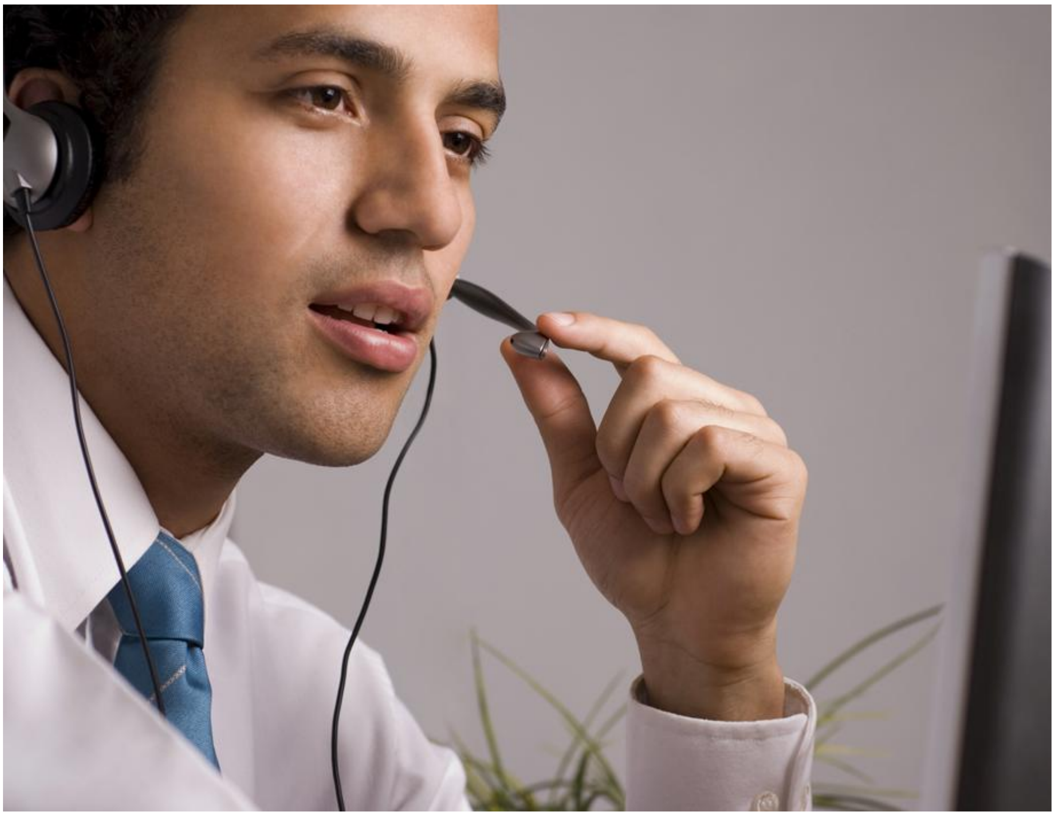
Systematic Review Of The Effectiveness And Cost Effectiveness Of Employee Assistance Programmes

Systematic Review Final Report



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SYSTEMATIC REVIEW OF THE EFFECTIVENESS AND COST EFFECTIVENESS OF EMPLOYEE ASSISTANCE PROGRAMMES

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Executive Summary

Employee Assistance Programmes (EAPs) are common organisational practice. Recent estimates suggest that over eight million employees in the UK have access to EAP services and between five to ten per cent of those with access will use the services.

The constituent services of EAPs vary. However, all tend to deliver a proportion of their services through individual counselling. A range of employee support services is claimed to offer a number of benefits to both employees and employers including improvements in such outcomes as sickness absence and staff turnover, employee psychological well-being, organisational commitment and job satisfaction, job performance and motivation.

This systematic review is designed to identify and synthesise the available evidence on the impact of EAPs on relevant employee and employer outcomes.

Extensive searches of research data bases were undertaken to identify studies relevant to this review. Studies were appraised and data extracted in line with the NICE Public Health Guidance development process. A total of 18 studies from over 1,300 original citations were identified as meeting the review criteria. One of these studies included a cost benefit analysis.

Three distinct clusters of studies were found:

- Evaluations of 1:1 counselling EAPs – dealing with a range of issues, where the delivery of services is through 1:1 counselling sessions
- Evaluations of multiple component EAPs – dealing with a range of issues, using a number of different service delivery methods including 1:1 counselling.
- Evaluations of specific programmes within an EAP, (i.e. an element of an EAP dealing with a single issue, such as alcoholism) or changes to an EAP process (e.g. referral mechanism) compared to the normal EAP service

Evaluative studies providing data on any well-being related outcomes were included. Types of outcome measure included:

- Sickness absence – both organisational records and self-reported
- Psychological well-being – self reported and counsellor assessed
- Organisational commitment
- Job satisfaction
- Work characteristics
- Work attitudes
- Performance – both self-reported and supervisor reported
- Problem specific outcomes such as drinking behaviour or hostility
- Turnover and turnover intention
- Referrals to the EAP
- Problem resolution

Of the studies included in the review, only a few used the most rigorous research designs (for example random allocation to an EAP or control group) and only one compared results for employees with an equivalent non-random control group. Where studies included comparison groups they were usually non-equivalent (e.g. comparing outcomes for employees who don't use EAP services with those who do). In general the evidence is weak and there are limitations to the conclusions that can be drawn and the extent findings can be generalised.

The review draws the following conclusions:

1. Overall, there is a lack of evidence about the effectiveness of EAPs. No studies were found that could demonstrate EAPs are more effective than no intervention on any of the reported outcomes.
2. The largest body of evidence was found in relation to 1:1 counselling EAPs. This group of studies mainly consists of pre and post studies with a non-equivalent or no comparison group. Findings are mixed, but taken overall, studies tend to report:
    a. Positive changes in absence and psychological well-being for EAP users over time.
    b. However, they also indicate that despite improvements, EAP users continue to have higher absence and poorer psychological well-being than non-EAP user comparison groups.
    c. Additionally, these studies find evidence of no changes in levels of job satisfaction, organisational commitment or other work attitudes.
    d. Overall findings can obscure differences in outcome at the organisational level. For example, one study covering eight organisations found improvements in psychological well-being for the sample as a whole, but when looked at by organisation found no change in the psychological well-being of EAP users in four of the companies studied.
    e. Overall findings can mask differences in outcome at the individual level. For example one study found significant improvements in psychological well-being for the whole sample, but when looking at individual changes found that for 35 per cent of EAP users psychological well-being improved considerably, for five per cent it got worse and for 60 per cent there was no change.
3. The strongest research evidence (in terms of study design) was found for evaluations of EAP programme elements addressing a single issue (e.g. drug, alcohol or substance misuse). Three randomised control studies found no difference in outcomes for service users regardless of intervention type or comparison with usual EAP services.
4. The weakest evidence overall was found in relation to multiple component EAPs. The majority of studies in this section were based on large samples drawn from EAP provider data bases. They suffered from one or more of a number of serious design limitations which precluded the generalisation of findings beyond the sample studied.
5. There is a lack of evidence about the cost effectiveness of EAPs. Only one cost benefit paper was identified that met the inclusion criteria for this review. The findings of the study were that the EAP being evaluated was cost beneficial to the organisation studied; however there were a number of issues with the method meaning that the findings were not generalisable and no conclusions could be drawn for the review.

This review identifies a lack of evidence about the effectiveness of EAPs compared to no intervention, and a lack of evidence about the cost effectiveness of EAPs.

Studies comparing employee absence rates and psychological well-being scores pre and post EAP use tend to report overall improvements on outcome measures; however findings are not consistent across organisations or individuals.

The lack of evidence noted above about the effectiveness of EAPs compared to no intervention means that it is impossible to draw conclusions about the extent to which any observed changes in outcomes are due to the EAP interventions being studied, or could have happened anyway. Furthermore, this review finds evidence of no impact in some areas often claimed as benefitting from an EAP, such as organisational commitment and job satisfaction. These findings raise a number of questions about whether EAPs are effective, and if so, in what circumstances and for which groups EAPs might be effective.

The findings of this review are a reflection of the research that has been published since 1990; both the limitations of this research and the weak nature of the evidence have been indicated. Overall, these findings highlight the need for considerable development of the evidence base for EAPs before questions about effectiveness and cost effectiveness can be fully addressed. This will change as more evidence is published. At present, organisations cannot assume that benefits accrue from having an EAP in place.

There are of course other reasons why organisations choose to have EAPs that fall outside the scope of this research. For example, providers of EAPs cite organisational benefits such as positioning the organisation as a caring employer or demonstrating a caring attitude towards employees. A recent review of workplace counselling (McLeod, 2010) found substantial evidence that workplace counselling clients are satisfied with the service they are offered. These types of outcome have not been considered in this review.

1. Introduction

Employee Assistance Programmes (EAPs) have become a standard feature of organisational life over the last few decades, often replacing or supplementing more traditional staff welfare services. Originating in the 1970s in North America as interventions to help employees with drug and alcohol problems, today EAPs have a much broader remit.

1.1. Research Objectives

Although a range of benefits are often claimed for EAPs, there is limited evidence in support. We are unaware of any existing systematic reviews of the effectiveness and cost effectiveness of EAPs. The British Occupational Health Research Foundation (BOHRF) has therefore commissioned this systematic review of evidence for the effectiveness and cost effectiveness of EAPs with the following two objectives:

- To identify and synthesise evidence on the **effectiveness** of EAPs, and
- To highlight available research on the **cost effectiveness** of EAPs, particularly **return on investment.**

1.2. EAP Definitions

Various definitions are available for EAPs. The Society for Human Resource Management, for example, defines EAPs as:

> *"A work-based intervention program designed to identify and assist employees in resolving personal problems (i.e. marital, financial or emotional problems, family issues, substance/alcohol abuse) that may be adversely affecting the employee's performance."*

(Glossary of Human Resources Terms at
http://www.shrm.org/TemplatesTools/Glossaries/Documents/

The Employee Assistance Professionals Association in the UK (EAPA) describes EAPs as follows:

> *"An EAP is a worksite-focused programme to assist in the identification and resolution of employee concerns, which affect, or may affect, performance. Such employee concerns typically include, but are not limited to:*
>
> - ***Personal matters** - health, relationship, family, financial, emotional, legal, anxiety, alcohol, drugs and other related issues.*
> - ***Work matters** - work demands, fairness at work, working relationships, harassment and bullying, personal and interpersonal skills, work/life balance, stress and other related issues.*
>
> *It includes a mechanism for providing counselling and other forms of assistance, advice and information to employees on a systematic and uniform basis, and to recognised standards.*

An EAP is also a strategic intervention designed to produce organisational benefit - quantifiable by outcome measurement - through a systems-led approach to human asset management. It addresses team and individual performance and well being in the workplace."

(http://www.eapa.org.uk/page--purchasers.html)

The 'EAP' label therefore covers a broad spectrum of employee problems. The International Foundation of Employee Benefit Plans describes EAPs as dealing with a range of situations such as substance abuse, marital problems, family troubles, stress and domestic violence, as well as providing health education and disease prevention. Additionally EAPs can sometimes have a health promotion remit. Regardless of the specific configuration of services, EAPs can be broadly described as having two aims:

1. To improve employee health and well-being, and
2. To reduce productivity and performance problems among employees.

(Macdonald, Lothian & Wells, 1997).

Thus the provision of such services can be seen as being of benefit to both employee and employer.

EAPs vary in content. The EAPA describes EAPs as including a mechanism for providing counselling and other forms of assistance, advice and information. It also states that EAPs are

"intentionally defined more by what they achieve, rather than by what they are, in order to leave maximum room for tailoring services to meet the needs of each organisation."

(http://www.eapa.org.uk/page--purchasers.html)

One to one counselling is the most common component of an EAP, however, most typically offer a range of services. The following indicative list is taken from the Federal Occupational Health pages of the US Department of Health and Human Factors website:

- Let's Talk Newsletter
- Advance Directives
- What to Expect When Contacting the Employee Assistance Program
- EAP Website
- Assessment, counseling and referral services
- Presentations and Orientations
- Critical Incident Stress Management (CISM)
- Employee risk management (supervisor and union consultation)
- "Continuous Quality Improvement" reviews
- Financial services
- Legal services
- Management reports (utilization and trend analyses)
- Program promotion
- EAP Monthly Campaigns

(http://www.foh.hhs.gov/services/eap/eap.asp)

1.3. EAPs in the UK

There are no centrally collated figures on the numbers of employees in the UK who have access to an EAP. Available estimates vary considerably. Based on 2007 figures around 7.5% of all employees in the UK compared to 32.5% of employees in North America are covered by an EAP (source: www.andrewwalton.co.uk). Alternative estimates are far higher, for example:

> *"EAP providers … are already helping between 20% and 30% of the UK workforce concentrate on their job"*
>
> (Source: Matthews, writing in HR Magazine, July 2007).

Arguably the most reliable estimate of the scale of EAP use in the UK comes from market research conducted on behalf of the EAPA in 2008 which suggests that 5,200 organisations in the UK have an EAP, covering over eight million employees. The EAPA market research put the value of this business at £50.6 million per annum.

There is more consistency over estimates of the proportion of employees with access to an EAP who will use the services - generally speaking, evidence from a range of sources consistently puts usage rates at between five to 10% of employees with access to an EAP (e.g. EAPA website; Highly-Marchington & Cooper, 1998).

1.4. EAP Outcomes

EAPs vary in content, but in general EAP providers claim a number of benefits relating to employee well-being, employee and/or organisational performance. Examples of the types of benefits or outcomes that are claimed for EAPs (taken from the EAPA website) include the following:

"EAPs help individuals, managers and organisations to:

- *Cope with work-related and personal problems and challenges that impact on performance at work.*
- *Improve productivity and workplace efficiency.*
- *Decrease work-related accidents.*
- *Lessen absenteeism and staff turnover.*
- *Promote workplace co-operation.*
- *Manage the risk of unexpected events.*
- *Position the organisation as a caring employer.*
- *Recruit and retain staff.*
- *Reduce grievances.*
- *Assist in addiction problems.*
- *Improve staff morale and motivation.*
- *Provide a management tool for performance analysis and improvement.*
- *Demonstrate a caring attitude to employees.*
- *Assist line managers in identifying and resolving staff problems "*

Importantly, the EAPA points out that an EAP is designed to produce organisational benefit. Specifically, EAPs are claimed to impact on organisational outcomes that are quantifiable and measurable.

1.5. Research Context

When conducting a systematic review of evidence in this area there are a number of considerations to be taken into account that have implications for the methodological approach.

1.5.1. Variation in EAP provision

First, the variety of services offered in EAPs means that a range of outcome criteria can be relevant in evaluating their effectiveness.

Second, the range of services can also make it difficult to determine what the 'active' components are i.e. the elements of the service responsible for any measured effects.

Third, a further variation in EAP provision concerns their relationship to the host organisation. Assistance can be provided by an in-house EAP, via a contracted external EAP provider, or by referral to a range of specialist external providers.

Fourth, access to the EAP can vary. EAPs can have an 'open access' approach, where any member of staff or family member may contact the EAP provider direct without any contact or input from the employer. Alternatively, the EAP might operate on a system of referral by occupational health provider (OHP), via human resource management (HRM) or by a line manager/supervisor.

1.5.2. Effectiveness & Cost Effectiveness

The requirement to focus on effectiveness and cost effectiveness meant the need to focus on studies and papers that were evaluative rather than merely descriptive. This normally means papers which include data collected at two different time points (to provide a baseline for comparison), have clearly defined intended outcomes (e.g. a reduction in stress or a reduction in absence) and, for the cost-effectiveness element, provide adequate explanation of cost calculations for the intervention and any cost benefits/return on investment data presented in the paper.

1.5.3. Extent of the knowledge base

Initial scoping searches indicated that a relatively small volume of papers providing findings on the effectiveness of EAPs would be identified. Searches also indicated that few, if any, robust cost effectiveness evaluations would be identified. It was therefore proposed that cost effectiveness data would be assessed for potential economic modelling by a health economist. A recommendation based on this would then be made to the BOHRF research committee.

1.6. Implications for the review

The variations in EAPs with regard to remit, relationship to the host organisation and constituent services, the need to identify evidence of effectiveness, and the state of the literature all had implications for the design of the evidence review:

- *The review was designed to be broad in scope, using sensitive search strategies to identify all relevant material*
- *The search and selection of papers focused on evaluative papers with clearly defined outcomes.*
- *Data extraction for each study followed the proposed links between type of EAP provision and the intended outcomes for that study (As opposed to specifying included outcomes in advance)*

2. Methodological summary

This section summarises the methodological approaches used. A more detailed methodology can be found in appendix 1.

2.1. Overview of systematic review methodology

A number of frameworks for conducting systematic reviews exist which broadly cover the same principal stages. The strategy for this review was adapted from the NICE Public Health Guidance development process (NICE, 2009) and comprised the following stages:

1. Scoping exercise and consultation with the BOHRF Research Committee to define elements of the research question (population, intervention, comparisons and outcomes) and to establish inclusion and exclusion criteria
2. Production of protocol document specifying population, intervention, comparisons, outcomes, and inclusion and exclusion criteria
3. Identification of potentially relevant literature (literature search strategies and other potential data sources)
4. Study selection and quality assessment (including title and abstract sift and full paper screening).
5. Data extraction and synthesis of included studies

2.2. Defining the research questions

An early consultation was held with the BOHRF research board to clarify the precise nature of the question including:

- The population of interest
- The intervention(s) to be included
- Any comparators, and
- The specific outcomes of interest

The consultation exercise also established key inclusion and exclusion criteria for the review. A protocol was developed specifying the review to be undertaken (see appendix 2).

As a result of the consultation it was agreed that the review would be designed to address the following broad question:

> ***Are Employee Assistance Programmes (EAPs) effective and cost-effective at improving well-being and/or work outcomes for employees?***

To be categorised as an EAP, an intervention had to be open to all employees of an organisation with the specific aim of addressing personal, work or non-work-related problems. The outcomes of interest for the review included mental (including depression, anxiety and self-esteem) and physical well-being, work attitudes, job performance, absenteeism or work days lost rather than satisfaction with the service. In order to evaluate effectiveness, only longitudinal studies (both controlled and uncontrolled) were included. Cost effectiveness and cost-utility studies were also to be identified in order to determine the scope for cost-effectiveness modelling of EAP interventions.

2.3. Identification of studies

Searches were undertaken across seven data bases. Additional searches of relevant websites used the search terms ‘employee assistance program’, ‘EAP’ and ‘counselling’. These searches were supplemented by other methods to identify relevant citations: the references of all included studies were screened and the reference lists of relevant reviews were also consulted for additional citations

Titles and abstracts of papers identified in the searches were checked against the inclusion and exclusion criteria that had been agreed with the BOHRF research committee. Full papers of all titles and abstracts meeting the inclusion criteria were retrieved. Each full paper was then checked against inclusion and exclusion criteria by one reviewer and verified by a second.

The resulting included studies were divided between reviewers and the relevant data extracted using a form based on the protocol for this review. All extractions were double checked by a second reviewer.

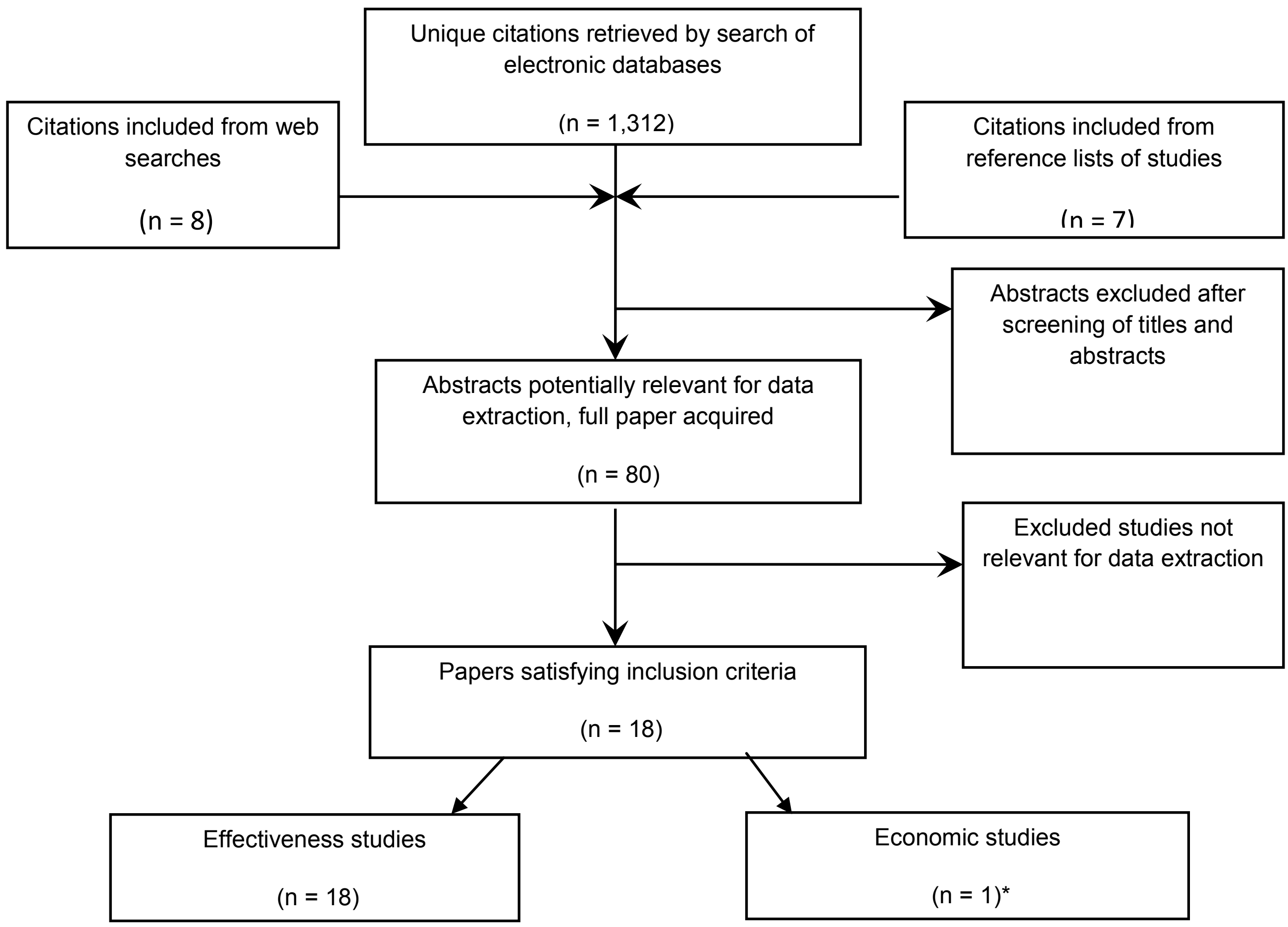
The included effectiveness studies were assessed using a standard procedure to afford a basic idea of the respective research quality of each. Finally, a narrative synthesis of data from included studies was then performed based on the interventions and outcomes studied and the measures used.

3. Results

The search of electronic databases identified 1,312 unique citations. The search of websites identified eight citations. Seven additional papers were identified from the references of included studies. All titles and abstracts were screened and 80 citations were identified as being possibly relevant. The full papers of these citations were retrieved.

After examining these full papers in detail, a total of 18 relevant studies were identified that satisfied the inclusion criteria for the effectiveness review, one of which included cost effectiveness data. For full details of the search results and the sources of the included studies, see the PRISMA diagram (Figure 1). For a full list of the included studies and quality assessment outcomes see Table 3.1a (Controlled studies) and Table 3.1b (Single cohort studies).

Figure 1: PRISMA Flow Diagram



*Also in effectiveness review

Table 3.1a: Quality assessment outcomes - Effectiveness studies (controlled)

Study	Is the sector being evaluated clear?	Are the age and gender of the participants reported?	Is the EAP described in detail, e.g. counselling, frequency, length of sessions?	Is the control group valid, i.e. same or comparable in all ways except for exposure to the EAP?	Are the numbers at T1 (baseline) and T2 reported etc.	Loss to follow-up reported and ≤5%?	Is there any assessment of differences between those lost to follow-up and those being assessed at T2?	Objective outcome measures	Self-report outcome measures
Controlled studies									
Cooper & Sadri (1991)	Yes	No	Unclear	No	Yes	Yes	No	Yes	Yes
Foote & Erfurt (1991)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Guppy & Marsden (1997)	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Lapham, McMillan & Gregory (2003)	Yes	No	No	Unclear	Unclear	Unclear	No	Yes	No
MacDonald, Lothian & Wells (1997)	Yes	Yes	Yes	No	Unclear	Unclear	Unclear	Yes	No
MacDonald, Wells, Lothian & Shain (2000)	No	Yes	Yes	No	Unclear	Unclear	Unclear	Yes	No
Nakao, Nishikitani, Shima & Yano (2007)	Yes	Yes	Yes	Yes (two differences controlled for)	Yes	Yes	No	No	Yes
Walsh, Hingson, Daniel, Merrigan, Levenson, Cupples, Heeren, Coffman, Becker, Barker, Hamilton, McGuire & Kelly (1991)	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes

Table 3.1b: Quality assessment outcomes - Effectiveness studies (single cohort studies)

Study	Is the sector being evaluated clear?	Are the age and gender of the participants reported?	Is the EAP described in detail, e.g. counselling, frequency, length of sessions?	Are the numbers at T1 (baseline) and T2 reported?	Loss to follow-up reported and <u><</u>5%?	Is there any assessment of differences between those lost to follow-up and those being assessed at T2?	Objective outcome measures	Self-report outcome measures
Chan, Neighbors & Marlatt (2004)	No	Yes	No	Yes	NA	NA	No	No
Goss & Mearns (1997)	Yes	Yes (limited)	Yes, but limited	Yes	Yes	No	Yes	Yes
Hargrave & Hiatt (2004)	No	Yes (limited)	No	Yes	NA	NA	Yes	No
Hargrave, Hiatt, Dannenbaum & Schaffer (2008)	No	Yes (gender)	Yes	Yes	Yes	No	No	Yes
Hiatt, Hargrave & Palmertree (1999)	No	No	Yes, but limited	Unclear	Unclear	NA	Yes	No
Highly Marchington & Cooper (1998)	No	No	Yes	Unclear	No	Unclear	Yes	Yes
Michie (1996)	Yes	Yes (gender)	Yes	Yes	No	No	Yes	Yes
Preece, Cayley, Scheuchl & Lam (2006)	No	Yes	No	No	Unclear	No	Yes	No
Ramanathan (1992)	Yes	Yes (age)	No	Yes	Unclear	Yes	Yes	Yes
Selvik, Stephenson, Plaza & Sugden(2004)	No	Yes (limited)	Yes (limited)	Yes	NA	No	No	Yes

3.1. Details of studies

In total 18 studies met the inclusion criteria. All studies were published in English with the earliest dating from 1991. Nine studies were conducted in the USA, five in the UK, three in Canada and one in Japan. Eight of the studies had some form of comparison or control group and there were 10 uncontrolled studies (i.e. single cohort before and after studies).

Of the 18 studies included in the review 12 reported on individual evaluations of EAPs. One Study (Highly-Marchington & Cooper, 1998) was an evaluation of EAPs in nine organisations, covering a range of EAP providers. Five studies (Chan et al., 2004; Hargrave & Hiatt, 2004; Hargrave et al., 2008; Hiatt et al. 1999; and Selvik et al., 2004) used a broadly similar sampling methodology where samples were drawn from the databases of EAP providers. In all cases, data related to individuals in an unknown number of organisations and included only participants for whom complete data sets were available.

Sixteen studies had a follow up period beyond the final EAP session, the shortest follow up was two months post contact with the EAP and the longest follow up period was two years. In five studies the follow up period beyond EAP contact was not stated or was unclear. In two studies (Chan et al., 2004; and Selvik et al., 2004) there appeared to be no follow up period beyond the last session with the EAP counsellor. Time 1 sample sizes ranged from 55 to 59,865 and were unclear or not reported in four of the studies.

Descriptions of interventions indicated that the most common form of EAP to be evaluated was 1:1 counselling (eight studies). Five studies focused on specific elements within EAPs (e.g. a new referral method or strand of intervention). Five studies evaluated multi component EAPs offering various services including 1:1 counselling. Details of study characteristics are presented in Table 3.2, grouped by type of intervention (1:1 counselling; EAP programme elements; and multi component EAPs).

Table 3.2: Study characteristics - Effectiveness studies

Study	Duration	Country Sector	Intervention: Description	Intervention: a. Who is it offered to? b. Who is it offered by? c. Who pays for it? d. What are the referral routes?	Intervention: Sample	Control:
1-2-1 counselling EAPs						
Controlled pre – post intervention studies						
Cooper, C. L., & Sadri, G. (1991)	Unclear	UK, postal service	Rogerian, client-centred counselling; individual sessions with trained clinical psychologists	a. All employees b. Occupational Health Service c. The organisation d. Various: Occupational health, self-referral, welfare services, managers, trade union	N=250 Age and gender not reported	N=100, non EAP users, age and gender not reported, employees matched in terms of age, sex, grade, and years of experience
Guppy, A., & Marsden, J. (1997)	6 months	UK, transportation	Various frequency and depth of contact. On average employees received 8 counselling sessions. The contact ranged in nature from a basic monitoring function provided by the programme to a more usual (community model) counselling contact	a. Not reported, but refers to both supervisor and self-referral b. The organisation c. Not reported: but 'company operated' d. 2% self referral, majority attending after informal or formal discussions within their supervisor	All new referrals to the company programme were invited to participate in the study, N=138, 96% male, mean age 42.4 years	N= not reported; non-referred employees, matched on basis of age, gender
Macdonald, S., Lothian, S., & Wells, S. (1997)	Unclear	Canada, transportation	The EAP is a voluntary and confidential short-term counselling, advisory and information service	a. Not reported, but refers to service being free to employees and family members b. The organisation c. The organisation d. Self referral or supervisor referral	All employees who had used the EAP over the previous two years; N= 101, (sample size for the EAP clients and comparison subjects fluctuated among 60 day periods for various reasons), 75% were male	Age and gender not reported; Each EAP user was matched with the first non-EAP user from company records, employees matched in terms of age, sex, occupational status and length of employment
Macdonald, S., Wells, S., Lothian, S., & Shain, M. (2000)	Unclear	Canada, not reported	EAP designed to provide a wide range of counselling services to over 2,000 employees. The EAP was a free voluntary, confidential, short-term counselling program, providing advisory and information services. EAP was located off-site	a. All company employees and family members b. The "EAP provider" c. Not reported d. None: voluntary access (89% self-referred - 3.9% of referrals involved assistance from a supervisor)	Anonymised EAP clients from company data, N=606 although unclear (sample size for the EAP clients and comparison subjects fluctuated among 60 day periods for various reasons), 31% were males, mean age =39.6	Each EAP user was matched with the first non-EAP user from company records., employees matched in terms of age, sex, occupational status and length of employment (mean age=39.8)
Nakao, M., Nishikitani, M., Shima, S., & Yano, E. (2007)	24 months	Japan, IT services and software management	Free, anonymous counselling with psychologists through e-mail or over phone, and referral to a psychiatric clinic affiliated with the institute. In addition, seminars concerning job related mental health held for all employees five times a year	a. All employers satisfying the inclusion criteria (by age and gender) b. Company and a Research institute c. Unclear d. None: voluntary access	All male workers under 38 years who received the mandatory annual health examination, N=409, males aged 40 years or younger; median age=29 years	N=31; Similar company with no EAP provision; median age = 29 years; males meeting the same inclusion criteria of the study were recruited from an affiliated company

Uncontrolled pre- post intervention studies						
Michie, S. (1996)	2 years	UK, health	Individual, confidential counselling sessions offered on a short term basis	a. Not reported b. The hospital c. The hospital d. Self referral & supervisor referral	N=163, 83% female	
Goss, S., & Mearns, D. (1997)	22 months	UK, local authority education department	6 sessions of counselling offered with an average of 3.73 session being used	a. All 12,500 staff complement of the regional education department b. The organisation c. The organisation d. Unclear	N=237; unclear - clients who had undertaken counselling within the first 22 months of service,; 25.8% were men, group skewed slightly towards older members of staff, especially the 51-55 age-band	
Highley-Marchington, J., & Cooper, C. (1998)	Unclear	UK public and private companies	Mixture of in house and external EAP service providers	a. Not stated beyond "employees" b. Employer c. Unclear d. Unclear	All employees receiving EAP services at nine UK organisations	
EAP Programme Elements						
Controlled pre-post intervention studies						
Foote, A., & Erfurt, J. C. (1991)	1 year	USA, manufacturing	Usual care, i.e. Referral for detox and inpatient or residential care; self-help; family physician. Plus follow-up counsellor makes routine contacts with clients, weekly for month post-treatment, monthly for next 5 months, then bi-monthly for 6 months OR weekly at any point if there was a threat of relapse	a. All employees b. EAP Service c. Company d. Various: self-referral, managers, trade union	All clients who entered an EAP with a primary diagnosis of drug or alcohol problems in 1985, randomised to one of two groups to receive, or not receive, additional, special routine follow-up counsellor, N=164, clients predominantly male and average age was 37 years	N=161, no EAP follow-up; comparable by age and gender
Lapham, S. C., Gregory, C., & McMillan, G. (2003)	4 years	US, managed care organisation	Project WISE (Workplace Initiative in Substance Education) includes: substance misuse awareness training, information on how to reduce drinking and brief counselling.	a. All staff at a large managed care organisation b. The organisation c. Not reported d. Self and supervisor	Unclear - All employees at the main hospital and its support services personnel,	Not reported
Walsh, D. C., Hingson, R. W., Merrigan, D. M., Levenson, S. M., Cupples, L. A., Heeren, T., Coffman, G. A., Becker, C. A., Barker, T. A., Hamilton, S. K., McGuire, T. G., & Kelly, C. A. (1991)	2 years	US, Industrial plant	3 conditions: Period of mandatory inpatient rehabilitation; Mandatory attendance at alcoholics anonymous (AA) meetings; and the third was choice of treatments with non directive advice from the administrators of the EAP; the choice was either hospitalisation, attendance at AA meetings or doing nothing as long as they remained sober on the job.	a. Employees who entered the employee assistance program with an alcohol problem that is interfering with their work b. Organisation and researchers c. Not reported d. Entered the EAP if they had alcohol problems that were interfering with their work	N=227, 96% male, mean age 33 years; subjects recruited as they entered the EAP. Data also collected from 201 supervisors and 61 spouses.	

Uncontrolled pre- post intervention studies						
Hiatt, D., Hargrave, G., & Palmertree, M. (1999)	8 years	USA, public and private companies	Multi component EAP	a. Not reported, but refers to service being offered to several hundred private and public companies with approximately 1,000,000 employees b. The organisations c. The organisations d. Supervisor referral (compared to self referral)	All employees with complete data sets, N=753, 52% male	
Hargrave, G. E., Hiatt, D., Alexander, R., Shaffer, I. & Hargrave, G. E. (2008)	1 year	USA, not reported	EAP services (no details)	a. Not reported b. Not reported c. Not reported d. Unclear	N=155, 57 male / 98 females. Employees, of multiple employers, who received EAP services during a 10-week period in 2006,	
Multi component EAPs						
Uncontrolled pre- post intervention studies						
Hargrave, G. E., & Hiatt, D. (2004)	6 years	USA, not reported	Not reported	a. Not reported b. The organisations c. The organisations d. Self referral & supervisor referral	N=11,756, 7,994 females, 3,762 males, median age 40; employees referred for EAP counselling with an individual provider 1997 – 2003	
Chan, K., Neigbors, C., & Marlatt, A. (2004)	Unclear	USA, various	Unclear - Average number of sessions = 5.19 delivered by counsellors with "diverse training"	a. Not stated beyond "employees" b. Employer c. Unclear d. Unclear	N=3890, 64% female, mean age 41; employees of various (unknown) organisations using services of an EAP corporation.	
Preece, M., Cayley, P. M., Scheuchl, U., Lam, R. W. (2006)	Unclear	Canada, various	Not reported	a. Unclear b. Interlock, an external EAP provider c. Unclear d. Unclear	N=1411, 463 males and 948 females; mean age of sample was 42, with no differences between men and women. Employees using this EAP service who were in the company database and on whom clinical information was available, i.e. Depressed (N=385) or non-depressed (N=1026)	
Ramanathan, C. S. (1992)	4 months	US, health care	Unclear - EAP services included assessment, information and referral, brief counselling and supervisor consultation	a. First 50 employees receiving EAP services who were found to be willing and fit to participate b. Not reported c. Not reported d. Self referral and referral by supervisors due to performance decline	N=50, mean age of 29, gender not reported; first 50 employees willing and found clinically fit to participate in the research and who used EAP services during an eight-month period from June 1985 - February 1986.	
Selvik, R., Stephenson, D., Plaza, C., & Sugden, B. (2004)	Unclear	US, Federal Agencies (public sector)	Not reported	a. Unclear b. US Federal Occ. Health Service c. US Federal Occ. Health Service d. Unclear	N=59,685 cases (out of 116,197 closed cases); Results presented for all employees with complete data sets:	

3.2. 1:1 counselling EAP outcomes

The first cluster of studies identified by this review is evaluations of 1:1 counselling EAPs. This section describes the evaluations in detail. Findings are summarised in Table 3.4 and at Section 3.2.12.

Eight studies reported on the outcomes of individual counselling EAPs. Of these, five studies were conducted in the UK (Cooper & Sadri, 1991; Goss & Mearns, 1997; Guppy & Marsden, 1997; Highly-Marchington & Cooper, 1998; Michie, 1996) two in Canada (Macdonald et al., 1997; Macdonald et al., 2000) and one in Japan (Nakao et al., 2007).

Seven studies were based within one employer: One in the health sector; two in transportation; one in a local authority; one based in a postal service; and one in IT. One study specified that it was conducted in a single company, but did not report details of the host organisation. This study (Macdonald et al., 2000) repeated the methodology of an earlier study (Macdonald et al., 1997). The work was conducted by the same research team, but based in a different organisation with a different EAP provider.

One study was an evaluation of EAPs in multiple organisations: Highly-Marchington and Cooper (1998) evaluated counselling EAPs from different providers in nine UK organisations.

3.2.1. Interventions covered

All eight studies reviewed here described interventions that offered short term confidential counselling. In one instance, delivery was specified as over the phone or through email (Nakao et al., 2007). All other interventions appeared to offer face to face individual counselling. One study specified that counselling was offered off-site (Macdonald et al., 2000). All other interventions did not specify the location of the service provision.

In two studies the intervention was offered by a psychologist (Cooper & Sadri, 1991; Nakao et al., 2007) and three interventions identified the option for onward referral where longer term support was required (Macdonald et al., 2000; Michie, 1996; Nakao et al., 2007). In one study 'short term' counselling was defined as a maximum of 6 sessions (Goss & Mearns, 1997). The maximum numbers of sessions were not specified in other studies, however where reported, the average number of sessions varied. For example Michie (1996) reported that 90% of clients were seen for between one and three sessions; Macdonald et al. (1997) reported the average number of contacts as five (with a range from zero to 40) and Guppy and Marsden (1997) reported the average number of sessions as eight (SD = 5.1).

The counselling approach was specified in only one study (Cooper & Sadri, 1991) as Rogerian client-centred counselling.

3.2.2. Research designs

Six studies used a longitudinal design where participants were contacted on more than one occasion. Two studies (Macdonald et al., 1997 and Macdonald et al., 2000) were cross sectional surveys of EAP clients which also drew on longitudinal company absence data (only the absence data in these studies are considered in this review).

One study (Nakao et al., 2007) used an equivalent comparison group (i.e. men meeting the same study inclusion criteria as for the experimental group in a similar organisation with no EAP provision received the same periodic health examinations and questionnaires as those in the experimental group). Four studies (Cooper & Sadri, 1991; Guppy & Marsden, 1997; Macdonald et al., 1997; Macdonald et al., 2000,) used non-equivalent comparison groups (i.e. employees not using or referred to EAP services). All four studies matched participants with comparison group members of the same age, gender, occupational status or grade and employment length. The final study (Highly-Marchington & Cooper, 1998) presents partial non-equivalent comparison data: for one out of nine company samples for absence data and two general company samples of non EAP users for non absence data. Two studies employed a before and after design with no control group (Goss & Mearns, 1997 and Michie, 1996).

Follow up periods in studies varied between 60 days (Macdonald et al., 1997 and Macdonald et al., 2000) and two years (Nakao et al., 2007), with three studies reporting on a six month follow up period (Cooper & Sadri, 1991; Guppy & Marsden, 1997; and Michie, 1996) and one study reporting at 22 months (Goss & Mearns, 1997). In some cases, the follow up period for absence differed from the other follow up measures. The typical period for measuring absence was the six month prior to first contact with the service and six months post last contact.

3.2.3. Outcomes measured

Seven of the studies drew on organisational absence records as part of the evaluation (Cooper & Sadri, 1991; Goss & Mearns, 1997; Guppy & Marsden, 1997; Highly-Marchington & Cooper, 1998; Macdonald et al., 1997; Macdonald et al., 2000; and Michie, 1996), of which one study (Guppy &

Marsden, 1997) described the pattern of change in absence amongst EAP users. All but two studies (Macdonald et al., 1997 and Macdonald et al., 2000) used longitudinal self report measures of psychological well-being. Three studies employed self–report measures of work characteristics or performance (Guppy & Marsden, 1997; Michie, 1996; and Nakao et al., 2007). Two studies also recorded other performance measures in the form of supervisor ratings (Guppy & Marsden, 1997) and warnings (Cooper & Sadri, 1991).

3.2.4. Absence outcome studies with a control or comparison group

Of the Seven studies measuring absence, five present absence data from comparison groups (Guppy and Marsden, 1997; Macdonald et al., 1997; Cooper and Sadri, 1991; Macdonald et al., 2000; and Highly-Marchington and Cooper, 1998). In all cases the comparison groups consisted of non-equivalent matched controls.

In Guppy and Marsden (1997) a comparison group was matched on age, gender, length of service and job type. Cooper and Sadri (1991) used a control group of 100 employees (against 250 employees in the intervention group). The control group is described as matched in terms of age, sex, grade and years of service, although it is unclear exactly how the matching was undertaken given the difference in numbers between the control and intervention groups. In Highly-Marchington and Cooper (1998) absence data from a comparison group (N = 75) matched on age, sex, job grade and length of time with the company was collected for one company intervention group (N = 75) (out of nine company samples in the study). The two remaining studies (Macdonald et al., 1997 and Macdonald et al., 2000) used identical methodologies and detail the matching process as follows:

> *"A case control design was utilised: For each EP user a matched subject was selected to form a non-EAP comparison group. Records were searched in sequence to find the first non-EAP user that had the following characteristics corresponding to each user:*
>
> *a. Same gender;*
> *b. Same age, plus or minus 1 year;*
> *c. Same occupational status;*
> *d. Same length of employment, plus or minus 1 year;*
> *e. Employed at least until the first day the user entered treatment.*

Three studies (Cooper & Sadri, 1991; Guppy & Marsden, 1997; and Highly-Marchington & Cooper, 1998) found significant improvements in the EAP user group in both days and episodes of absence when absence data from the six months preceding contact with the EAP were compared with data from the six month post intervention period. There were no changes in absence levels for the comparison groups in these three studies during the corresponding six month periods.

Guppy and Marsden (1997) also reported on the pattern of change in absence within the EAP user group: Just under 30 per cent of the sample showed a marked improvement in numbers of days absence and just over 20 per cent showed a similar improvement in episodes of absence.

When levels of absence between intervention and control groups was examined, Highly-Marchington and Cooper (1998) found that whilst intervention and control groups had similar levels of absence prior to counselling, in the six months post counselling the intervention group had significantly lower levels of days absent and absence events than the control group. Cooper and Sadri (1991) found absence levels for the intervention group remained significantly higher than for the control group during the six month post counselling follow up period despite a significant reduction of absence in this group from pre-counselling levels.

Two studies (Macdonald et al., 1997 and Macdonald et al., 2000) report on levels of absence over three broad time periods: Before, during and after treatment. In both studies absence levels remained stable across the time periods for the control groups. Macdonald et al. (1997) found that absence levels increased from pre to post treatment for the intervention group. They found EAP user absence levels were comparable to matched controls pre treatment, but significantly higher post treatment. When yearly absences rates were considered it was found that absenteeism rates were significantly higher for EAP users when compared to matched controls and total workforce. EAP users were also significantly more likely to have days lost due to work-related injuries. EAP users more likely to arrive late or leave early from work, or to only complete half a days work. The second study (Macdonald et al., 2000) found no significant change in absenteeism levels for the EAP group from pre to post treatment.

3.2.5. Other absence outcome findings

Three of the seven studies provide data on pre and post intervention absence levels without a control or comparison group.

Michie (1996) found significant improvements in both days and episodes of absence in the EAP user group when the six month period preceding date of contact with the EAP was compared with the six months post EAP contact. Goss and Mearns (1997) compared pre and post counselling levels of absence over three and six month periods. In both analyses there were significant drops in the numbers of days absent (data on episodes of absence is not reported).

Highly-Marchington and Cooper (1998) reported absence figures for four companies in which this data was available (out of nine organisations covered by the research study). In two out of the four companies there were highly significant reductions in absence for the six month periods post counselling when compared to the six month pre intervention periods. In the third organisation the reduction in absence was just significant and in the fourth organisation there was no significant reduction in absence. However, this organisation's pre-intervention levels of absence were already extremely low (2.69 mean days absence over the six month pre-intervention period).

3.2.6. Well-being results

Six of the eight evaluations of counselling EAPs present longitudinal findings on psychological well-being. Outcome measures range from well-established scales such as the GHQ-12 (changes in levels of mild to moderate anxiety and depression) and the Rosenberg Self-Esteem scale to single item measures of e.g. social functioning.

All six studies reviewed in this section report significant increases in self reported psychological well-being for the EAP from pre to post intervention. Three of the studies (Cooper & Sadri, 1991; Guppy & Marsden, 1997; and Nakao et al., 2007) describe the pattern of change in well-being results within the EAP groups studied.

3.2.7. Well-being outcome studies with a control or comparison group

Three of the eight evaluations of counselling EAPs present longitudinal findings on psychological well-being for intervention and comparison groups. However, Highly-Marchington and Cooper (1998) collected data from two (out of nine) companies via a questionnaire of all staff just prior to the launch of an EAP in one company and the re-launch of an existing EAP at the second. A second round of surveying was then undertaken 18 months to two years later. In both cases this was a company-wide survey. It is unknown how many of the same employees in either company responded to the survey at both time points. It is also unclear how EAP users were excluded from this quasi-comparison group. Finally, the authors do not report whether the intervention groups in the companies where this survey work was undertaken had shown improvements in psychological well-being from pre to post counselling or not. As a result, it is difficult to draw any conclusions from the comparison data presented in the study and it is not considered further in the review.

Of the two remaining studies, Nakao et al. (2007) used a comparison group of employees in a similar organisation and comparable roles, but with no EAP. They found no significant differences between the EAP group and the comparison group at baseline. A "*significant but marginal*" decrease in depression (Hamilton Depression Scale – HAM-D) in the EAP group from pre to post intervention was reported. Within the EAP group depression scores decreased for 53 per cent of the population, remained the same for 10 per cent of the population and increased for 38 per cent of the population. There were no significant changes in HAM-D scores for the comparison group over the course of the research.

Cooper and Sadri (1991) using a non-equivalent comparison group (i.e. non EAP users) similarly found no changes in comparison group scores for measures of well-being over the period of the research compared with significant improvements from pre to post counselling for the EAP group overall on the three subscales of the Crown-Crisp Experiential Index (anxiety, somatic anxiety and depression). The pattern of change is similar across the three scales. For anxiety 62 per cent of the EAP group improved, 32 per cent remained the same and six per cent deteriorated, for depression 60 per cent improved, 24 per cent stayed the same and 16 per cent deteriorated.

Cooper and Sadri (1991) also compared absolute levels of anxiety, somatic anxiety, depression and self-esteem for comparison and EAP groups. The EAP group was found to have scores indicative of significantly poorer psychological well-being on all measures pre-intervention. These differences remained significant at the post intervention follow up despite significant improvements in the intervention group over time.

3.2.8. Other findings on psychological well-being

Guppy and Marsden (1997) found strong significant improvements in mental health (as measured by the GHQ-12) from pre to post intervention periods. Fewer than five per cent of the intervention group showed deterioration in GHQ-12 scores where as 35 per cent showed an improvement that would be considered clinically significant.

Two studies measuring self esteem (Cooper & Sadri, 1991 and Goss & Mearns, 1997) found significant improvements in self esteem from their pre-intervention scores (Rosenberg's Self-Esteem scales). Again, Cooper and Sadri (1991) describes the pattern of change in self-esteem reported by the EAP group: 39 per cent reported improved levels of self-esteem, for 49 per cent there was no change and for 12 per cent a deterioration in self esteem was reported.

Highly-Marchington and Cooper (1998) found highly significant improvements in self-reported mental health for the EAP groups from pre to post counselling and follow up (on the OSI mental health subscale, measuring work-related mental health and the GHQ-12) across the whole sample (covering nine organisations). However, further analysis revealed a more complex picture of change. In eight of the participating organisations there was a sufficiently large sample for the results to be analysed by company. In four of the organisations there were no changes in levels on any of the psychological well-being measures from pre to post counselling. At a fifth organisation, significant improvements were found in general well-being (GHQ-12), but not job related mental health (OSI mental health subscale). Significant improvements in general well-being and job related mental health were found in three of the eight organisations studied.

3.2.9. Work attitudes and performance results

Five studies collected data on various work attitudes, work characteristics and performance measures. They measured changes over time on a range of outcome measures ranging from: established measures of work attitudes such as job satisfaction and organisational commitment; measures of work characteristics such as demands, control and support and perceived job stress; and performance rating in the form of self ratings of performance at work, counsellor ratings of productivity and supervisor ratings of performance.

3.2.10. Work attitude and performance studies with a control or comparison group

Two studies included data from comparison groups. Nakao et al. (2007) measured work characteristics with the Job Content Questionnaire (JCQ). This questionnaire is made up of three subscales measuring work related demands, control and support. The three JCQ scale scores at baseline were not significantly different between the EAP group and comparison group and there were no significant changes in the three scale scores in either group over time for the intervention period.

Cooper and Sadri (1991), using Warr's 15 item measure of job satisfaction (Warr et al., 1979), found no changes in levels of job satisfaction from pre to post counselling for the EAP group. They also reported no significant differences in job or organisational commitment from pre to post counselling for the EAP group. Findings for a non equivalent comparison group revealed no changes in job satisfaction or organisational commitment scores for the comparison group for the period of the study. When compared, absolute levels of job satisfaction and organisational commitment did not differ between the EAP group and the comparison group at both pre and post intervention measures.

3.2.11. Other work attitudes and performance results

Three other studies (Guppy & Marsden, 1997; Highly-Marchington & Cooper, 1998; Michie, 1996) measured job satisfaction. Guppy and Marsden (1997), also using Warr's 15 item measure of job satisfaction (Warr et. al., 1979), found no changes in levels of job satisfaction from pre to post counselling. A second study (Highly-Marchington & Cooper, 1998) using the 22 item Job Satisfaction scale of the Occupational Stress Indicator (OSI) also found no change in job satisfaction levels from pre to post counselling. The third study (Michie, 1996) using a single item measure of satisfaction with work found a significant improvement on pre-counselling levels when measured in the final counselling session, but no significant improvement at six month follow up

Guppy and Marsden, 1997 measured job commitment (single item) and found no significant difference from pre to post counselling for the EAP group.

Highly-Marchington and Cooper (1998) used four subscales from the OSI Sources of Pressure scale measuring work characteristics. They found no significant changes over time in the EAP group on any of the four subscales: Factors Intrinsic to the Job; Relationships at Work; Organisational Structure and Climate; and Home/Work Interface.

Two studies included measures of work performance. Of these, the most comprehensive data is reported by Guppy and Marsden (1997) including self-reports, supervisor and customer rating of performance. There were significant improvements in self ratings of performance and these were mirrored by strong significant improvements for the EAP group in both supervisors' and clients' ratings of work performance over the period of intervention

One other study includes self report data only. Michie (1996) (using a single item measure of work functioning) found no change in pre to post counselling self-ratings.

3.2.12. Summary of evidence for 1:1 counselling EAPs

What the evidence says:

Finding 1: Evidence on the effectiveness of 1:1 counselling EAPs

There is a lack of evidence about whether 1:1 counselling EAPs are effective in reducing absence and improving well-being, work attitudes or performance compared to other forms of support or no intervention.

No evaluations of 1:1 counselling EAPs were identified that compared EAP users with participants randomised to a control group (where they received no intervention or alternative intervention). At present no conclusions can be drawn about the extent to which any perceived improvements in EAP user groups can be attributed to the EAP they attended or the extent to which these changes could have occurred in the absence of any intervention.

Finding 2: Absence - EAP users' absence pre and post intervention

There were mixed findings on the extent to which EAP users absence levels changed following attendance at an EAP. In the main, studies reported reduced absence for EAP users compared to their pre EAP levels. However, two studies reported no change or increased absence for EAP users compared to pre EAP.

Finding 3: Absence - EAP users' absence compared with that of non-EAP user comparison groups

Reductions in absence amongst EAP users do not necessarily mean EAP users' attendance improves to the same levels as their comparison groups. The majority of studies considered in this section found that absence levels for EAP users remained significantly higher than for comparison groups post intervention In contrast, one study found reductions in absence were achieved that matched or bettered the average level of absence for a comparison group.

Finding 4: Absence – variations in absence levels following EAP contact

For some organisations, providing EAP services to the workforce leads to a drop in absence levels for some of the employees who contact the EAP. However, evidence shows that there is considerable variation in absence following EAP attendance. Overall positive changes in absence can mask variations (including no change) for some individuals.

Finding 5: Well-being - Changes in EAP user well-being following EAP contact

All the studies report significant improvements in psychological well-being for the EAP user groups from pre to post EAP contact. Two studies also reported significant improvements in self esteem over the same period.

Finding 6: Well-being - Comparison of EAP user well-being with that of non-equivalent control groups

Only one study compared levels of psychological well-being between the EAP user and comparison groups. Despite significant improvements in the EAP user group, their level of psychological well-being remained significantly lower than that of the comparison group.

Finding 7: Well-being – variations in well-being outcomes

Evidence on the impact of EAPs on psychological well-being is mixed. All studies considered here report overall improvements in psychological well-being for the EAP user groups, however, these positive group level results can mask considerable variations. Where there are significant increases overall in psychological well-being or self esteem, these are not uniform across all EAP users. For example, three studies looked at changes in depression and anxiety within the EAP user groups. Improvements were found in between 35 – 62 per cent of EAP users, deterioration was found in between five and 38 per cent of EAP users.

Finding 8: Work attitudes and performance

The evidence suggests that EAP user groups do not differ from comparison groups in terms of work characteristics (demands) or job satisfaction. A further finding, consistently reported in studies included in this section, is that job satisfaction does not change as a result of EAP attendance nor do ratings of work characteristics

Self reports of work performance were found to improve in two studies and this was corroborated by supervisor rating in one study.

Table 3.4: Effectiveness studies– Main Outcomes for 1:1 counselling EAP

Key: ☺ significant positive difference in favour of EAP; 😐 no significant difference; ☹ significant negative difference

All analyses between intervention and comparison groups or pre and post intervention for EAP groups unless otherwise stated; Where p values were provided: *p<0.001 **p<0.05 †p<0.1

1-2-1 counselling EAPs			
Controlled studies			
Study	**Well being**	**Work related measures**	**Absence / sickness: non-self-report**
Cooper & Sadri, (1991)	<u>Difference between intervention and comparison group scores</u>: **Baseline: Mental health ☹ **Follow-up: Mental health ☹ <u>Pre and post intervention scores</u>: *Anxiety, Somatic Anxiety, Depression and Self-Esteem ☺ **Health Behaviours Questionnaire ☺	<u>Difference between intervention and comparison group scores</u>: Job satisfaction and Organisational commitment ☹ <u>Pre and post intervention scores</u>: Job satisfaction and Organisational commitment 😐	<u>Difference between intervention and comparison group levels</u>: Baseline: **Absence days ☹ ; **Days lost ☹ Follow-up: **Absence days 😐 ; **Days lost 😐 <u>Pre and post intervention levels</u>: *Absence days ☺ ; *Days lost ☺ ; *Warnings ☺
Guppy & Marsden, (1997)	<u>Pre and post intervention scores</u>: *Mental health (GHQ-12) ☺	<u>Pre and post intervention scores</u>: *Self-reported performance ☺ *Supervisor assessment of performance☺	<u>Difference between intervention and comparison group levels</u>: Post intervention mean days absence EAP N= 15.31; control N= 4.65 <u>Pre and post intervention levels</u>: *Absence days ☺; *Absence episodes ☺
MacDonald et al., (1997)			<u>Difference between intervention and comparison group levels</u>: At baseline: *Absence days ☹ ; *Days lost ☹ During treatment: Absence days ☹ ; Days lost ☹ At follow-up: Absence days ☹ ; Days lost ☹ ; **Warnings ☹
MacDonald et al., (2000)			<u>Difference between intervention and comparison group levels</u> (averages only given): At baseline: Absence days ☹ During treatment: Absence days ☹ At follow-up: *Absence days ☹ ; *"incomplete" days ☹ <u>Pre and post intervention levels</u>: Absence 😐
Nakao et al., (2007)	<u>Difference between intervention and comparison group scores</u>: Hamilton Depression Scale (HAM-D) 😐 <u>Pre and post intervention scores</u> (EAP group): *HAM-D ☺, (5 Items within HAM-D: **suicidal thoughts, *agitation, *psychomotor retardation, **guilt, and **depressed mood ☺)	<u>Difference between intervention and comparison group scores</u>: Job Content Questionnaire: **Baseline 😐 **Follow-up 😐	
Uncontrolled studies			
Study	**Well being**	**Work related measures**	**Absence / sickness: non-self-report**
Michie, (1996)	<u>Pre and post intervention scores</u>: *Anxiety, *depression, *satisfaction with life outside work and **satisfaction with self ☺	<u>Pre and post intervention scores</u>: Work satisfaction, work functioning , functioning outside work 😐	<u>Pre and post intervention levels</u>: *Days and *episodes of absenteeism ☺
Goss & Mearns, (1997)	<u>Pre and post intervention scores</u>: *Self esteem, *Self image and ideal self, *Hopefulness, †Distress and difficulty ☺		<u>Pre and post intervention levels</u>: Numbers of days absence ☺

Highly-Marchington & Cooper, (1998)	Pre and post intervention scores (overall findings – 9 organisations): Last session: Mental health, GHQ-12 scores ☺ Three months: Mental health, GHQ-12 scores ☺ Pre and post intervention scores (by organisation): Last session (8 organisations): 4 orgs. – *Mental health, *GHQ-12 scores 😐 1 org. – *Mental health 😐, *GHQ-12 ☺ 3 orgs. – *Mental health, *GHQ-12 ☺ Three month follow up (3 organisations): 1 org. – *Mental health, *GHQ-12 scores 😐 1 org. – *Mental health ☺,* GHQ-12 😐 1 org. – *Mental health, *GHQ-12 ☺	Pre and post intervention scores (overall findings – 9 organisations): Last session: job satisfaction and sources of pressure 😐 Three month follow up: job satisfaction and sources of pressure 😐 Pre and post intervention scores (by organisation): Last session (8 organisations): No variation between organisations Three month follow up (3 organisations): 1 org. – **Stress from organisational structure and climate ☹	Pre and post intervention levels (overall findings – 4 organisations): *Days absent, *Number of absence events ☺ Pre and post intervention levels (by organisation): 2 orgs. - *Days absent, *Number of absence events ☺ 1 org. - **Days absent, **Number of absence events ☺ 1 org. - Days absent, Number of absence events 😐	

3.3. EAP programme element evaluations

The second cluster of studies considered in this report reviews evidence on evaluations of specific elements of EAPs. Typically these are extensions of, or additional, EAP services designed to deal with a specific diagnosis or a process issue.

3.3.1. Interventions covered

Five studies report on evaluations of EAP programme elements. In four studies (Lapham et. al., 2003; Walsh et. al., 1991; Foote and Erfurt, 1991; and Hargrave et. al., 2008) the programme element being evaluated is designed to address a specific client problem. Three of the studies included here address substance and/or alcohol misuse. The fourth is a programme focused on anger management (Hargrave et. al., 2008) and the final study in this section (Hiatt et. al., 1999) considers the impact of different referral routes on client outcomes.

The heterogeneity of these studies and (in contrast to other sections of the report) the relatively detailed descriptions of interventions covered, means that they are best considered individually.

Lapham et. al., (2003) evaluates the impact of a substance misuse (SM) prevention programme introduced alongside an existing EAP in a sector (Health Care) "…*where stressful working conditions and access to controlled substances that are commonly misused…"* indicated the need for early intervention. The SM prevention programme consisted of SM awareness training, information on how to reduce drinking and brief counselling.

Walsh et. al., (1991) tests the effectiveness of three alternative approaches for EAP clients identified as having an alcohol problem. Interventions included: compulsory inpatient treatment; compulsory attendance at AA and a third condition where clients had a choice of options.

Foote and Erfurt, (1991) test whether the provision of enhanced follow-up by EAP staff has an effect on the recovery of EAP clients with drug or alcohol problems and the prevention of relapse during the year after the completion of treatment. Both control and intervention groups received treatment as usual (i.e. referral for detox and inpatient or residential care; self-help; family physician). The intervention group received enhanced follow up by EAP staff (the follow-up counsellor makes routine contacts with clients, weekly for one month post treatment, monthly for next 5 months, then bi-monthly for 6 months with the option to revert to weekly contact at any point if a threat of relapse was detected). The control group received standard follow up on as “as needed” basis.

Hargrave et. al., (2008) evaluated the impact of a new anger management intervention, designed to meet an identified need in client organisations. The programme was a three week group intervention, offered twice per week in teleconference format. Participants were given an orientation to the group, a participant workbook, a relaxation CD with guided imagery, a hands free headset and called a toll free number for each session.

The fifth evaluation included in this section (Hiatt et. al., 1999) examined the difference between EAP clients who self refer and those who attend via a Job Performance Referral (JPR) where supervisors can encourage employees to seek treatment before they might do so on their own.

3.3.2. Research designs and outcomes measured

Three of the studies considered here have strong experimental designs. Foote and Erfurt, (1991) is a randomised controlled trial (RCT) in an organisational setting with random assignation of new EAP clients to the intervention or treatment as usual groups. The comparator is therefore EAP clients not in receipt of enhanced follow up services. Follow up was for the 12 months post treatment and data was collected on absenteeism (cost data on disability payments from payroll , and health care benefit information from insurance records were also collected and presented in the cost effectiveness section of this report)

Walsh et. al., (1991) is also an RCT in an organisational setting in which newly identified clients with alcohol problems were randomly assigned to one of three treatment conditions. The comparator groups were EAP clients in alternative treatment regimens. Measures of job performance and drinking behaviour were collected through company records, structured face to face 90 minute intake interviews using standard diagnostic scales and through follow up interviews repeated regularly throughout the two year follow up period. Outcome measures collected included the Short Michigan Alcohol Screening Test (SMAST); the Iowa Stages Index and the Rand drinking symptoms checklist.

Lapham et. al., (2003) used a quasi-experimental design in which the intervention was introduced in to one hospital. There was no random assignation of clients to control or intervention groups, rather the Hospital’s satellite facilities were used as the comparison group (i.e. employees with EAP services, but no SM prevention programme). Information for the analysis was obtained from four data sources: The Human resources database, measuring hire and termination rates; the organisation’s employee health database provided injury types; the EAP database housed EAP referrals by date and reason; the organisation’s patient database provided dates and types of health care services for each employee; the EAP provider recorded referral source and reason. The period of intervention ran from the beginning of July, 1996 and the post intervention period was specified as 1/9/1998 – 1/7/2000. Data was collected for the period 1/7/1996 to 1/7/2000. Findings are presented in the form of number of events ‘per person month of employment’. An event was an EAP referral, injury, job termination or medical service.

The two remaining studies in this cluster (Hargrave et. al., 2008 and Hiatt et. al., 1999) both used a pre and post intervention design.

Hargrave et. al., (2008) combined data from self report and supervisor ratings to evaluate the impact of an anger management intervention. This study did not include a comparison group. The follow up for this study was 90 days post treatment. Outcome measures included the Hostility and Interpersonal Sensitivity scales of the Symptoms Checklist – the SCL-90; and supervisor ratings (also taken at 90 days post treatment) of the participants job status, change in frequency of angry outbursts and ability to get along with supervisor and co-workers. Of the 100 employees referred to the Anger Management programme during the study period, findings were presented on 59 who completed the programme and for whom complete data sets were available. The findings of this study are therefore based on a selected group and cannot be extrapolated beyond the group studied.

Hiatt et. al., (1999) draws on ratings made by supervisors and therapists. On entry to the programme the therapist completes an assessment form containing a DSM-IV diagnosis and ratings of the clients functioning. Outcome measures included supervisor rating of specific elements of employee job performance; attendance, quality and quantity of work, behaviour/conduct and interpersonal relationships (single item measures with response scale of 1 – 5). Three months after intake, supervisors made ratings on the same items. The sample for this study was drawn from Job Performance Referral (JPR) clients who were referred directly to the EAP by their supervisor. The intervention group consisted of all JPR cases from 1989 – 1977 for which there were complete data sets of supervisor ratings. The non-equivalent comparison group for this study was self-referral clients who directly accessed the EAP during 1996. The intervention group was selected and results therefore cannot be extrapolated beyond this group.

3.3.3. Results for drug, alcohol or substance misuse problems

Treatments evaluated for drug, alcohol or substance misuse problems consisted of:

- A substance misuse prevention programme
- A comparison of different treatment regimens, and
- Intensive counsellor follow up.

Lapham et. al., (2003) found that following the introduction of a substance misuse (SM) programme, no evidence was found that the SM programme impacted on job loss or injury rates. Additionally no increases were found in the use of in-patient or out-patient services for the intervention group and no difference in use of these services between the intervention and control groups.

Other outcome measures included rate of referral to EAP which it was hypothesised would increase following introduction of the programme, as supervisors became better at detecting signs of these problems in employees. SM related EAP referrals in the intervention group were significantly higher than those in the comparison site. However, as Lapham et. al., 2003 point out, intervention site SM related EAP referrals increased slightly whilst those at the comparison site decreased markedly.

Walsh et. al. (1991) Compared different treatment regimens for alcohol abusing workers: compulsory in-patient treatment; compulsory Alcoholics Anonymous attendance; or a choice of either option or no action as long as the individual remained sober on the job.

In terms of job performance outcomes, subjects in all three groups showed substantial and sustained improvements in all aspects of job functioning. Seventy-six per cent of supervisors interviewed at 24 months rated subjects job performance as good (42%) or excellent (34%). Proportions of employees with warning notices dropped (from 33% at baseline) to under two per cent at three and six months and stayed under five per cent thereafter.

The number of hours recorded by the company as missed from work dropped by more than a third in all the groups when the six month period prior to baseline is compared with the last six months of follow up two years later. There were no significant differences in job terminations between the three groups during the follow up period.

Alcohol related outcomes reveal that all three groups had substantial and fairly stable improvement on all 11 of the self-report measures of drinking, with some deterioration over time.

Although all groups showed significant and sustained improvement in drinking outcomes following intervention there were considerable variations between the groups:

- the hospital group was significantly more likely to include continuous abstainers and this group had a significantly lower rate of relapse than the AA group or the choice group
- the difference in rate of relapse between the choice and AA groups were not significant
- On eight measures of drinking and drug use at one to four follow-up points the hospital group had the fewest problems on all but two of the measurements. On most, the compulsory AA group did least well.

Foote and Erfurt (1991) report outcomes in terms of work attendance (absenteeism); disability payments (wages for sick leave); and health care benefit utilization following the introduction of an enhanced follow up with EAP substance abuse clients. All data were collected from payroll or insurance records during the follow-up year. All are costs except for absence, so only absence is reported here, the other data are dealt with in the cost effectiveness section. Overall, Foote and Erfurt found no significant difference in absenteeism between the intervention and control. Further comparison with the top one per cent of each group removed from the analysis (i.e. removal of outliers that might skew results) also failed to demonstrate a difference in absence levels. However, it should be noted that the intervention in this study was poorly implemented with only 29 per cent of the intervention group receiving the planned level of follow up.

3.3.4. Results for anger management problems

Hargrave et. al. (2008) found highly significant changes in inter-personal sensitivity and anger – hostility as measured by subscales on the revised Symptoms Checklist (SCL-90-R). Effect sizes calculated for these findings indicated "…*values in the 'large effect' range*…"

Supervisor ratings were also taken at referral and at 90 days post treatment. Seventy-two per cent of participants were rated as having their jobs in jeopardy on referral to the programme. Of those whose jobs were in jeopardy, 81 per cent were rated by supervisors as having their job 'in good standing' post treatment. Seventy-four per cent of supervisors reported no anger incidents amongst referred employees following treatment whilst 17 per cent reported a moderate reduction in such incidents. No supervisors reported deterioration in employees referred.

With regard to productivity, 44 per cent of supervisors rated their employees as having made at least moderate improvement in this area.

3.3.5. Results for Job performance referrals

Hiatt et. al. (1999) found significant positive changes in supervisor ratings of employee attendance, behaviour/conduct, interpersonal relationships, quality and quantity of work three months after referral to an EAP via a job referral scheme. Therapists ratings of changes in employees job, marital and interpersonal functioning are not reported as changing significantly from referral to case closure. However, therapists rating of change in job function were modestly correlated with supervisor ratings.

When compared to a non-equivalent comparison group (of self referred EAP users from a different time period), Hiatt et. al. found that therapists tended to rate job functioning both pre and post EAP contact as lower for the job referral group. It is not reported whether this is a significant difference.

3.3.6. Summary of evidence for EAP programme elements

Evidence for the impact of EAP programme elements is variable. The strongest research designs (RCTs and quasi experiments) show mixed results for different interventions, and there are insufficient studies of specific interventions to allow anything more than a very rudimentary description of results.

Three interventions for alcohol problems all showed significant improvements for clients (based on one study), two interventions for substance misuse showed mixed results (based on two studies). However the implementation difficulties experienced in one study indicate a lack of evidence about the intervention rather than evidence of no effect.

Two other studies consider programme elements addressing anger management problems and job performance referral processes. Both report significant improvements across a range of attendance, performance and well-being variables (both self-report and supervisor ratings). However, the selective nature of sampling in these studies (only clients with complete data sets were selected from company records) means that the findings cannot be generalised beyond the group studied.

Table 3.5: Effectiveness Studies – Main outcomes for EAP programme elements

Key: ☺ significant positive difference in favour of EAP; 😐 no significant difference; ☹ significant negative difference
All analyses between intervention and comparison groups or pre and post intervention for EAP groups unless otherwise stated; Where p values were provided: *p<0.001 **p<0.05 †p<0.1

EAP Program elements				
Study	**Well being**	**Work related measures**	**Absence / sickness: non-self-report**	**Other results**
Foote & Erfurt, (1991)				Special follow-up does not predict absenteeism, but does predict relapse†; Age or ethnicity predict both** Implementation fidelity - poor
Lapham et al., (2003)			Use of inpatient , out patient and ED rooms	Rates of referral**
Walsh et al., (1991)		<u>Pre and post intervention findings:</u> At 24 months: supervisor assessment was good (42%) and excellent (34%) Warning notices (proportions only): 33% at baseline; 2% at 3 and 6 months; 5% at >6 months	<u>Pre and post intervention levels</u>: Number of hours missed from work for 6 months before baseline and last 6 months of follow up 2 years later reduced by one third (company data)	Relapse rates: *Hospital group compared to AA group and "choice" group ☺ Likelihood of requiring additional treatment: *Hospital group vs AA ☺ , **AA vs choice ☺
Hargrave et al., (2008)		<u>Pre and post intervention scores</u>: *Interpersonal sensitivity (SCL-90-R) ☺, *Anger-Hostility (SCL-90-R) ☺ <u>Supervisor ratings of</u> Jobs in jeopardy pre intervention 72%, of which 81% in good standing after treatment. Relationships with supervisors and co-workers – 75% of employees improved Productivity – 44% of supervisors rated employees as moderately improved or better		Calculation of Jobs saved
Hiatt et al., (1999)		<u>Pre and post intervention scores</u>: *Behaviour/conduct ☺ *Interpersonal ☺ *Quality of work ☺ *Quantity of work ☺	<u>Pre and post intervention levels</u>: *Attendance ☺	Significant correlation (r=.18, p<.05) change in job functioning as assessed by supervisor and therapist

3.4. Multi component EAP outcomes

The third cluster of studies covered in this review is multi component EAPs. 'Multi component EAP' is used here to denote an EAP that offers a range of different services. Studies in this cluster differ from others in the review in that they do not focus on one type of EAP provision or a specific element of an EAP, but evaluate a range of EAP services.

Five studies were identified that report on evaluations of multi component EAPs. Four of the studies reported in this section are based in the United States, one in Canada. One study reports on a single EAP (Ramanathan, 1992) in a health sector organisation. The remaining four studies draw on data from EAP providers serving multiple organisations (sample sizes range from 1,411 to 59,865, numbers of organisations included are not given)

3.4.1. Interventions covered

Four out of five studies in this group provide little or no description of the intervention being evaluated. For example, Preece et. al. (2006) give the following description of the provider – Interlock:

> *"…an Employee Assistance Program offering services to over 350 companies across Canada."*

Hargrave and Hiatt (2004) and Chan et. al. (2004) both state that all data is from an individual EAP provider servicing a number of organisations. Chan et. al. (2004) also say:

> *"EAPs differ in service implementation, and counsellors have diverse training."*

Ramanathan, 1992 describes the intervention as follows:

> *"EAP services were those services provided by the organization's EAP counsellors. The types of services rendered included assessment, information and referral, brief counselling, and supervisor consultation…This EAP was an internal program and its objective was to provide services to employees having personal problems that interfere with work."*

Selvik et. al., 2004 report on EAP services provided by the Federal Occupational Health (FOH) service unit of the U.S. Department of Health and Human Services Program Support Centre. The services offered are not described, but the authors describe the FOH's EAP service as providing services to in excess of 3.3 million federal employees and family members across the United States.

A web based search identified the following information about the EAP services provided by FOH:

> *"The EAP is a comprehensive program that helps employees resolve personal problems that may adversely impact their work performance, conduct, health and well-being. FOH's EAP addresses problems in the quickest, least restrictive, and most convenient manner while minimizing cost and protecting client confidentiality. Among the services we offer are:*
>
> - *Let's Talk Newsletter*
> - *Advance Directives*
> - *What to Expect When Contacting the Employee Assistance Program*
> - *EAP Website*
> - *Assessment, counselling and referral services*
> - *Courses, Seminars, and Workshops*
> - *Critical Incident Stress Management (CISM)*
> - *Employee risk management (supervisor and union consultation)*
> - *"Continuous Quality Improvement" reviews*
> - *Financial services*
> - *Legal services*
> - *Management reports (utilization and trend analyses)*
> - *Program promotion*
> - *Law Enforcement EAP*
> - *EAP Monthly Campaigns"*
>
> (http://www.foh.dhhs.gov/services/EAP/EAP.asp on 5/5/2011)

3.4.2. Study design

All five studies included in this section of the review use a pre and post design. In three studies (Preece et. al., 2006; Chan et. al., 2004; and Selvik et. al., 2004) the sources of data are counsellor ratings of clients on entry to and exit from the EAP. There is no follow up beyond the final EAP session.

For the two remaining studies (Hargrave and Hiatt, 2004; and Ramanathan, 1992) the sources of data are client self report. Both studies have a two month follow up period and one (Ramanathan, 1992) also collected data at four months post intervention.

Four of the studies in this section of the review were uncontrolled, one included a non-equivalent comparison group of other EAP users from a different time period. One of the studies (Ramanathan, 1992) used employer records to measure absence.

The study population in Ramanathan (1992) was 137 employees who received EAP services during the study period and the sample consisted of the first 50 clients willing and clinically fit to participate. Four studies (Preece et. al., 2006; Chan et. al., 2004; Selvik et. al., 2004; and Hargrave and Hiatt, 2004) used a similar research design. In these studies data held by EAP provider organisations were presented on samples of EAP users drawn from multiple organisations. Both Hargrave and Hiatt, (2004) and Selvik et. al., (2004) presented data on subsamples which consisted of clients for whom a full data set was available. In Selvik et. al., the subsample (N = 59,865) represented 51 per cent of all EAP users during a three year period.

Two studies (Preece et. al., 2006; and Chan et. al., 2004) did not specify whether samples consisted of all EAP users for the study period, however the sample size remained constant across analyses in the Chan et. al. study, indicating no missing data from the sample being examined.

3.4.3. Outcomes measured

Three studies measured absence. In one study this data was collected via company records (Ramanathan, 1992). Preece et. al., (2006) and Selvik et. al., (2004) both report clinician assessment of absence at entry to and exit from the EAP.

All five studies include measures of well-being. In two studies (Selvik et. al., 2004; and Preece et. al., 2006) the measure used was the clinician administered Global Assessment of Functioning Scale (GAF; DSM-IV, 1994). This scale was created by the American Psychiatric Association and is intended to give a numeric "snapshot" of a person's social, occupational and psychological functioning on a scale running from one to 100. Two studies (Hargrave and Hiatt, 2004; and Ramanathan, 1992) used self report measures of psychological well-being. One study (Chan et. al., 2004) used counsellor rated outcome at termination on a dichotomous variable (problem resolved or not resolved).

Work attitudes and performance were measured by clinician ratings at close of contact with the EAP in two studies (Preece et. al., 2006 and Selvik et. al., 2004). Other measures included self reported job functioning (single item – Hargrave and Hiatt, 2004) and turnover intention combined with actual behaviour (i.e. resigned or still with the company) at the close of the study (Ramanathan, 1992).

Additionally supervisor ratings of employee performance were gathered when EAP clients were referred to the EAP by supervisors (Ramanathan, 1992). Supervisors rated their supervisees on a three-point scale where ‘-1’ indicated deterioration in performance, ‘0’ indicated maintenance, and ‘1’ indicated improved performance.

3.4.4. Absence outcome studies

All three studies reporting on absence pre and post EAP contact reported significant improvements in attendance and or time-keeping following contact with the EAP. Preece et. al., (2006) rated work absence due to the presenting problem as either 'None', 'Mild', 'Moderate' or 'Severe'. For this variable, 'Mild' work absence was defined as absence of a few hours, 'Moderate' work absence was defined as an absence of from one to five days, and 'Severe' absence was defined as currently being on medical leave. The results of the analyses for work absence indicated an overall improvement in attendance over time. The sample was also split in to those with a diagnosis of depression and those without. A significant interaction between time and group membership was found, indicating that the intervention was helpful in reducing work absence for both groups, but there was a greater degree of improvement for those in the non-depressed group. Employees in the depressed group continued to report significantly higher work absence than employees in the non-depressed group at closing.

Ramanathan, (1992) found a significant decrease in absenteeism between baseline and four months, based on company records.

Selvik et. al., 2004 used a single item to measure absence and tardiness, with data collected via a counsellor during the client's final session. There was a significant decrease in levels of absence and tardiness from pre to post EAP contact.

3.4.5. Well-being results

Two studies (Preece et. al., 2006; and Selvik et. al., 2004) used the American Psychiatric Association's Global Assessment of Functioning (GAF) scale to measure well-being. In both studies ratings were made by clinicians on entry to and exit from the EAP.

Both studies found significant improvements in GAF scores from pre to post counselling. Selvik et. al., (2004) describe the observed mean change in GAF scores (from 64.11 – 70.38) as equating to moving from:

"*a range of mild symptoms and difficulty in functioning*"

To

"*transient, slight symptoms and impairment levels*".

However, there is a discrepancy with the way the APA describes the relevant GAF thresholds:

> *"**80 - 71** If symptoms are present they are transient and expectable reactions to psychosocial stressors; no more than slight impairment in social, occupational, or school functioning.*
> ***70 - 61** Some mild symptoms OR some difficulty in social, occupational, or school functioning, but generally functioning pretty well, has some meaningful interpersonal relationships."*

(H:\Forms\NA and MBHN Forms\MBHN\GAF - guidelines to determine level of care.doc)

Suggesting that the post counselling GAF scores in Selvik et. al. did not quite achieve the threshold of 71 associated with more transient symptoms.

Preece et. al. (2006) also compared GAF scores for depressed and non-depressed clients. They found no interaction between time and group membership, suggesting that both groups improved at the same rate on this measure. However, GAF scores for employees in the depressed group remained significantly lower at closing than GAF scores for employees in the non-depressed group.

Hargrave and Hiatt (2004) found significant improvement in symptom impact on 10 dimensions (single item, self-report measures) at two month follow up. Significant improvements were also found on five single item ratings of client functioning: Marital; health; family; interpersonal; and well-being functioning. They also found a decrease of 48 per cent in numbers of employees reporting moderate to severe depressive symptoms with corresponding decreases in anxiety and hostility and increases in feelings of happiness and well-being.

Ramanathan, 1992 found a significant relationship between total stress and absenteeism. Two months after the initial contact with the EAP, higher stress was associated with higher rates of absenteeism and lower stress was associated with lower rates of absenteeism. No significant relationship existed between stress and absenteeism four months after the initial contact with EAP.

3.4.6. Work attitude and performance results

Using self report measures of stress (Derogatis Stress Profile) and intention to leave, Ramanathan (1992) found that at the time of the initial contact with the EAP, employees with lower stress were more likely to wish to continue working for the organisation than those who were experiencing higher stress. This association became stronger two months after initial contact with EAP and stronger yet four months after initial contact. Accompanying this, there was a significant decrease in the length of time employees intended to stay in the organisation

Ramanathan found significant increases in self rated job functioning two months post EAP contact using a single item measure.

Selvik et. al., (2004) report highly significant improvements in productivity (reduced emotional impact and physical impact), however, it is unclear if this is self report or counsellor assessed. In this study counsellors were responsible for collecting impact data at the final session.

The final study to measure aspects of work attitude or performance also draws on counsellors' ratings of problems at entry to and exit from the EAP. In the Preece et. al. (2006) study work impairment due to the presenting problem was rated as None, Mild, Moderate, or Severe. Mild work impairment was defined as impairment evident to the worker, but unnoticed by the supervisor. Moderate work impairment was defined as impairment that had been noticed by the supervisor. Severe work impairment was defined as an inability to function on the job. The results of the analyses of work impairment outcomes revealed a significant main effect over time, demonstrating contact with the EAP was helpful in reducing work impairment.

They also compared results for EAP clients with a diagnosis of depression and those without. These results indicate that employees in the depressed group benefited more than the non-depressed employees in terms of improvement in work impairment. However, employees in the depressed group remained significantly more impaired than employees in the non-depressed group at closing.

3.4.7. Summary of findings on multi component EAPs

Finding 1: Evidence on the effectiveness of multi component EAPs

There is a lack of evidence about whether multi component EAPs are effective in reducing absence and improving well-being, work attitudes or performance compared to other forms of support or no intervention.

No evaluations of multi component EAPs were identified that compared EAP users with participants randomised to a control group (where they received no intervention or alternative intervention). At present no conclusions can be drawn about the extent to which any perceived improvements in EAP user groups can be attributed to the EAP they attended or the extent to which these changes could have occurred in the absence of any intervention.

Evaluations of multi component EAPs comprised two distinct types of study: Evaluations and analyses of data on EAP users drawn from large data sets of EAP providers; and an individual study of a multi component EAP. Four studies fall in to the former category, two of which state that they used only client data where full records were available, a third has no missing data and therefore appears to report only on patients for whom a full data set was available. The sampling method in these studies is selective and therefore findings cannot be considered representative of EAP users in general, and specifically the users of these EAPs for whom there are not full records. Findings cannot be generalised beyond the groups studied.

Finding 2: Changes in EAP user absence following EAP contact

Three studies measured changes in absence following contact with the EAP. All three report significant drops in absence from pre to post EAP contact (two cohort studies, one selected sample). One study compared those with a diagnosis of depression to those without. Whilst the intervention was helpful in reducing absence for both groups, there was a greater degree of improvement for the depressed clients.

Finding 3: Changes in EAP user well-being following EAP contact

Two studies using the APA GAF (one cohort study, one selected sample) found significant improvements in GAF scores from pre to post counselling, however it is not clear if the changes were clinically significant. One study compared GAF scores for clients with a diagnosis of depression against those with no diagnosis and found scores for clients with depression remained significantly poorer.

Finding 4: Changes in work attitude and performance results

Three studies found significant improvements in a variety of measures of work attitudes and performance from pre to post counselling (two cohort studies, one selected sample). One study compared results for depressed compared to non-depressed clients and found that whilst depressed clients reported more benefit from the intervention, they still remained significantly more impaired than non depressed clients.

Overall the selective sampling and lack of detailed analysis in the majority of studies in this section of the review mean that it is impossible to draw meaningful conclusions about the impact of multi component EAPs on the outcomes of interest.

Table 3.6 Effectiveness Studies – Main outcomes for multi-component EAPs

Key: ☺ significant positive difference in favour of EAP; 😐 no significant difference; ☹ significant negative difference
All analyses between intervention and comparison groups or pre and post intervention for EAP groups unless otherwise stated; Where p values were provided: *p<0.001 **p<0.05 †p<0.1

Multi-component EAPs (All uncontrolled)				
Study	**Well being**	**Work related measures**	**Absence / sickness: non-self-report**	**Other results**
Hargrave & Hiatt, (2004)	Pre and post intervention scores: *Marital; health; family; interpersonal; & well-being functioning ☺ * Health concerns, compulsive thoughts, high energy, depression, anxiety, hostility, fears, paranoia, substance abuse, unusual thoughts ☺ Decrease of 48% in numbers of employees reporting moderate to severe depressive symptoms ☺ Decreases in anxiety and hostility and increases in feelings of happiness and well-being ☺	Pre and post intervention scores: *Job functioning ☺		Calculation of cost benefit
Chan et al., (2004)	Counsellor rating of problem resolution by the EAP=66.9%			Referred to outside services (non-resolution of problems by EAP)=33%. Those with addiction behaviours far more likely to be referred on.
Preece et al., (2006)	Pre and post intervention scores: *Global Assessment of Functioning Scale (GAF) for both depressed and non-depressed EAP groups ☺ *GAF (Depressed vs non-depressed at intake)☹ *GAF (Depressed vs non-depressed at follow up)☹	Pre and post intervention scores: *Work impairment (whole sample) ☺ *Work impairment (depressed vs non-depressed at intake)☹ *Work impairment (depressed vs non-depressed at follow up)☹	Pre and post intervention levels: Absence (whole sample) ☺ **Absence (Depressed vs non-depressed at intake) ☹ **Absence (Depressed vs non-depressed at follow up) ☹	
Ramanathan, (1992)		Pre and post intervention levels: Intention to stay ☹	Pre and post intervention levels: *Absenteeism ☺	Significant relationship between total stress and absenteeism, regardless of EAP.
Selvik et al., (2004)	Pre and post intervention scores: Emotional impact , Social relationships and Global Assessment of Functioning Scale (GAF) scores ☺	Pre and post intervention scores: *Productivity ☺	Significant reduction in self reported absence & tardiness	

4. Cost-effectiveness of EAPs

Of the nine studies identified for potential inclusion within the review of economic evaluations of EAPs, three were excluded at the abstract stage. The remaining six were read in full and four more were excluded at this stage; this left two papers for the review. The main reason for the exclusion of papers at the latter stage was that while they presented data on the benefits of the programmes in terms of a reduction in health care costs or work days lost they did not include the costs of the programme in these analyses and were therefore not cost-effectiveness analyses. One cost effectiveness study collected data only at the post treatment stage and was excluded on the grounds that it did not meet the longitudinal design criteria for inclusion in the review. The remaining paper (Hargrave & Hiatt, 2004) conducted a cost-benefit analysis.

Hargrave & Hiatt (2004) combined data from their own before and after study on the number of employees accessing an EAP, citing depression as a moderate or greater problem with data from Stewart et al. (2003) in order to calculate the cost-benefit of an EAP for depression. The main outcome of interest was 'lost productive time' (LTP) and the authors estimated that a depressed employee lost 5.6 hours per week and a non-depressed employee lost 1.5 hours per week based on figures from Stewart et al. (2003) . The effect of the EAP was that the number of employees citing depression as a moderate or greater problem decreased by 48% after participation in the EAP (See Section 3 for more details). Using data from Stewart et al. (2003) for the average salary ($20 per hour), length of depression (26 weeks), cost of the programme ($2.00 per employee per month based on a typical employee population of 2,500) and utilisation rate (5%), and data from their own study (which estimated that 66% of those that utilised the EAP did so because of depression), the authors estimated the cost of the LPT due to depression to be $176,956 prior to the EAP. Based on the reduction in those citing depression in their study of 48%, the authors estimated the post-EAP cost of LTP due to depression to be $92,017. From this they calculated the return on investment (ROI) based on:

ROI (%) = Net Programme Benefits / Programme Costs X 100

The net programme benefit was the difference between the cost of LTP pre and post EAP. The programme costs were ($2.00 x 2,500) x 12. This gave a ROI of 142%.

The single study identified by the review suggest that the EAP assessed is cost saving; however there are a number of issues with the analysis. The study is an uncontrolled before and after study which means that all changes in LPT and lost work days is attributed to the EAP. Hargrave and Hiatt (2004) used data on average LPT from a separate study which categorised employees as either depressed or non-depressed. Their study however measured the reduction in employees citing depression as a moderate or greater problem, which does not tell us whether this reduction led to employees becoming non-depressed or if the depression became less than a moderate problem. No data was given on the long-term effects of the EAP, for example, how long the increase in productivity lasted. There is also an issue with the appropriateness of the data used in the analysis, especially concerning the cost of the programme data. No data was collected on the cost of the programme; they relied instead on costs from one other study which may not accurately reflect the costs of the programme they were studying. This was also the case for the utilisation rate and a different utilisation rate may change the overall costs of the programme. And finally no uncertainty analysis was conducted in the paper to test how robust the results were to changes in the parameters.

4.1. The potential of mathematical modelling for assessing the cost-effectiveness of EAPs

Mathematical modelling can be used when resource allocation decisions are required. It could be used to assess the cost-effectiveness of EAPs and also to compare the cost-effectiveness of different EAPs to help decide where money is likely to be most effectively invested over the long term. Models provide a framework within which to synthesis all relevant evidence in an explicit way so that assumptions can be questioned and explored. They also allow evidence to be extrapolated beyond trial follow up so that all differences in costs and outcomes between the intervention and comparator(s) can be estimated. Different scenarios, in terms of the costs and effectiveness of the programme can be tested and the impact of changes in the assumptions and parameters can be assessed via sensitivity analysis in order to test the robustness of the results.

The type of data needed to construct a cost-effectiveness model would depend on the scope of the model. Firstly, it would depend on what model perspective is chosen, in terms of whether the interest lies in the cost and benefits to the employer, the NHS, or wider society. This would influence the outcome used to measure benefit as well as what costs are taken into account. Secondly, as EAPs cover a wide range of interventions for numerous conditions the scope of the model would depend on whether it focused on one intervention or condition or multiple interventions and conditions. For each intervention or condition included in the model, data would be needed on the effectiveness of the intervention on each condition and background of that condition.

To illustrate the type of data needed, an example of a simple model is given. This model is concerned with the cost-effectiveness of EAPs in treating a single condition from an employer perspective where the outcome of interest is work days lost. The condition would most likely be modelled in terms of different states with each state associated with a different number of work days absent. For example, the condition may be divided into mild, moderate or severe states. It would be important to have data on the condition such as length of an episode and relapse rates. There would need to be data on the effectiveness of the EAP in terms of the number of days absent for those with the condition who participate in the EAP compared to those who do not. There would also need to be some data around the long-term effects of participation in an EAP (for example, does the number of days absent stay at the level found immediately after the EAP or does the number of days absent increase after some time?), and whether the EAP affects the likelihood of a relapse. The different states in the model would be associated with a different number of days absent; therefore there would need to be data on the number of days absent associated with the different health states. There would also need to be a cost associated with each of the different states in the model. For this, there would need to be estimates of the cost to the employer of a lost days work. This is likely to depend on average wage levels of different employers and the length of absence and sick pay practice and whether a replacement worker would need to be hired. In addition there would need to be data on the costs of the EAP and the utilisation rates of the EAP for different conditions.

The example above is based on the data needed for a simple one-condition model. The scope could be much broader, including employees with a range of conditions, however, this would be more complex in terms of the modelling and the data needed to populate the model. In addition, if a NHS or societal perspective was required, quality of life estimates would be required for each of the health states within the model, preferably using the EQ-5D questionnaire.

5. Conclusions and discussion

This review is concerned with assessing evidence specific to the effectiveness and cost effectiveness of EAPs. In line with previous systematic reviews in related areas (McLeod, 2010 – workplace counselling; Seymour and Grove, 2005 – workplace interventions for mental health) evidence on the effectiveness of EAPs is generally weak, with only a few studies employing the most rigorous research designs.

5.1. Effectiveness of EAPs

Overall, no studies were identified that compared EAP outcomes with outcomes for those randomly allocated to non-intervention control groups. This represents a significant gap in the evidence base and currently the evidence does not exist to support the hypothesis that EAPs are more effective compared to no intervention, in improving employee well-being or job-related outcomes.

The review identified three clusters of intervention evaluations: 1:1 counselling EAPs; specific programme elements within EAPs; and multi component EAPs. Of the three intervention clusters, the research on 1:1 counselling EAPs forms the most coherent group of studies.

5.2. 1:1 counselling EAPs

The studies of 1:1 counselling EAPs are broadly similar in that they measure a range of mental health, psychological well-being and/or work related outcomes, in the main using well-established scales. Seven of the eight studies in this cluster collect absence data from company records (as opposed to self-report) and five have some form of comparison group for at least part of the data (normally non equivalent comparisons groups made up of employees from the same company who have not used the EAP). Five of the eight studies (covering 14 organisations' EAPs) are set in the UK.

The impact of 1:1 counselling EAPs on psychological well-being and absence

In general, the studies in this cluster find positive effects for pre to post intervention changes in measures of psychological well-being and absence in EAP user groups. However, the limited nature of the comparison groups makes it impossible to identify the extent to which these improvements are due to the EAP or could have occurred without intervention. Additionally, these generally positive changes need to be viewed in relation to the data presented on comparison groups. On balance the evidence indicates that despite significant improvements in psychological well-being and absence, EAP users continued to have poorer well-being and higher absence than non-EAP user comparisons.

The impact of 1:1 counselling EAPs on work attitudes and performance

Evaluations of 1:1 counselling EAPs consistently found no changes in work attitudes such as job satisfaction or organisational commitment on pre to post intervention measures. This finding accords with that of McLeod (2010) who's review in a related area found no evidence of changes in work attitudes in six out of nine studies of work place counselling. The weight of evidence currently supports the conclusion that EAPs do not have an impact on work attitudes such as job satisfaction or organisational commitment.

There is limited evidence (from one study) of significant improvements in job performance from pre to post EAP intervention, as measured by self report, client report and supervisor assessment. This study also found no change in levels of job satisfaction, suggesting that performance and attitudes may be differentially affected by EAPs. However, the population in this study consisted of only two per cent self-referrals to the programme, the majority attending following informal or formal discussions with their supervisors.

Variations in findings for 1:1 counselling EAPs at the organisational/provider level

One study in this cluster (Highly-Marchington and Cooper, 1998) is an evaluation of EAPs (from different providers) in nine UK organisations, conducted on behalf of the UK Health and Safety Executive (HSE). It is of particular interest for this review as it avoids some of the positive bias inherent in much evidence published in peer reviewed journals, and potentially in evaluations of individual EAPs, because findings are presented consistently across outcomes for the nine organisations included the evaluation.

As with the other evaluations of 1:1 counselling EAPs, this study found overall (whole sample) positive changes in pre to post EAP measures of psychological well-being and absence and no impact on work related measures such as job satisfaction and organisational commitment.

Limited analysis of the data by organisation was also presented. This revealed that in four out of eight organisations there was no change in the psychological well-being of EAP user groups from pre to post counselling. Likewise, when absence was considered, changes in absence levels from pre to post EAP contact for the group overall (four organisations for whom data was available) were positive. However, findings for the individual organisations show that in two cases there was a highly significant drop in absence, in one a significant drop and in the fourth organisation, no change in absence levels from pre to post EAP contact.

These data were collected by the same research team, using the same methodology and measures, over a two year period. Consequently the variations identified in EAP impact are unlikely to be the result of differences in research approach. Whether these findings reflect organisational, provider or individual factors it is impossible to say. The likelihood is that all three, as well as other contextual factors, influence the implementation and operation of EAPs and consequently any potential outcomes. These variations do however raise important questions about:

1. the settings, populations and conditions in which 1:1 counselling EAPs are more or less effective, and
2. the different counselling approaches and levels of service offered within the EAPs themselves.

5.3. Evaluations of EAP programme elements

The cluster of studies evaluating EAP programme elements includes three studies of a more rigorous methodological design. These three studies all deal with alcohol or substance misuse and the evaluations provide relatively detailed intervention descriptions. The outcomes measured differ between studies and tend to be symptom/problem specific. The studies all compare substance/alcohol misuse programmes with usual EAP treatment or an alternative intervention. The evidence from these studies is mixed and their heterogeneity and lack of replication mean that they provide only limited evidence about the effectiveness of the EAP elements evaluated:

- One study found significant improvements on a number of outcomes for three different alcohol treatment conditions
- One study found no impact of enhanced follow up over treatment as usual for substance misuse clients
- One study found no difference between intervention and control groups following the introduction of a substance misuse programme.

Two other studies in this cluster report uniformly positive findings across a range of work related and/or absence measures, for an anger management programme and an enhanced job referral procedure. However the selective nature of the sampling in these two studies (subsamples of clients from multiple organisations for whom there are full data sets) means the findings cannot be generalised beyond the sample studied.

5.4. Evidence on the effectiveness of multi-component EAPs

The cluster of studies evaluating multi-component EAPs can be characterised as comprising large sample sizes but relatively weak research designs. With one exception, the studies in this cluster draw on data held by EAP providers covering employees from indeterminate numbers of organisations. There is little or no description of the interventions being evaluated and none of the studies in this cluster have data on control or comparison groups. Sample sizes are large, ranging from around 1000 to nearly 60,000 EAP users, but sampling is restricted to EAP users for whom there are full data sets in at least three of the studies, meaning that anyone not completing treatment for any reason is excluded from the evaluation. Follow up times ranged from measures taken at the last session (two studies) to two months (one study). A further limitation is that, despite very large sample sizes, relatively simple analyses were undertaken and no consideration was given to sub groups within the data (for example variations by employer, organisation or problem type). Overall, the design of these three studies means that only very limited conclusions can be drawn about effects, relating only to the groups on whom data is presented.

Variations in outcomes for multi component EAPs

The fourth large study in this cluster (Preece et. al., 2006) does explore variations in outcomes for different EAP users. Overall the study found improved attendance and increased psychological well-being for a sample of 1,411 EAP users from across a number of organisations. They then went on to compare absence and performance outcomes for depressed and non-depressed EAP users and found that although overall scores for both groups of EAP users improved, EAP users with a diagnosis of depression had poorer absence and work impairment levels than non-depressed EAP users at intake and these differences remained apparent at closure of contact with the EAP. As with the findings from the Highley-Marchington & Cooper (1998) study discussed above, the findings from the Preece study demonstrates variation in outcomes for EAP users and raises important questions about the effectiveness of EAP interventions for employees with different types of problems or symptom levels.

5.5. Limitations of the evidence

As with previous systematic reviews in similar areas (Seymour & Grove, 2005; McLeod, 2010) the evidence presented in this review has a number of methodological limitations. Only a few of the studies use the most rigorous research designs with random allocation of subjects to different intervention conditions. Those that do, evaluate specific elements of EAPs focused on alcohol and substance misuse and as such are limited in the extent to which their findings can inform assessments of the effectiveness of mainstream EAPs. Evaluations of 1:1 counselling and multi-component EAPs employ weaker designs which make it harder to draw robust conclusions or generalise findings.

Key issues in the design of EAP evaluations are:

- Lack of theorised or proposed links between problem, intervention and outcome
- the use of non-equivalent comparison groups
- limited description of the intervention being evaluated
- restricted or selective sampling strategies
- single item outcome measures

In addition to quality, quantity of evidence is an issue. The focus of this review on employee assistance programmes identified only a small number of relevant studies, limiting the confidence with which conclusions can be drawn.

Finally, in order to synthesise findings it is necessary to group the evaluation studies. We have done this on the basis of the intervention characteristics. A number of EAP definitions exist and different programmes vary in their constituent parts (although the defining feature is normally 1:1 counselling). We have therefore chosen to differentiate between EAPs that are clearly described within papers as 1:1 counselling and those multi-component EAPs with little or no description of the intervention being evaluated. It may be that the multi-component EAP evaluations are in fact all evaluations of 1:1 counselling, but the lack of information contained in studies has lead us to treat them separately.

5.6. Conclusions

Overall this review points to a lack of robust evidence about the impact of EAPs in general, and what evidence there is suggests clearly that their effect is not necessarily consistent across different settings or for different groups of employees.

The evidence for 1:1 counselling EAPs suggests that they may help improve psychological well-being and attendance for some people who use them, but their impact is uneven. There is insufficient evidence to draw conclusions about the effectiveness of the other EAP interventions identified in the review.

This review is more cautious in its findings than the recent McLeod review (2010) which concludes that workplace counselling is generally effective in improving well-being and attendance. This difference is in part explained by the different foci of the reviews. The current review is concerned with the effectiveness of EAP services. The McLeod review examined the evidence in relation to workplace counselling which was defined as any intervention where the provision of counselling is linked to being an employee, or has an impact on work-related psychological problems (including counselling accessed independently by the employee). There is a degree of overlap in the papers included in both reviews, but the McLeod review includes evaluations of counselling interventions set up by research teams for the purposes of evaluation, which are excluded from this review. Often these studies are designed to test a specific type of counselling intervention on a specific set of symptoms or diagnosis. Although often of more robust design, such studies are not evaluations of EAP practice. For this reason it is debatable the extent to which their findings can be generalised to EAP settings where providers deal with a wide range of problems and symptom levels.

The variations in EAP outcomes at the individual and organisational/provider level identified in this review reinforce the conclusion that EAP performance varies across settings and types of employee problem. Employers cannot assume that benefits accrue from having an EAP in place.

There are considerable gaps in the evidence base, primarily in relation to the question of EAP effectiveness over no intervention. That fundamental question aside, there is then also a need for more practice based evidence to improve understanding of how different settings, problems and approaches affect outcomes.

There are of course other reasons why organisations choose to have EAPs that fall outside the scope of this research. For example providers of EAPs cite organisational benefits such as positioning the organisation as a caring employer or demonstrating a caring attitude towards employees (EAPA website). There is substantial evidence that workplace counselling clients are satisfied with the service they are offered (McLeod, 2010). These types of outcome have not been considered in this review, but may be significant factors in an employer's decision to provide an EAP. This review highlights the gaps in the evidence that need to be addressed by future research in order to enable employers to direct their resources to finding and implementing interventions with demonstrable value.

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APPENDIX ONE - Methodology

Research approach

A number of frameworks for conducting systematic reviews exist which broadly cover the same principal stages. The strategy for this review was adapted from the NICE Public Health Guidance development process (NICE, 2009) and comprised the following stages:

1. Scoping exercise and consultation with the BOHRF Research Committee to define elements of the research question (population, intervention, comparisons and outcomes) and to establish inclusion and exclusion criteria
2. Production of protocol document specifying population, intervention, comparisons, outcomes, and inclusion and exclusion criteria
3. Identification of potentially relevant literature (literature search strategies and other potential data sources)
4. Study selection and quality assessment (including title and abstract sift and full paper screening).
5. Data extraction and synthesis of included studies

Defining the research questions

An early consultation was held with the BOHRF research board to clarify the precise nature of the question including:

- The population of interest
- The intervention(s) to be included
- Any comparators, and
- The specific outcomes of interest

The consultation exercise also established key inclusion and exclusion criteria for the review. A protocol was developed specifying the review to be undertaken (see Appendix 2). As a result of the consultation it was agreed that the review would be designed to address the following broad question:

> ***Are Employee Assistance Programmes (EAPs) effective and cost-effective at improving well-being and/or work outcomes for employees?***

To be categorised as an EAP, an intervention had to be open to all employees of an organisation with the specific aim of addressing personal, work or non-work-related problems. The outcomes of interest for the review included mental (including depression, anxiety and self-esteem) and physical well-being, work attitudes, job performance, absenteeism or work days lost.

In order to evaluate effectiveness, only longitudinal studies (both controlled and uncontrolled) were included. Cost effectiveness and cost-utility studies were also to be identified in order to determine the scope for cost-effectiveness modelling of EAP interventions.

A search strategy was constructed to identify studies that satisfied the above criteria. The full or truncated versions of the following key terms or their synonyms or acronyms were used in the search: employee assistance programme, or staff or workplace counselling, advice or welfare; and absenteeism, presenteeism, retention, turnover, return to work, productivity, well-being, coping, stress or rehabilitation. Both free text and, where available, relevant database thesaurus terms were used. The strategy was modified as appropriate for each database. The search of the Econlit economic database also used terms for cost-effectiveness, cost utility, cost benefit and return on investment. The search strategies for all of the databases are provided in Appendix 3. Seven databases were searched to identify relevant published and unpublished studies: Applied Social Sciences Index and Abstracts (ASSIA); the Cochrane Library (including the NHS Economic Evaluation Database); Econlit; Emerald Management Reviews; the International Bibliography of the Social Sciences (IBSS); PsycINFO; and the Social Science Citation Index (and conference abstracts).

In addition to databases a search of relevant websites was undertaken using the search terms employee assistance program, EAP and counselling.

These searches were supplemented by other methods to identify relevant citations: the references of all included studies were screened and the reference lists of relevant reviews were also consulted for additional citations.

Selection of studies

To be included in the review, primary research studies had to satisfy the following criteria:

- The study sample had to consist of employees (full or part-time) aged 16-65, who were experiencing substance misuse, stress or other personal work or non-work-related problems
- The intervention had to be open to all employees with the specific aim of addressing personal, work or non-work-related problems, such as stress, substance abuse, or family problems
- The intervention had to be a routine or regular service delivered by the employer (internal) or paid-for by the employer (i.e. delivered by an external EAP provider)
- The control could be either no EAP or an alternative intervention
- The study had to report data on the primary outcomes of mental or physical well-being, absenteeism or work days lost
- The study had to be a longitudinal (to allow conclusions to be drawn on causality between the intervention and outcome), preferably controlled but single cohort before-and-after studies were also included, or a cost-benefit, cost-utility or cost-effectiveness analysis of one or more controlled longitudinal studies.

Other limitations applied: English language publications only were accepted and publications from 1990 onwards only were considered, in order to improve external validity of the findings to the present day.

Studies were excluded if:

- They did not fulfil the above criteria
- The intervention was health promotion, i.e. a service or intervention aimed indiscriminately at all employees, rather than a service seeking to target or to be utilised by a group experiencing the specific problems of substance misuse, stress or other personal or non-work-related problems
- The intervention was a one-off service developed by researchers for the purpose of an evaluation
- The study was cross-sectional
- The sample was self-employed
- The sample was mixed (e.g. university or school staff and students)

All citations identified by the search of electronic databases were downloaded into a Reference Manager database and duplicates removed. Members of the project team all test-screened a sample of 100 titles and abstracts using the inclusion and exclusion criteria listed above, and a satisfactory inter-rater reliability score was achieved and recorded (*k* 0.76). The titles and abstracts of all of the citations retrieved were then divided equally between members of the project team and each screened their sample for relevance. 15% of samples were double sifted for quality assurance purposes and the inter-rater reliability score remained above the 0.7 threshold indicating an acceptable level of agreement. Where a reviewer was uncertain about the relevance of a paper the title and abstract were looked at by a second reviewer. In cases where a reviewer considered the paper to be relevant or could not tell (e.g. no abstract), the full paper was retrieved in order to make a definitive judgement. The inclusion criteria were applied by a single reviewer to the full paper of each potentially relevant citation and the decision on inclusion or exclusion verified by a second reviewer. Any queries or disagreements on full papers were resolved with reference to a third reviewer. The resulting included studies were then divided between the reviewers and extracted using an effectiveness data extraction form developed specifically for this review, and piloted on an included paper (see Appendix 4). All extractions were double-checked for accuracy by a second reviewer.

Quality assessment

This was undertaken independently by all three reviewers (CC, JR, MM) for the effectiveness studies they extracted using a form based on standard criteria for controlled and uncontrolled cohort studies (12 questions to help you make sense of a cohort study. Critical Appraisal Skills Programme (CASP) 2004). The principal aim was to assess the internal validity of the study based on the details of the participants and intervention, the comparability and validity of the intervention and control groups, if applicable, and the objective validity of the outcome measures. This assessment process was undertaken to afford a basic idea of the respective quality of studies. No quality assessment was performed on the cost-effectiveness study identified.

APPENDIX TWO – Study Protocol

DETAILED PROJECT DESCRIPTION:

PROJECT TITLE: Effectiveness and cost-effectiveness of Employee Assistance Programmes (EAPs)

1. To determine the effectiveness of EAPs for employees
2. To estimate the cost-effectiveness of EAPs for employees
3. To identify the critical areas of uncertainty in the cost-effectiveness of EAPs and determine the scope for exploratory modelling

EXISTING RESEARCH

As proposal

RESEARCH METHODS: SYSTEMATIC REVIEWING

Research questions:

To determine the effectiveness and the cost-effectiveness of EAPs for employees

Inclusion criteria

Population / Setting

- Working-age (16+ years) adults in employment, who may be experiencing substance misuse, stress or other work or non-work-related problems

Intervention

- Employee Assistance Programmes (EAPs), including staff counselling and advice, delivered by or paid-for by the employer

Comparator

- No comparator or a different type of programme

Outcomes

- Any well-being related outcome including RTW, rehabilitation, reduction in absenteeism, presenteeism, stress, turnover, substance misuse; improvement in well-being, coping; cost benefit; return on investment (ROI)

Study design

- Longitudinal comparative studies and cost-effectiveness, cost utility and cost-benefit analysis studies

Other inclusion criteria

- No language restrictions will be applied
- 1990 onwards

Exclusion criteria

- Studies will be excluded if they do not fulfil the above criteria and/or if they concern any of the following:
- **Intervention**: Interventions not paid-for or delivered by or in the workplace, e.g. by primary care
- **Study designs**: cross-sectional or single cohort studies

Search strategy

Scoping searches of PsycINFO have been undertaken to inform the planning of the search methodology.

A PsycINFO search has been developed using thesaurus and free-text terms for the population (employee, staff, workers, workplace), intervention (EAPs or counselling or advice), plus terms for the outcomes (RTW, absence, stress, turnover, costs), and limited to 1990 onwards. The PsycINFO scoping strategy and results are in **Section 5** of this protocol.

The final, agreed search strategy will be run across a wide range of relevant bibliographic databases: PsycINFO, Emerald Reviews, ASSIA (Applied Social Sciences Index to Abstracts), IBSS (International Bibliography of the Social Sciences) and Web of Science (Social Science Citation Index); as well as the specific economics databases Cochrane Library (NHS EED) and EconLit.

We will also search for other recently-completed and unpublished research or grey literature via the Social Science Citation Index Conference Abstracts database, and the HMIC/Kings Fund database. Websites and other report sites.

All searches will be performed by an information specialist (CC).

The reference lists of all included studies and relevant reviews will be checked, and contact with experts will also be undertaken, to identify any further potentially relevant studies not retrieved by the search of electronic databases.

Study selection

Records retrieved by the searches of the bibliographic databases will be imported into RefMan software, and duplicate citations will be deleted, by CC.

Citations (titles and abstracts) will be divided between reviewers (CC, JR, MM) and assessed against the inclusion and exclusion criteria after an acceptable kappa inter-rater reliability score (0.7+) of inclusion and exclusion of papers has been achieved between both reviewers on a test sample of 100 titles and abstracts.

The inclusion criteria described above will be applied to each relevant set of citations and citations will be coded as potentially relevant to either the effectiveness or cost-effectiveness review. In the event that it is unclear whether a paper is to be included in one of the reviews or not, a reviewer will seek a second opinion. If no consensus is reached, then the full paper will be retrieved for more in-depth assessment, and to enable a definitive conclusion on inclusion to be reached.

All decisions on inclusion will be recorded in the RefMan database.

Quality assessment strategy

No formal quality assessment process will be undertaken, however key aspects of study design will be considered

Data extraction strategy

For each paper, data will be extracted by a single reviewer using a form designed specifically for the review in question, and piloted on two studies, and the extraction will be thoroughly checked by a second reviewer. Any queries will be resolved by discussion or reference to a third member of the team.

Proposed data synthesis

Given the likely heterogeneity of included studies (different types of intervention, different outcomes, different study design), the likely form of synthesis will be narrative in both reviews, with studies grouped by outcome and/or intervention-type.

Reporting

PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) reporting standards will be used to report both the effectiveness and cost-effectiveness reviews. [1]

Results of test searches

Search	**Hits**
Intervention (EAPs only)	2218
Population (staff, employee etc.) and Intervention (EAP, counselling **inc. therapy** as a term) **limited to 1990**	12,562
Population (staff, employee etc.) and Intervention (EAP, counselling **exc. therapy** as a term) **limited to 1990**	5990
Population (staff, employee etc.) and Intervention (EAP, counselling **exc. therapy** as a term) limited to 1990 plus **outcomes**	1,358
Population (staff, employee etc.) and Intervention (EAP, counselling **exc. therapy** as a term) limited to 1990 plus **outcomes and effectiveness "filter"**	759
Population (staff, employee etc.) and Intervention (EAP, counselling **exc. therapy** as a term) limited to 1990 plus **outcomes and cost-effectiveness and ROI**	30

Suggested best search strategy

POPULATION/INTERVENTION

1 (employee assistan$ program$ or EAP$).tw. (1431)

2 exp employee assistance programs/ (1726)

3 1 or 2 (2218)

9 ((work$ or workplace or staff or employee$) adj3 (counsel$ or advice or welfare)).tw. (5841)

10 3 or 9 (7910)

11 limit 10 to yr="1990 -Current" (5990)

12 7 and 11 (1358)

COSTS OUTCOMES

13 exp "Costs and Cost Analysis"/ (12967)

14 (return on investment or ROI).tw. (717)

15 13 or 14 (13628)

16 12 and 15 (30)

EFFECTIVENESS "FILTER"

17 exp Evaluation/ (61911)

25 (effective$ or effic$ or intervention$ or evaluat$ or impact).tw. (659641)

26 17 or 25 (675819)

27 12 and 26 (759)

Full test search

Database: PsycINFO <1967 to June Week 5 2010>

Search Strategy:

POPULATION/INTERVENTION

1 (employee assistan$ program$ or EAP$).tw. (1431)

2 exp employee assistance programs/ (1726)

3 1 or 2 (2218)

4 ((work$ or workplace or staff or employee$) adj3 (counsel$ or advice or welfare or therap$)).tw. (14378)

5 3 or 4 (16430)

1990 ONWARDS

6 limit 5 to yr="1990 -Current" (12562)

OUTCOMES

7 (absen$ or presentee$ or retention or turnover or RTW or return to work or productivity or satisfaction or well?being or coping or stress or rehab$).tw. (296189)

8 6 and 7 (2391)

POPULATION/INTERVENTION (WITHOUT THERAPY)

9 ((work$ or workplace or staff or employee$) adj3 (counsel$ or advice or welfare)).tw. (5841)

10 3 or 9 (7910)

11 limit 10 to yr="1990 -Current" (5990)

12 7 and 11 (1358)

COSTS OUTCOMES

13 exp "Costs and Cost Analysis"/ (12967)

14 (return on investment or ROI).tw. (717)

15 13 or 14 (13628)

16 12 and 15 (30)

EFFECTIVENESS "FILTER"

17 exp Evaluation/ (61911)

18 12 and 17 (83)

19 (effective$ or effic$).tw. (273509)

20 12 and 19 (369)

21 (effective$ or effic$ or intervention$).tw. (385024)

22 (effective$ or effic$ or intervention$ or evaluat$).tw. (572752)

23 17 or 22 (589933)

24 12 and 23 (670)

25 (effective$ or effic$ or intervention$ or evaluat$ or impact).tw. (659641)

26 17 or 25 (675819)

27 12 and 26 (759)

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APPENDIX THREE - Searches

Search strategies:

PsycINFO:

1 (employee assistan$ program$ or EAP$).tw.

2 exp employee assistance programs/

3 ((work$ or workplace or staff or employee$) adj3 (counsel$ or advice or welfare)).tw.

4 or/1-3

5 (absen$ or presentee$ or retention or turnover or RTW or return to work or productivity or satisfaction or well?being or coping or stress or rehab$).tw.

6 4 and 5

7 exp "Costs and Cost Analysis"/

8 (return on investment or ROI).tw.

9 7 or 8

10 exp Evaluation/

11 (effective$ or effic$ or intervention$ or evaluat$ or impact).tw.

12 10 or 11

13 9 or 12

14 6 and 13 (779)

ASSIA:

Query: ((((employee assistan* program**) or EAP*) or ((work* counsel* or workplace counsel* or staff counsel* or employee* counsel*) or (work* advice or workplace advice or staff advice or employee* advice))) or(((work* therap* or workplace therap* or staff therap*) or (employee* therap*)) or ((work* welfare or workplace welfare or staff welfare) or (employee* welfare)))) and(absen* or presentee* or retention or turnover

or RTW or return to work or productivity or satisfaction or well?being or

coping or stress or rehab*)

Database: Econlit <1969 to August 2010>

Search Strategy:

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1 [exp employee assistance programs/] (0)

2 (employee assistan$ program$ or EAP$).tw. (40)

3 1 or 2 (40)

4 ((work$ or workplace or staff or employee$) adj3 (counsel$ or advice or welfare)).tw. (871)

5 3 or 4 (911)

6 (return on investment or ROI).tw. (246)

7 (cost$ adj3 (effect$ or analysis or benefit$)).tw. (11114)

8 6 or 7 (11339)

9 5 and 8 (27)

10 limit 9 to yr="1990 -Current" (26)

EMERALD REVIEWS:

EAP* or employee assist*

AND

impact or evaluat*

IBSS

Marked Records

Last Search Query: (employee assistan* program* or EAP*) and (impact or evaluat*)

SOCIAL SCIENCE CITATION INDEX

EAP* or employee assist*

AND

impact or evaluat*