scale both at the start of the counseling and at the follow-up for the same case (Pre and Post). As expected, the longitudinal sample size varied for each outcome measure. The valid samples of longitudinal clients represented about 3% to 15% of total relevant EAP in-person participants, depending on the different measures. Note that it is typical in EAP outcomes research to successfully engage about 10% of counseling cases involved in longitudinal follow-up data collection [98,106-108]. Statistical analyses verifying the representativeness of the longitudinal subsamples for each outcome are presented in Appendix B. Overall, the results indicated that the in-person cases in the longitudinal samples for each outcome had the same level of severity on the outcome 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 in-person cases who did not engage in the follow-up process. Thus, the test results support the representativeness of the longitudinal samples.

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 (χ^2) non-parametric test procedures. The tests of improvement over time (Pre to Post) in the outcome measures were conducted using paired *t*-tests. For the sub-groups of cases at-risk for depression, at-risk for anxiety, or at-risk for alcohol misuse, problem status absenteeism and problem status presenteeism, we determined the percentage of cases who had recovered at post to no longer be at risk or to not have the problem anymore.

2.7. Statistical Power and Effect Size

With different sample sizes for each outcome, we assessed the power to detect a particular finding as being statistically significant [109]. 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. For correlations we followed the general guidelines for small effect = *r* in range of .10 to 19; medium effect = *r* in range of .20 to 29; and for large effect = *r* of .30 or greater [110]. The Cohen *d* statistic for group differences can range from 0 to over 2.0 and followed guidelines for small effect = *d* in range of .20 to 49; medium effect = *d* in range of .50 to 79; and for large effect = *d* of .80 or greater [111]. The partial eta squared (η_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 [112]: 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. 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 [113]. 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 [78-81,96,108,114-116].

<div align="center">III. RESULTS</div>

PART 1: Descriptive Profile of In-Person Cases

3.1. Profile of Study Sample at Pre

The total sample included 35,228 users of the EAP. These users had access to the EAP benefit from 1,823 different employers located throughout the United States. These profile details are shown in Table 1. Program use spanned seven years with thousands of active in-person cases documented each year (see Figure 2). The industry of the employer varied as this data was from a national sample in the United States. The most prevalent industry represented among the users was health care (20% of all cases), followed by manufacturing (16%), blue collar (13%), financial/insurance/management (white collar jobs; 12%), education (10%), retail/restaurants (10%), government/public service (9%), technology (7%) and 3% for "other" (see Figure 2).

Most of the EAP users were employees (98%), although 2% of study sample were a family member of an employee with the EAP benefit. Almost all of these users (97%) had voluntarily sought out the service (i.e., self-referral or referral from a family member/other) with only 3% being formally referred to use EAP counseling by their manager at work (see our other paper profiling this special group [80]). These findings are shown in Figure 3.

Demographic factors of age and gender were collected (see Figure 4). Most of the clients were females (61%; males 39%) and the age ranged considerably from the late teens to over 80, but the average client was about 40 years old.

Clinical use factors of the primary presenting issue and the duration of treatment with the counselor were collected (see Figure 5). When asked by the counselor, 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 (50%), followed by personal stress issues (20%), marriage and family issues (20%), work-related issues (7%), or issues for substance use involving alcohol, drugs or other addictions (3%). Most clients engaged in multiple counseling sessions over a two-month period, with the average being 53 days (range 1 to 320; median 45).

Table 1. Profile in-person counseling cases at start of EAP use.

| Factor	n count	% of cases
Delivery context – in-person	35,228	100%
Employee status of case	All	
Employee with EAP benefit	34,698	98%
Family of covered employee	530	2%
Referral source into EAP	All	
Self / family / other	34,107	97%
Formal management at work	1,121	3%
Age of client	33,411	
Under 30 years	7,183	21%
30-39 years	10,348	31%
40-49 years	7,932	24%
50 plus years	7,948	25%
Average years (min-max)	40.08 (16-86)	
Gender of case	34,915	
Female	21,226	61%
Male	13,689	39%
Industry of employer	All	
Health care	7,061	20%
Manufacturing	5,717	16%
Blue collar	4,438	13%
Financial/Insurance/Mgt.	4,413	12%
Education	3,612	10%
Retail/Restaurant	3,406	10%
Gov./Public Service	3,299	9%
Technology	2,311	7%
Other	971	3%
Presenting issue	35,221	
Stress personal / other	7,321	20%
Marital or family relationship	6,966	20%
Depression	6,276	18%
Anxiety	5,352	15%
Other mental health	6,099	17%
Work stress	2,543	7%
Substance use – drug	445	1%
Substance use – alcohol	219	<1%
Duration of EAP use (if have post data with specific date)	3,321	
1-30 days	941	28%
31-59 days	1,557	47%
60-89 days	373	11%
90 plus days (max 320 days)	450	14%
Average:	53 days	
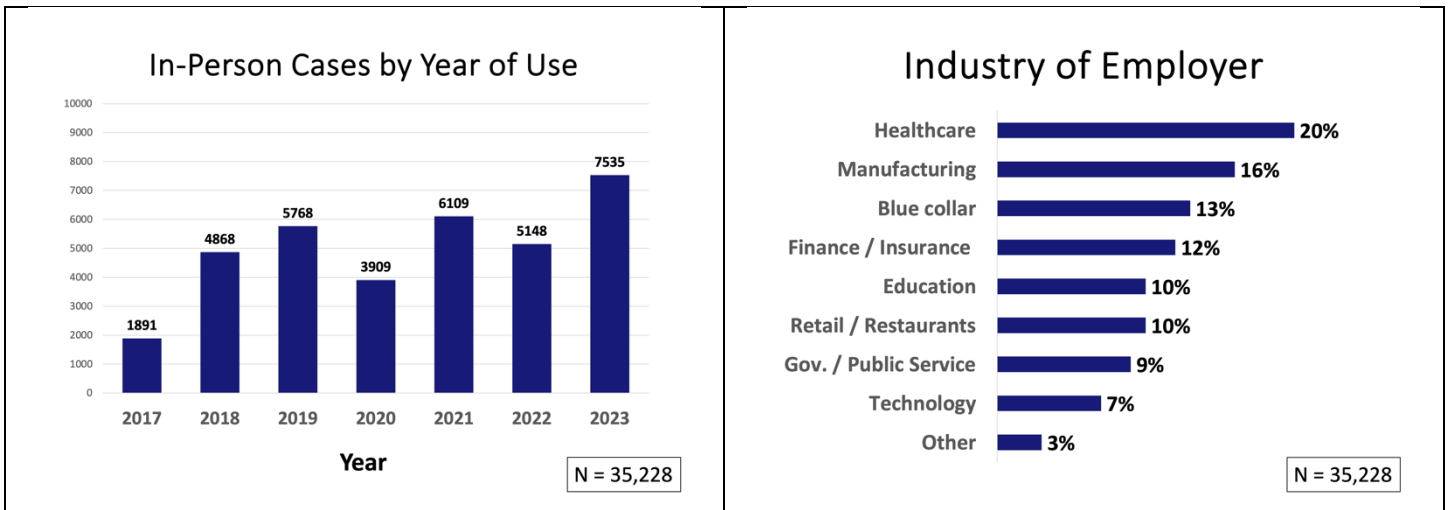
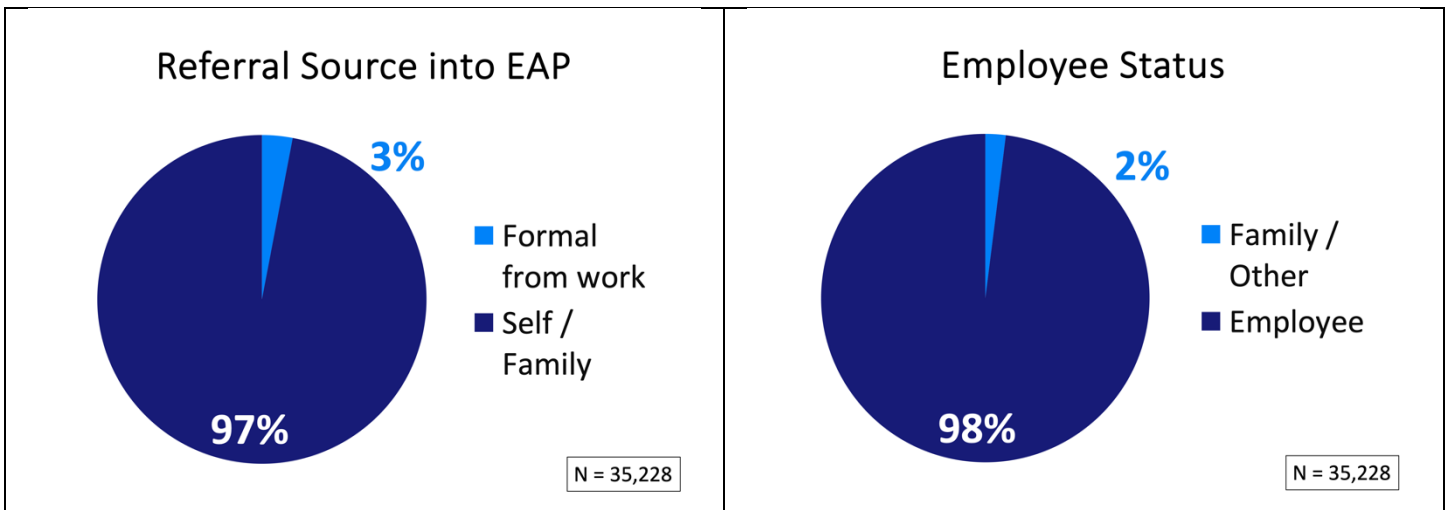**Figure 2.** Profile of sample by year of use and industry of employer.

Figure 3. Profile of sample by referral source and employee status.
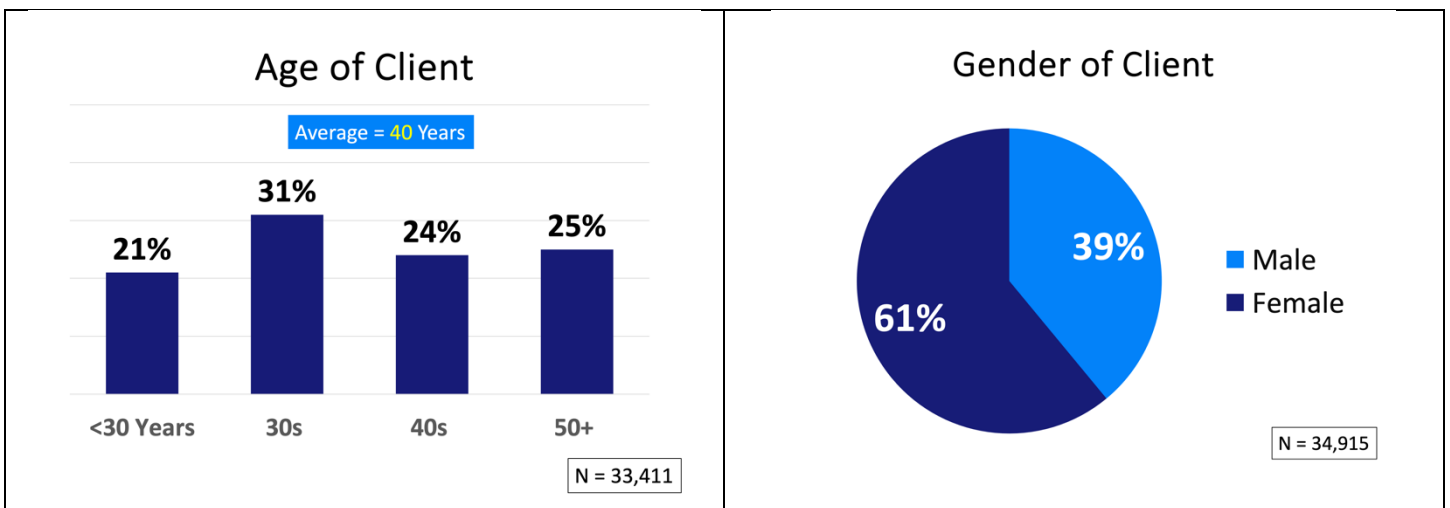

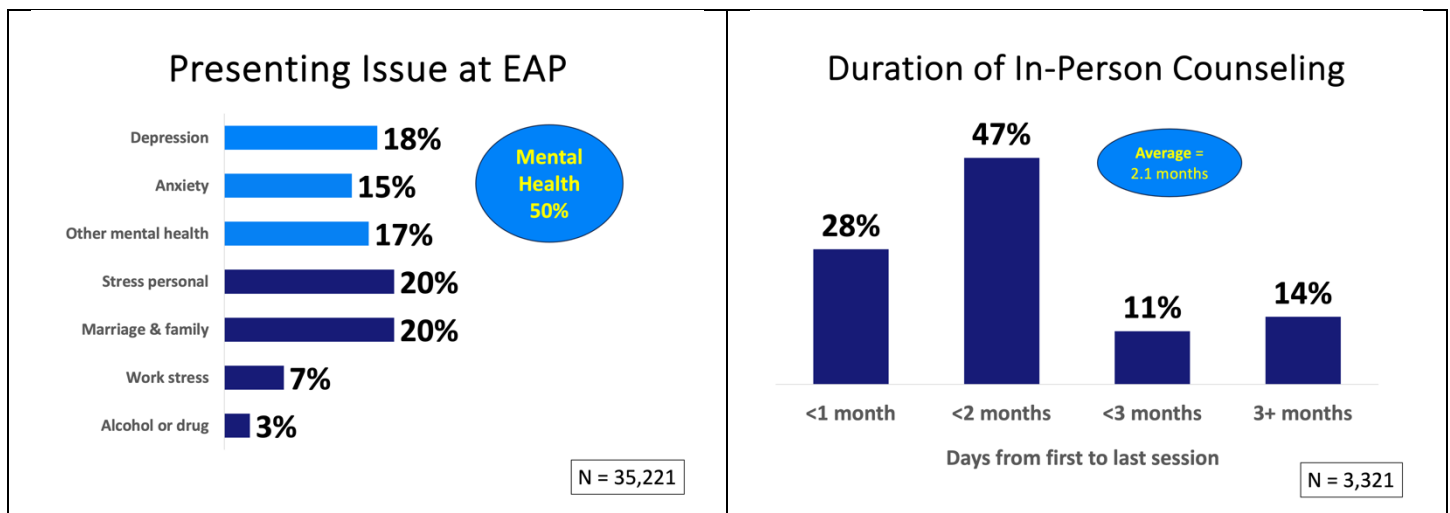**Figure 4.** Profile of sample by age and gender.

Figure 5. Profile of sample by presenting issue and duration of treatment with EAP.

3.2. Correlation of Outcome Measures Within Cases at Start of Counseling

The five outcome measures were all correlated with each other in expected ways when tested in various samples consisting of the available valid cases with data on both measures at the start of counseling (see Table 2). Significant associations (all $p < .001$) were found in 9 of the 10 possible tests. More specifically, depression severity was associated with greater severity of anxiety ($r = .56$), greater alcohol misuse ($r = .22$), greater work absence ($r = .22$) and greater work presenteeism ($r = .23$). Anxiety had the same pattern of findings as depression, as greater severity of anxiety symptoms was positively associated with alcohol misuse ($r = .13$), absence ($r = .18$) and presenteeism ($r = .23$). In addition, more severe alcohol misuse was related to greater work absence ($r = .22$) but was unrelated to work presenteeism ($r = .04$). As expected, the two work outcomes were correlated with each ($r = .28$). This pattern of associations offers evidence for the convergent form of measurement validity for each outcome measure.

Table 2. Correlations between outcomes at start of EAP use.

	Outcome measure	Correlations at Pre				
		1	2	3	4	5
1	Depression severity	1.0	.56***	.22***	.22***	.23***
			($n = 10824$)	($n = 10719$)	($n = 12555$)	($n = 12257$)
2	Anxiety severity		1.0	.13***	.18***	.22***
				($n = 10452$)	($n = 10738$)	($n = 10738$)
3	Alcohol misuse			1.0	.22***	.04
					($n = 11469$)	($n = 11304$)
4	Work absenteeism				1.0	.28***
						($n = 29349$)
5	Work presenteeism					1.0
	M	2.25	2.50	1.96	0.96	2.96
	SD	1.96	2.00	2.97	1.92	1.31
	n cases maximum	14,422	10,824	12,110	31,667	30,695

Note: Pre = start of counseling for each case. Absenteeism was tested using a square root transformed version to reduce skew.
*** $p < .001$

Note the greatest overlap among these measures was between the two mental health risk factors of depression and anxiety. Of clients with both measures completed in the Phase 2 data ($n = 10,824$), this co-morbidity was evident with 22% of the cases being at-risk for both clinical anxiety and clinical depression. Our finding of the large size effect for the co-morbidity between depression and anxiety symptoms has also been widely documented in past research, as has our finding of a weaker level of co-morbidity between alcohol misuse and mental disorders [117-119].

3.3. Correlation of Outcome Measures at Start of Counseling with Other Client and Context Factors

The five outcome measures at Pre were also tested for possible associations with client demographic, employer and EAP use context factors (see Table 3). Only 7 of the 30 tests yielded a meaningful finding defined as at least a small effect (i.e., *r* of .10 or higher).

Table 3. Correlations of outcomes at start of EAP use and context factors.

Context factor	Outcome measure – Severity level at Pre				
	Depression	Anxiety	Alcohol Misuse	Work Absenteeism	Work Presenteeism
Age of client (years)	-.08*** ($n = 14034$)	-.08*** ($n = 10501$)	-.01 ($n = 11784$)	-.02 ($n = 30379$)	-.02 ($n = 29287$)
Gender of client (female)	.02 ($n = 14176$)	.07*** ($n = 10501$)	**-.22*** ($n = 11878$)**	-.01 ($n = 31368$)	.00 ($n = 28987$)
Industry of employer	.08*** ($n = 14422$)	.06*** ($n = 10824$)	**.17*** ($n = 12110$)**	.06*** ($n = 31667$)	.06*** ($n = 30695$)
Referral type (formal)	-.06*** ($n = 10824$)	-.06*** ($n = 10824$)	**.11*** ($n = 12110$)**	**.11*** ($n = 31667$)**	.04 ($n = 30695$)
Presenting issue match outcome[a]	**.38*** ($n = 14421$)**	**.22*** ($n = 10823$)**	**.56*** ($n = 12109$)**	.03 ($n = 31661$)	.08*** ($n = 30690$)

Note: Total $N = 35,228$. Absenteeism tested using a square root transformed version to reduce skew. Gender of client coded as male = 1 and female = 2. Referral coded as self = 1 and formal by management at work = 2. Industry shows r from chi-square tests.
[a] Presenting issue match with outcome measure: Depression severity with issue of depression (yes = 1, no = 0); Anxiety severity with issue of anxiety (yes = 1, no = 0); Alcohol misuse severity with issue = alcohol (yes = 1, no = 0). Work absenteeism severity with issue = jobs stress (yes = 1, no = 0); Work presenteeism severity with issue of jobs stress (yes = 1, no = 0).
*** $p < .001$ but correlations r less than .10 are trivial effect size and thus of no practical value. Meaningful correlations with at least a small effect size are noted in **bold** font.

Demographic factors had little to do with the levels of the outcomes at the start of EAP use. Age of the client was unrelated to all five outcomes. Gender of the client was also unrelated to most outcomes.

However, males tended to have greater alcohol misuse than females ($r = -.22$). Accordingly, the percentage of cases who were at clinical at-risk status on the alcohol misuse measure when starting counseling varied by gender: 29% of men vs. 20% of women. The percentage of cases who were at clinical at-risk status on alcohol misuse when starting counseling also varied by referral type: 45% of formal referral cases by manager at work vs. 23% of self/family referral cases. The hours of missed work in the past month before starting counseling also varied by referral type: average of 11.6 hours for formal referral cases vs. average of 4.4 hours for self/family referrals. Thus, the very small percentage of formal referral cases had - on average - about three times the level of absence compared to self-referral kinds of cases. Perhaps this higher-than-normal level of work absence contributed to why these cases were referred by their manager at work to get counseling from the EAP. The percentage of cases within each industry type who were at clinical at-risk status on alcohol misuse when starting counseling varied by industry: 38% manufacturing; 23% retail/restaurant; 22% government; 22% healthcare; 21% blue collar; 20% white collar; 17% technology.

The presenting issue topic for EAP clients was strongly associated with initial severity levels of the clinical outcome measure with the same topic. Depression symptoms were strongly associated with the presenting issue being depression-related ($r = .38$). Anxiety symptoms were strongly associated with the presenting issue being anxiety-related ($r = .22$). Alcohol misuse symptoms were strongly associated with the presenting issue being alcohol-related ($r = .56$). 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 only weakly related to clients having a presenting issue that involved job stress or work-related issues. These last findings were expected, though, as absenteeism and presenteeism are potentially relevant to all workers regardless of their specific therapeutic issues guiding their use of the EAP.

PART 2: Clinical Outcomes for In-person Cases

3.4. Depression Outcome Results

Depression: Clinical Status at Pre for All Cases. Among the cases with data on the PHQ-2 at Pre from Phase 2 of data collection (which involved almost all EAP users during that period), 28.9% ($n = 3,132$ of 10,824 total) met the criteria for clinical depression disorder when starting EAP counseling. Thus, about 1 of every 3 users of in-person counseling were depressed.

Depression: Change in Clinical Status from Pre to Post for All Cases. Among the cases with paired data on the PHQ-2 at Pre and at Post from Phase 2 of data collection ($n = 380$), 22.9% ($n = 87$) met the criteria for clinical depression disorder when starting EAP use. But after completing the in-person counseling, this dropped to only 5.8% of all cases ($n = 22$). This change was significant, $X^2(1,380) = 53.29$, $p < .001$.

Depression: Recovery for Clinical Cases. Of those cases at-risk for clinical depression at the start of therapy from both phases of data collection, 78% (220 of 281) recovered at Post to no longer be at-risk (see Figure 6).

Depression: Reduction in Severity Score for Average Clinical Case. A paired t-test found that the level of symptom severity for the average case with clinical depression at the start was 60% lower at the follow-up for cases with longitudinal data on the PHQ-2: Pre $M = 4.53$ (SD = 1.11) > Post $M = 1.80$ (SD = 1.42), $t(1,280) = 32.09$, $p < .001$, $d = 1.91$ (very large size statistical effect; see Figure 6).
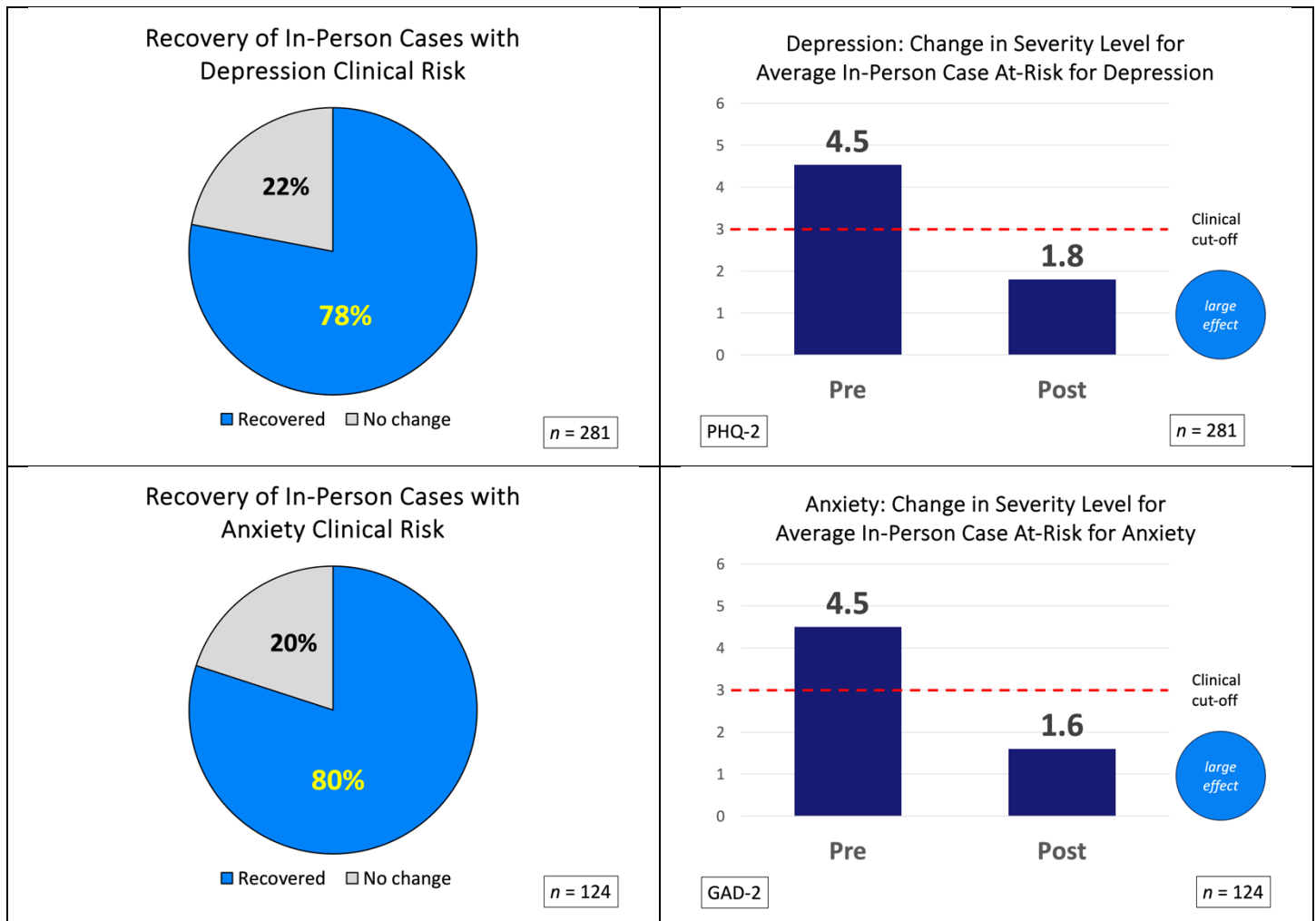

Figure 6. Top row: At-risk depression cases: Longitudinal results for recovery from clinical status and reduction in mean scores.
Bottom row: At-risk anxiety cases: Longitudinal results for recovery from clinical status and reduction in mean scores.

3.5. Anxiety Outcome Results

All anxiety outcome data was from Phase 2 of data collection (see Appendix A).

Anxiety: Clinical Status at Pre for All Cases. Among the cases with data on the GAD-2 at Pre from Phase 2 of data collection (which involved almost all EAP users), 38.5% ($n = 4,164$ of 10,824 total) meet the criteria for clinical anxiety disorder when starting EAP counseling. Thus, about 1 of every 3 users of in-person counseling were anxious.

Anxiety: Change in Clinical Status from Pre to Post for All Cases. Among the cases with paired data on the GAD-2 at Pre and at Post from Phase 2 of data collection ($n = 380$), 32.6% ($n = 124$) met the criteria for clinical anxiety disorder when starting EAP use.

But after completing the in-person counseling, this rate dropped to only 7.6% of all cases ($n = 29$). This change was significant, $X^2(1,380)$ = 40.99, $p < .001$.

Anxiety: Recovery for Clinical Cases. Of those cases at-risk for clinical anxiety disorder at the start of therapy from Phase 2 of data collection, 80% (99 of 124) recovered at Post to no longer be at-risk (see Figure 6).

Anxiety: Reduction in Severity Score for Average Clinical Case. A paired t-test found that the level of symptom severity for the average case with clinical anxiety at the start was 65% lower at the follow-up for the 124 cases with longitudinal data on the GAD-2 from Phase 2 of data collection: Pre $M = 4.50$ (SD = 1.11) > Post $M = 1.56$ (SD = 1.72), $t(1,123) = 19.12$, $p < .001$, $d = 1.71$ (very large size statistical effect; see Figure 6).

3.6. Alcohol Outcome Results

Alcohol: Clinical Status at Pre for All Cases. Among the cases with data on the AUDIT-3 at Pre from Phase 2, 13.9% ($n = 1,419$ of 10,223 total) meet the criteria for clinically hazardous use of alcohol when starting EAP counseling. Thus, about 1 of every 8 users of in-person counseling misused alcohol.

Alcohol: Change in Clinical Status from Pre to Post for All Cases. Among the cases with AUDIT-3 data at both Pre and Post from Phase 2 ($n = 350$), 20.2% ($n = 71$) met the criteria for hazardous alcohol use when starting EAP use. But after completing the in-person counseling, this clinical status rate dropped to only 4.6% of cases ($n = 16$). This change was significant, $X^2(1,350) = 31.40$, $p < .001$.

Alcohol: Recovery for Clinical Cases. Of those cases at-risk for hazardous use of alcohol at the start of therapy from both phases of data collection, 68% (209 of 307) recovered at Post to no longer be at-risk (see Figure 7).

Alcohol: Reduction in Average Severity Score for Clinical Cases. A paired t-test found that the level of symptom severity for the average case with clinical alcohol misuse at the start was 63% lower at the follow-up for cases with longitudinal data on the AUDIT-3 from both phases of data collection: Pre $M = 6.71$ (SD = 2.44) > Post $M = 2.47$ (SD = 2.21), $t(1,306) = 25.87$, $p < .001$, $d = 1.48$ (very large size statistical effect; see Figure 7).
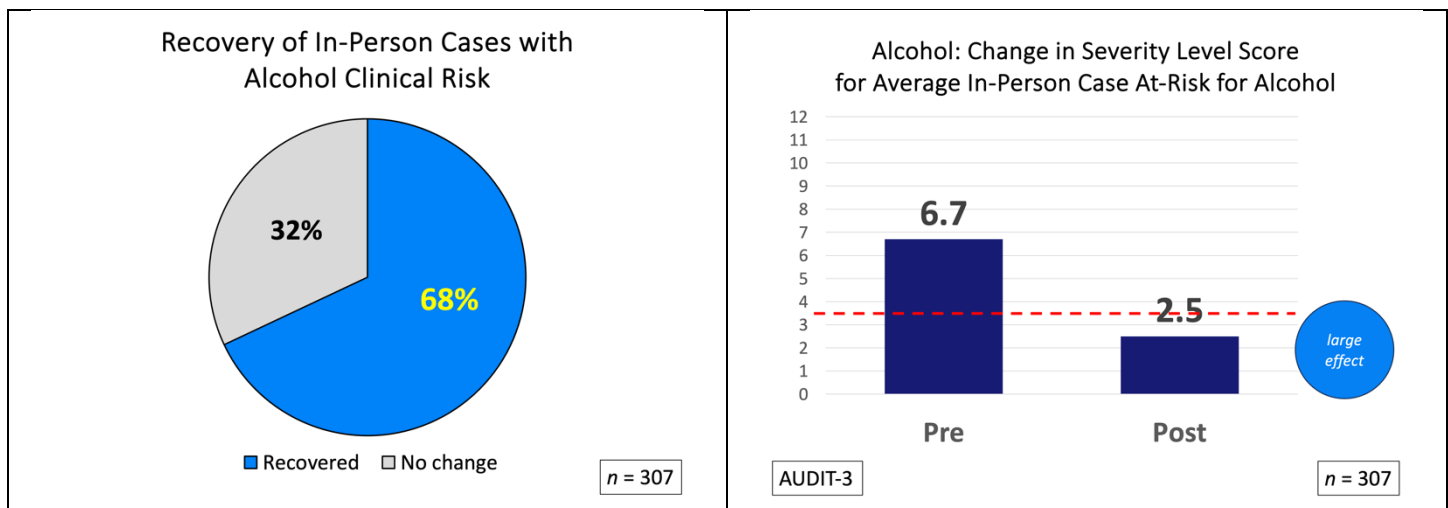

Figure 7. At-risk alcohol cases: Longitudinal results for recovery from clinical status and reduction in mean scores.

PART 3: Work Outcomes for In-person Cases

3.7. Work Absenteeism Outcome Results

Absenteeism: Problem Status at Pre for All Cases. Among the cases with valid absenteeism data at Pre, 21.6% ($n = 6,846$ of 31,667 total) meet the criteria for having a problem with absenteeism during the month before starting EAP counseling (i.e., missing 4 or more hours of work in the past 30 days). Thus, about 1 of every 5 users of in-person counseling had a work absence problem.

Absenteeism: Change in Problem Status from Pre to Post for All Cases. Among the cases with paired valid absenteeism data at Pre and at Post 30.7% ($n = 1,010$ of 3,289 total) had an absenteeism problem when starting EAP use. But after completing the in-person counseling, this dropped to only 5.6% of all cases ($n = 183$). This change was significant, $X^2(1,3106) = 130.25$, $p < .001$.

Absenteeism: Recovery for Problem Cases. Of those employees experiencing an absenteeism problem at the start of therapy, 88.0% (889 of 1,010) recovered at Post to no longer be at-risk and had a level of absence in the range of a typical employee (see Figure 8).

Absenteeism: Reduction in Average Hours Missed for Problem Cases. A paired *t*-test found that the number of hours of missed work in the past 30-days for the average case with an absenteeism problem at the start of treatment was 85% lower at the follow-up for cases with longitudinal data: Pre $M = 24.78$ (SD = 25.09) > Post $M = 3.84$ (SD = 14.80) for a difference of 20.94 fewer hours lost on average (see Figure 8). This outcome was tested, however, using a square root transformed measure of absenteeism hours: Pre $M = 4.53$ (SD = 2.07) > Post $M = 0.62$ (SD = 1.86), $t(1,1009) = 51.93$, $p < .001$, $d = 1.63$ (very large size statistical effect).
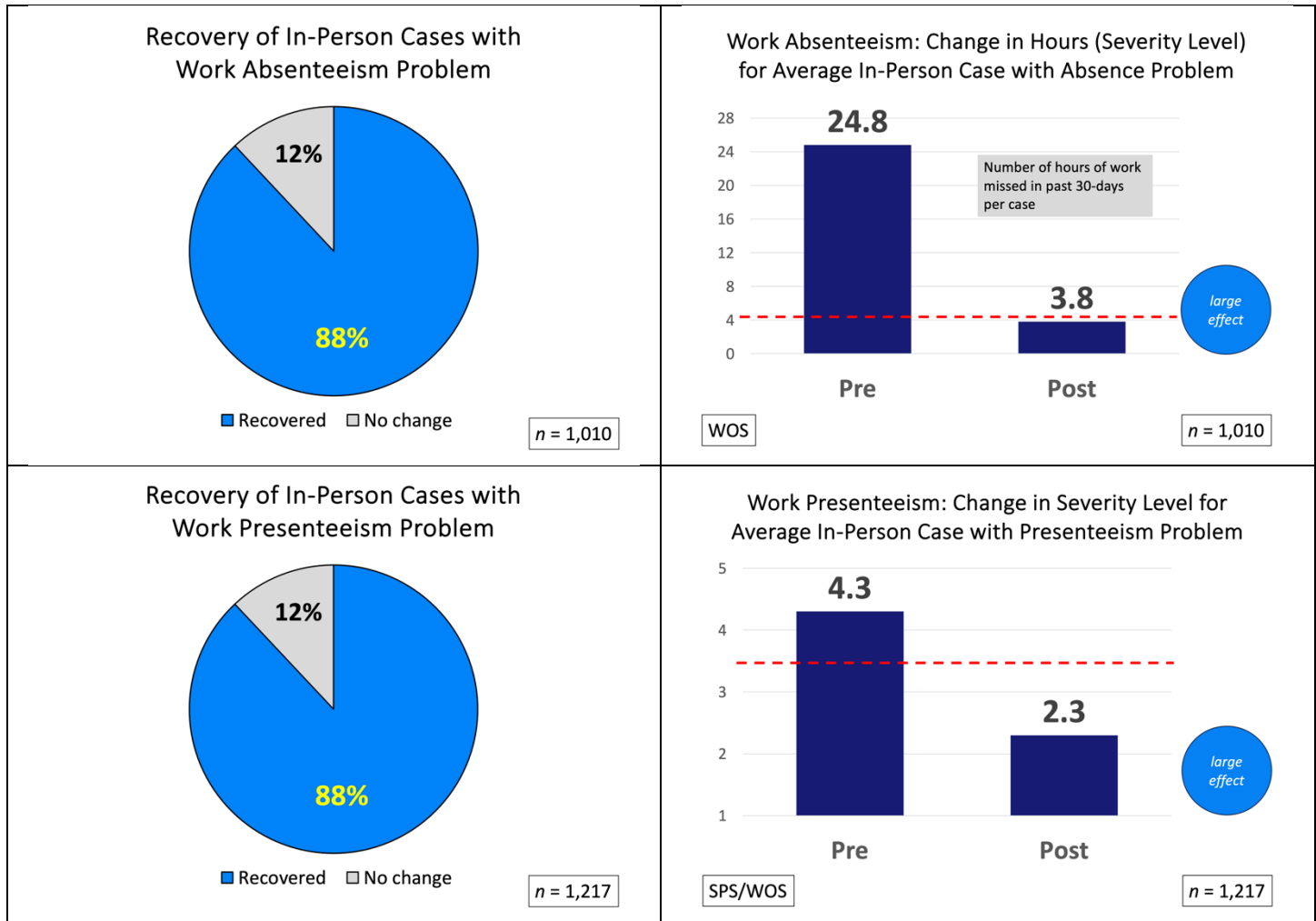

Figure 8. Top: At-risk work absenteeism cases: Longitudinal results for recovery from problem status and reduction in mean scores. Bottom: At-risk work presenteeism cases: Longitudinal results for recovery from problem status and reduction in mean scores.

3.8. Work Presenteeism Outcome Results

Presenteeism: Problem Status at Pre for All Cases. Among the cases with valid presenteeism data at Pre, 38.0% ($n = 11,660$ of 30,695 total) meet the criteria for having a problem with presenteeism while working during the month before starting EAP counseling. Thus, almost 4 of every 10 users of in-person counseling had a work presenteeism problem. Among cases with both work measures at Pre ($n = 29,349$ total), 24.8% had a problem only on presenteeism, 7.7% had a problem only on absenteeism and 13.3% had problem status on both absenteeism and presenteeism. Thus, close to half of all employees (46%) had a problem with one of both work areas when starting treatment at the EAP.

Presenteeism: Change in Problem Status from Pre to Post for All Cases. Among the cases with paired valid presenteeism data at Pre and at Post 36.0% ($n = 1,217$ of 3,380 total) had a presenteeism problem when starting EAP use. But after completing the in-person counseling, this dropped to only 5.7% of all cases ($n = 193$). This change was significant, $X^2(1,3380) = 139.60$, $p < .001$.

Presenteeism: Recovery for Problem Cases. Of those employees experiencing a presenteeism problem at the start of therapy, 88.0% (1,071 of 1,217) recovered at Post to no longer be at-risk and had a level of performance while at work that was in the range of a typical employee (see Figure 8).

Presenteeism: Reduction in Average Score for Problem Cases. A paired *t*-test found that the rating for level of presenteeism while working in the past 30-days for the average case with an presenteeism problem at the start of treatment was 47% lower at the follow-up for cases with longitudinal data: Pre $M = 4.29$ (SD = 0.52) > Post $M = 2.26$ (SD = 1.10), $t(1,1216) = 59.69$, $p < .001$, $d = 1.71$ (large size statistical effect; see Figure 8).

<div align="center">IV. DISCUSSION</div>

This study examined users of brief counseling provided in-person at office settings in the United States. The over 33,000 cases collected provided a very large sample in which to profile the users and their clinical experience with the employee assistance program. The applied naturalistic approach to the data collection process yielded groups of users for each outcome that had paired Pre and Post scores who fairly represented the larger groups of cases who did not complete the follow-up survey. The outcome measures used in this study all produced high levels of measurement reliability and validity. Another advantage was that the representativeness of the longitudinal samples for each outcome was validated by testing the users' demographic characteristics, program use experiences and starting level of the outcome measure compared to the larger group of cases with only Pre-test data. Thus, the project provided favorable conditions to find risk levels at the start of counseling and to test for improvements in anxiety, depression, alcohol misuse, absence and work presenteeism for clients of in-person counseling.

4.1. Descriptive Profile of Users of In-person Counseling

The diversity of these users of in-person counseling is seen in the findings obtained from Part 1 of the results. There was a wide range between users for demographic factors of age and gender. Many different industries were also represented among these in-person cases. The reasons why the EAP was used also had substantial variation across different kinds of mental health, personal stress, relationships, marriage and family life, work problems and substance use issues. The duration of how long the counseling was used also had a wide range, spanning from just one week to over 10 months, with most cases getting relief after about two months of time engaging in therapy sessions with their EAP counselor. In contrast, there was little variation in employee status and referral type, as almost all of the clients were employees (98%; 2% family) and 97% were self referrals into the EAP.

While the total number of employees using in-person counseling each year dropped during the peak of the pandemic, in-person counseling was used by thousands of cases each year for periods before and since the peak of the pandemic, demonstrating its ongoing appeal and popularity among employees seeking support. Thus, it is possible that the temporary reduction in the number of in-person counseling cases that was observed during the peak of the pandemic was due primarily to the restrictions in place at that time for in-person clinical contact and was not based on a shift in employee preference for counseling via remote technology channels such as online video, text or chat.   Post-hoc analyses conducted on four of the five outcomes with relevant data showed similar levels of effectiveness for the counseling when compared for two groups of cases in the periods before and after the pandemic (see Appendix C).

4.2. Research Questions and Hypotheses Revisited

About 1 in every 3 cases were at-risk for a mental health disorder when starting EAP use (39% for anxiety and 29% for depression; with 22% at-risk for both). When compared to the public, these risk rates for in-person users of the EAP for anxiety and depression were about three times higher than the recent national averages [18,19]. In addition, about 1 in every 8 cases had a hazardous level of alcohol consumption when starting counseling, which was more similar to the working population norm. The subgroups of at-risk cases on each clinical outcome each had a large majority of clients who recovered after using the EAP counseling to no longer be at-risk. In addition, the reduction in severity scores for the average at-risk case was significantly lower after use and represented a large size statistical effect for the behavioral health outcomes of depression, anxiety and alcohol misuse.

Both of the work outcomes had about a third of cases starting therapy with the EAP at a problem level (i.e., at-risk). This is interesting when only 7% of all cases had used the EAP to get therapy for an issue related to their work or workplace. However, about 9 out of every 10 of these cases recovered and no longer had a problem with absence or with their performance while working when assessed again at the follow-up. Both work outcomes also had large size statistical effects for the extent of improvement after counseling in the average Pre and Post scores on the measure. Among the cases starting out at problem level of absence, the typical employee changed from having 25 hours per month of lost work time to only 4, which is a level close to the typical worker norm. Thus, absenteeism was reduced from three full workdays lost per month to only half of one day. The severity of work presenteeism also was reduced by 47% for the average worker starting their EAP use with a work presenteeism problem.

In summary, the results revealed that each hypothesis for the longitudinal data that predicted a significant improvement in the clinical and work outcomes after the use of EAP counseling was strongly supported by the findings. Thus, in-person counseling was effective as a brief treatment intervention across a diverse population of clients with different clinical needs and employment contexts. The primary findings are presented in Table 3.

Table 3. Summary of key findings: By outcome.

Key Results:	Outcome				
	Clinical Depression	Clinical Anxiety	Clinical Alcohol Misuse	Problem with Work Absenteeism	Problem with Work Presenteeism
Prevalence rate of at-risk status among all in-person cases at start of EAP use	29% of 10,824 cases	39% of 10,824 cases	14% of 10,223 cases	22% of 31,667 cases	38% of 30,695 cases
Recovery from at-risk status for at-risk cases after EAP counseling use	**78%** of 281 at-risk cases	**80%** of 124 at-risk cases	**68%** of 307 at-risk cases	**88%** of 1,010 at-risk cases	**88%** of 1,217 at-risk cases
Reduction in average severity score from Pre to Post for at-risk cases	-60%	-65%	-63%	-85%	-47%
Statistical effect size for the reduction in average severity score for at-risk cases	Large effect $d = 1.91$	Large effect $d = 1.71$	Large effect $d = 1.48$	Large effect $d = 1.63$	Large effect $d = 1.71$

4.3. Comparisons with Other Research

The demographic and clinical use characteristics of the clients in this national study sample are similar to that of other large sample studies of the users of external vendors of EAP counseling services [96-99,106,119,120]. The prevalence risk rates for anxiety and depression disorders found in the study are similar to other EAP studies using similar risk screening self-report measures [108,119, 121]. The present study also replicates the findings found in past studies of EAP counseling of a high level of clinical effectiveness for cases with depression, anxiety or alcohol problems [51-68, 92-99,114,125].

What our findings do not explain is *why* participating in therapy conducted face-to-face with an EAP counselor was so effective for so many cases. A major factor driving these positive results was probably the fact that these distressed employees were able to choose to see an EAP counselor in-person, as past research has documented a preference among many mental health patients for in-person service delivery [25-29]. The conventional wisdom in favor of providing psychological therapies delivered face-to-face is that the effectiveness of such interventions depends upon on the development of a high quality therapeutic alliance between the therapist and the client and within the context of this relationship, visual as well as other information is reflected in eye contact, physical expression, posture and voice [122-124]. However, one recent study found that use of online video sessions had a range of the level of therapeutic alliance as reported by the EAP clients and that greater alliance was positively associated with better clinical and work longitudinal outcomes [125].

Our own research [78,80,81], and that of other comparative research studies [73-77], all conclude that in-person and online video delivery contexts for EAP counseling services both have sufficient evidence of effectiveness for improving clinical and work outcomes. This finding is also common among investigations comparing the patient experience and effectiveness for users of general providers (non-EAP) of counseling from in-person or online video conditions [126-128]. Other past research studies with EAP providers that compared the face-to-face therapy context against telephone delivered therapy [68-73] also has consistently found that both modalities are generally effective. Comparative studies conducted in primary care and community settings of outpatient psychological treatments also have found few meaningful differences between results for in-person office settings and telephone delivered therapy [129-132].

Taken together, the available research underscores the value in being able to provide different delivery modality options for EAP counseling. When the outcomes are comparable between in-person, telephone and online video contexts, being able to encourage the participation in professional counseling – by any access modality preferred by the client – appears to be important for program success in order to support as many employees as possible.

4.4. Limitations of the Study

We must acknowledge certain limitations of this study. It was conducted using real-life experiences based on convenience samples of adults who were working for thousands of different employers in the United States who all had access to the same commercially available EAP service. Thus, the data from only one EAP provider was evaluated.

Our reliance on brief self-report data sources may be questioned, as other records or external sources of the outcomes potentially could have provided more accurate measurements. For example, other formal treatment or clinical diagnostic records related to mental health and alcohol outcomes would have yielded more in-depth data than our use of self-reported risk levels. However, the majority of people who meet criteria of being at-risk for common behavioral health disorders do not seek treatment and thus are missing from claim records of health care treatment [15-18]. For this reason, using self-reported data on these issues is acceptable and commonplace both in health care practice settings and other applied research projects [133-141]. There is also research evidence that self-reports from employees of their level of work absence do closely align with company record data of their absence histories [142,143]. Systematic reviews of the literature have also found support for the validity and reliability of employee self-reports of work presenteeism and productivity compared to relevant company records of their productivity during the same periods [144,145].

Our use of archival service operational data collected from single treatment groups with repeated measures of outcomes is an example of an applied "pre-experimental" type of longitudinal research design with no comparison group. As this was not a prospective study, we did not use other stronger kinds of designs such as the quasi-experimental type (with a comparison group matched on key characteristics) or the experimental randomized control trial type. However, we know of only seven other quasi-experimental studies involving both treatment and comparison groups in the literature on EAPs [four studies cited in 58, 146-148]. All of these studies found that the EAP treatment group had superior improvements over time on clinical and work outcomes compared to the other employees who did not use EAP counseling. Thus, we would expect similar results had our study design involved a comparison group. We also did not measure if these cases had also used other health-enhancing psychological treatment providers nor if they were also taking psychiatric medications during the same period as when they used the EAP counseling. It is possible that other unknown factors than just the use of the EAP in-person counseling also influenced the study outcomes.

V. Conclusion

This applied evaluation study provides evidence that brief counseling conducted face-to-face in clinical office settings is associated with large size improvements for employees in both behavioral health and work domains. The results of the study underscore the importance of ensuring access to this kind of service delivery context from EAPs for those clients who prefer to meet with their counselor in-person.

APPENDIX A

Outcome Measures Data Collection and Standardization

Figure A1 and Table A1 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 (see Table A2). This appendix presents details of how the measures from each phase compare and the final standardized version of the four measures that blended the case-level data across the two phases of data collection.

This profile reveals the four 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 symptom measures 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, both of these measures had the same items across the two phases and used only the at-risk subsamples from within each data collection phase. Although, not ideal, the opportunity to use larger sample sizes of EAP in-person cases from both phases of data collection comprising the full study period was more important than minor differences in starting levels and psychometric properties of the measures. The phase differences in total samples of users are less of a concern when considering that only the subset of total cases who were at-risk clinically on the outcome of depression or alcohol at the start of treatment in each phase were relevant for inclusion in the longitudinal tests featured in this study.

The two work outcome measures also had some small differences between the two data collection phases due to the use of different versions of the measures. Yet, both work measures had the same general profiles when contrasting their averages and at-risk rates at Pre and at Post (both versions of each measure were higher at Pre than at Post), which was the main interest of the study.
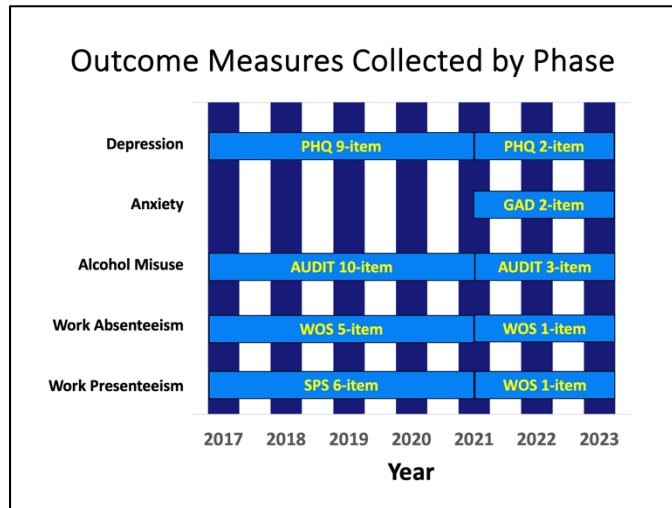
Figure A1. Outcome measures collected by year.

Table A1. Phases of data collection for outcome measures.

Measure	Phase of Data Collection		Analyzed for this Study
	1: 2017-January to 2022-July	2: 2022-August to 2023-June	All available data
	Criteria for measure being collected:		
	Relevance of case for measure(s) decided by counselor	Same set of measures collected on almost all cases routinely	
Depression	PHQ-9	PHQ-2 from PHQ-4	PHQ-2
Anxiety	NA	GAD-2 from PHQ-4	GAD-2
Alcohol Misuse	AUDIT-10	AUDIT-3 from AUDIT-10	AUDIT-3
Work Absenteeism	WOS-5	WOS-1	Both measures used, but used the sum of hours of work absence from 3 items from WOS 5-item version and the hours from the WOS revised single item version
Work Presenteeism	SPS-6	WOS-1	Both measures used, but the SPS-6 scale was reverse scored (i.e., higher scale score indicates more presenteeism) and converted to average score with 1-5 range across the 6 items to match the 1-5 range of the rating of the WOS question.

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 A2. Descriptive profiles for outcome measures at each phase of data collection and study total sample.

Measure	Phase 1	Phase 2	All available data in Study
Start of Counseling – PRE			
Depression	PHQ-2 from PHQ-9	PHQ-2 from PHQ-4	PHQ-2
Range of score:	0-6	0-6	0-6
Sample size *n* cases:	3,598	10,824	14,422
Mean (SD)	3.28 (1.81)	1.91 (1.89)	2.25 (1.60)
At-risk % of total	60%	29%	37%
Alcohol Misuse	AUDIT-3 from AUDIT-10	AUDIT-3	AUDIT-3
Range of score:	0-12	0-12	0-12
Sample size *n* cases:	1,658	10,452	12,110
Mean (SD)	6.51 (3.28)	1.24 (2.17)	1.96 (2.97)
At-risk % of total	85%	14%	24%

Work Absenteeism	WOS-5 (but 3 items used)	WOS-1	Both measures used
Range of score:	0-155 hours	0-125	0-155
Sample size *n* cases:	20,929	10,738	31,6667
Mean (SD)	5.10 hours (13.45)	3.70 hours (11.71)	4.26 hours (12.91)
At-risk % of total	24%	17%	22%
Work Presenteeism	SPS-6	WOS-1	Both measures - SPS6 adjusted
Range of score:	1-5	1-5	1-5
Sample size *n* cases:	19,957	10,738	30,695
Mean (SD)	2.83 (1.24)	3.21 (1.40)	2.96 (1.31)
At-risk % of total	32%	49%	38%
Follow-up After Counseling – POST			
Depression	PHQ-2 from PHQ-9	PHQ-2 from PHQ-4	PHQ-2
Range of score:	0-6	0-6	0-6
Sample size *n* cases:	296	380	676
Mean (SD)	1.49 (1.40)	0.58 (1.07)	0.97 (1.30)
At-risk % of total	15%	6%	10%
Alcohol Misuse	AUDIT-3 from AUDIT-10	AUDIT-3	AUDIT-3
Range of score:	0-12	0-12	0-12
Sample size *n* cases:	273	357	630
Mean (SD)	2.49 (2.24)	0.82 (1.16)	1.52 (1.90)
At-risk % of total	32%	5%	16%
Work Absenteeism	WOS-5 (but 3 items used)	WOS-1	Both measures used
Range of score:	0-120 hours	0-120 hours	0-159
Sample size *n* cases:	2,931	380	3,311
Mean (SD)	1.71 hours (9.92)	0.79 hours (1.02)	1.60 hours (9.36)
At-risk % of total	6%	3%	6%
Work Presenteeism	SPS-6 (reverse scored and averaged across items)	WOS-1	Both measures used
Range of score:	1-5	1-5	1-5
Sample size *n* cases:	3,001	380	3,381
Mean (SD)	1.89 (0.95)	1.73 (1.02)	1.87 (0.96)
At-risk % of total	5%	8%	6%

APPENDIX B

Representativeness of Longitudinal Samples

The follow-up groups on each outcome measure constituted from between 3% to 15% of the full starting sample sizes. As the longitudinal sub-samples included the experiences of a minority of service users we wanted to determine if the final valid samples of cases with longitudinal data for each outcome were a reasonable representation of the larger population of in-person cases at this EAP. Statistical tests were conducted comparing the Pre-only group (i.e., those clients who completed an outcome measure at baseline but not at the follow-up) with the longitudinal group that completed the same outcome measure both at baseline and at the follow-up after counseling concluded. Tests were declared meaningful only when they produced at least a small size statistical effect (depending in the test: eta^2 of .01 or higher; *r* of .10 or higher). These test results are described below for each outcome measure.

B.1. Depression Outcome Among Cases At-Risk for Depression at Pre

Follow-up response rate for at-risk cases = 5.3% (*n* = 281 longitudinal / *n* = 5,282 total at Pre). The at-risk depression outcome longitudinal Pre & Post paired group did not differ from the At-risk Pre-only depression outcome group on any of the demographic, employer-related and clinical use context factors examined. Importantly, the two groups had the same level of depression symptom severity at Pre on the PHQ-2, which is the primary factor of interest for judging the representativeness of the longitudinal subsample: Longitudinal *M* = 4.53 (SD = 1.11) vs. Pre-only *M* = 4.47 (SD = 1.16).

B.2. Anxiety Outcome Among Cases At-Risk for Anxiety at Pre

Follow-up response rate for these at-risk cases was 3.0% (*n* = 124 longitudinal / *n* = 4,164 total at Pre). The at-risk anxiety outcome longitudinal Pre & Post paired sample did not differ from the At-risk Pre-only anxiety outcome group on any of the demographic,

employer-related and clinical use factors examined. Importantly, the two groups did not differ meaningfully on their level of anxiety symptom severity at Pre on the GAD-2: Longitudinal M = 4.50 (SD = 1.11) vs. Pre-only M = 4.69 (SD = 1.14).

B.3. Alcohol Outcome Among Cases At-Risk for Alcohol at Pre

Follow-up response rate for these at-risk cases was 10.9% (n = 307 longitudinal / n = 2,827 total at Pre).   Importantly, the two groups did not differ meaningfully on their level of alcohol misuse symptom severity at Pre on the AUDIT-3: Longitudinal M = 6.71 (SD = 2.44) vs. Pre-only M = 6.45 (SD = 2.89). The at-risk alcohol outcome longitudinal Pre & Post paired sample did not differ from the At-risk Pre-only alcohol outcome group on factors of age, gender, industry, employee status, session limit, or presenting issue. The only context factor with a relevant difference was that the longitudinal group had a higher percentage of employees who had been formally referred to the EAP by their manager at work: Longitudinal **formal referral** = 31% (96 of 307) vs. Pre-only formal referral = 4% (106 of 2,520); X^2(1,2827) = 302.11, p < .001, eta^2 = .11 medium size effect. Apparently, for the alcohol outcome being referred into the EAP by one's employer contributed to a much higher participation rate in the follow-up survey.

B.4. Work Absenteeism Outcome Among Cases with Absenteeism Problem at Pre

Follow-up response rate for these at-risk cases was 14.8% (n = 1,010 longitudinal / n = 6,846 total at Pre). Importantly, the two groups did not differ meaningfully on their level of absence hours at Pre – which is the primary factor of interest for judging the representativeness of this longitudinal subsample: Longitudinal M = 24.8 hours vs. Pre-only M = 20.4 hours [square root transformed means were tested: Longitudinal M = 4.5 vs. Pre-only M = 4.2). The work absence problem longitudinal group did not differ from the Pre-only absence problem group on factors of age, industry, employee status, session limit, or presenting issue. A relevant large difference was that the longitudinal group had a higher percentage of employees who had been formally referred to the EAP by their manager at work: Longitudinal **formal referral** = 30% (306 of 1,010) vs. Pre-only formal referral = 2% (704 of 6,412); X^2(1,6846) = 1145.30, p < .001, eta^2 = .17 large size effect. Another small difference involved client **gender**, such that the longitudinal group had a higher percentage of males than the Pre-only group: Longitudinal = 51% males (514 of 1008) vs. Pre-only formal referral = 37% males (2,165 of 5,805); X^2(1,6813) = 67.53 p < .001, eta^2 = .01 small size effect.

B.5. Work Presenteeism Outcome Among Cases with Presenteeism Problem at Pre

Follow-up response rate for these at-risk cases was 10.4% (n = 1,217 longitudinal / n = 11,660 total at Pre). Importantly, the two groups had the same level of presenteeism on the 1-5 scale at Pre – which is the primary factor of interest for judging the representativeness of this longitudinal subsample: Longitudinal M = 4.29 (SD = 0.51) vs. Pre-only M = 4.36 (SD = 0.52). The work presenteeism problem longitudinal group did not differ from the Pre-only presenteeism problem group on factors of age, gender, industry, employee status, session limit, or presenting issue. The only relevant difference was that the longitudinal group had a higher percentage of employees who had been formally referred to the EAP by their manager at work: Longitudinal **formal referral** = 25% (299 of 1217) vs. Pre-only formal referral = 2% (181 of 10,443); X^2(1,11660) = 1439.95, p < .001, eta^2 = .12 medium size effect.

Overall, the cases of interest in the longitudinal samples for each outcome had the same general profile of the initial outcome severity level, employee demographic factors, clinical use factors, and employer context factors as other employees at this EAP. Thus, the results support the representativeness of the longitudinal samples. Few of the nine demographic, clinical, and employer context factors differed much in these tests.

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APPENDIX C

Comparison of Effectiveness Between Pre-Pandemic and Pandemic Time Periods

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Given the larger societal and employer conditions that changed after the global COVID-19 pandemic, we explored the primary results for improvement after use of in-person counseling on each of the outcomes for the two time periods of before and after the pandemic. The first group had cases from 2017 through February of 2020 and the second group had cases from March of 2020 through 2023. These findings show that in-person counseling was equally effective for cases using the EAP during periods before and during the pandemic (each outcome's chi-square test was not significant). The anxiety outcome was collected only during the pandemic period. The results for how many at-risk cases had recovered to no longer be at-risk after the counseling on each outcome is presented below:

- Depression at-risk cases recovered: 76% of Pre-pandemic 122 cases = 80% of Pandemic 159 cases (p = .46 ns).
- Alcohol at-risk cases recovered: 74% of Pre-pandemic 121 cases = 65% of Pandemic 186 cases (p = .10 ns).
- Work absenteeism problem cases recovered: 88% of Pre-pandemic 658 cases = 88% of Pandemic 352 cases (p = .81 ns).
- Work presenteeism problem cases recovered: 88% of Pre-pandemic 642 cases = 88% of Pandemic 575 cases (p = .99 ns).

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