UNIVERSITY OF BIRMINGHAM

The clinical and cost effectiveness of counseling interventions for heavy alcohol drinkers to reduce domestic violence

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West Midlands Health Technology Assessment Group

DPHE 2007, Report Number 60

The clinical and cost effectiveness of counselling interventions for heavy alcohol drinkers to reduce domestic violence

A WEST MIDLANDS HEALTH TECHNOLOGY ASSESSMENT COLLABORATION REPORT

Produced by: West Midlands Health Technology Assessment Collaboration
Department of Public Health and Epidemiology
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Date completed: August 2006

Expiry Date: August 2009

Report number: 60

ISBN No: 0704426129
9780704426122

WEST MIDLANDS HEALTH TECHNOLOGY ASSESSMENT COLLABORATION (WMHTAC)

The West Midlands Health Technology Assessment Collaboration (WMHTAC) produces rapid systematic reviews about the effectiveness of healthcare interventions and technologies, in response to requests from West Midlands Health Authorities or the Health Technology Assessment (HTA) programme. Reviews usually take 3-6 months and aim to give a timely and accurate analysis of the quality, strength and direction of the available evidence, generating an economic analysis (where possible, a cost utility analysis) of the intervention.

CONTRIBUTIONS OF AUTHORS

Sharlene Ting was the main reviewer. She was responsible for the day-to-day management of the report, undertook all searches for clinical and cost effectiveness assessment, designed the protocol, study inclusion, quality assessment and data extraction forms, undertook assessment of study eligibility, validity and collated data, and wrote most of the report.

Martin Connock advised on various aspects of the report, checked study eligibility and data extraction, edited the entire manuscript and wrote some parts of the report.

Catherine Meads advised on all aspects of the report, checked study eligibility, edited the entire manuscript and wrote some parts of the report.

CONFLICTS OF INTEREST

None.

ACKNOWLEDGEMENTS

Sue Bayliss (information specialist) for advice and assistance in developing the search strategy; Ann Massey and Louise Taylor for providing administrative assistance; Yaser Adi, Amanda Burls, Shihning Chou, Janine Dretzke, Anne Fry-

Smith, Chris Hyde, Zulian Liu, David Moore, Rod Taylor, Elaena Wells and Jayne Wilson for advice and assistance at various stages of the report.

The authors also thank the various organisations, experts and peer reviewers for their advice and time, particularly Kathy Cole-Evans, Louise Dixon, Sarah Galvani, Nick Heather, Eileen Kaner, Jim Orford, Jean McQueen and Glen Plant.

PUBLICATION INFORMATION:

This publication should be cited as: Ting S, Connock M, Meads C. The clinical and cost effectiveness of counselling interventions for heavy alcohol drinkers to reduce domestic violence. Report Number 60, August 2006. WMHTAC, Department of Public Health and Epidemiology, University of Birmingham, Birmingham: 2006.

West Midlands Regional Evaluation Panel

Recommendation

Borderline - promising

Anticipated Expiry Date:

August 2009

There is only one RCT that we know of that may possibly give relevant results in the near future

GLOSSARY, ABBREVIATIONS AND ACRONYMS

Abbreviation/ acronym	Definition
AARS	Alcohol Arrest Referral Scheme
ADS	Alcohol Dependence Scale
BI	Brief intervention, a time-limited, patient-centred counselling strategy focused on changing behaviour and/or increasing medication/treatment compliance
Child abuse	A generic term encompassing all circumstances of ill-treatment of children, including serious physical and sexual assaults as well as cases where the standard of care does not reach reasonable expectations; includes physical, sexual, psychological, emotional abuse and neglect
CJS	Criminal Justice System
Counselling	A systematic process which gives individuals an opportunity to explore, discover and clarify ways of living more resourcefully, with a greater sense of well being; may be concerned with addressing and resolving specific problems, making decisions, coping with crises, working through conflict, or improving relationships with others
DSM	Diagnostic and Statistical Manual of Mental Disorders
DV	Domestic violence, any incident of threatening behaviour, violence or abuse (psychological, physical, sexual, financial or emotional) between adults, aged 18 and over, who are or have been intimate partners or family members, regardless of gender and sexuality
Family abuse	Abuse, threats or physical force by a family member other than a partner
GP	General Practice
ICD	International Classification of Diseases
ICER	Incremental Cost Effectiveness Ratio
IDAP	Integrated Domestic Abuse Programme
Intimate partner violence	Actual or threatened physical or sexual violence, or emotional or psychological abuse (including coercive tactics) by a current or former spouse or dating partner
MAST	Michigan Alcohol Screening Test
NHS	National Health Service
RCT	Randomised controlled trial
RR	Relative risk
SAFE	Stopping Aggression in the Family Environment
SASH	Stopping Abuse in Sandwell Homes
SD	Standard deviation
UK	United Kingdom
USA	United States of America
WHO	World Health Organisation

EXECUTIVE SUMMARY

Background

Domestic violence (DV) is defined as any incident of threatening behaviour, violence or abuse between intimate partners or family members. It is associated with considerable morbidity and some mortality. In the West Midlands region, approximately 20,000 adults are subjected to approximately 59,000 DV incidents annually. In 2004, the annual costs to the West Midlands National Health Service (NHS), Criminal Justice System (CJS) and Social Services were estimated to be £141 million, £103 million and £23 million respectively. Instances of DV have been associated with alcohol consumption. Counselling interventions have been proposed as a way of reducing alcohol-related DV, re-victimisation by DV perpetrators and associated re-conviction for DV offences.

Aim

The aim of the report was to systematically review the evidence on the clinical effectiveness and cost effectiveness of counselling interventions for heavy alcohol drinkers to reduce DV.

Methods

Systematic review methods were used. Sixteen electronic databases were searched from inception to June 2006: Cochrane Library (CDSR, DARE, HTA, CENTRAL, NHS EED), Campbell Collaboration (C2-SPECTR, C2-PROT), MEDLINE, MEDLINE in Process, EMBASE, CINAHL, PsycINFO, ASSIA, EconLIT, ERIC, IBSS, SCI-Expanded, SSCI, ETOH, National Research Register and OHE HEED. No language or study design restrictions were used. Study identification, data extraction and quality assessment were done in duplicate and discrepancies resolved through discussion. Studies were included if the population were alcohol drinkers who perpetrated DV, any counselling therapy was investigated and any DV outcomes were assessed. A simple economic model was developed using results from the clinical effectiveness systematic review and other data sources including local cost data. Results were expressed in cost per DV case avoided from the NHS and CJS perspectives.

Results

Six ‘before and after’ studies of poor quality were included in the clinical effectiveness systematic review. The general trend of the results suggested that counselling interventions that reduced alcohol consumption also seemed to reduce DV incidence. There was a reduction in DV incidence after compared to before the interventions and also in remitted participants compared to those who had continued to abuse alcohol. We found no economic evaluations on this subject. Our economic evaluation found a cost to the NHS of £7,380 per DV case avoided and to the combined NHS and CJS £6095 per DV case avoided.

Conclusions

Counselling interventions for heavy alcohol drinkers may possibly be effective and cost-effective in reducing DV. The generalisability of this finding to the West Midlands region is relatively low because of the poor quality of the included studies and the fact that the clinical effectiveness studies were undertaken in the USA. In addition, we have very few details of the nature, content and duration of the counselling interventions. However, these promising results should be confirmed by a larger and better quality study.

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1. AIMS OF THE REVIEW

The aims of this review are:

- To systematically review the available evidence about the clinical effectiveness of counselling interventions in reducing domestic violence among individuals who are heavy alcohol drinkers and who perpetrate domestic violence.

- To investigate the cost effectiveness of these interventions from UK National Health Service (NHS) and Criminal Justice System (CJS) perspectives.

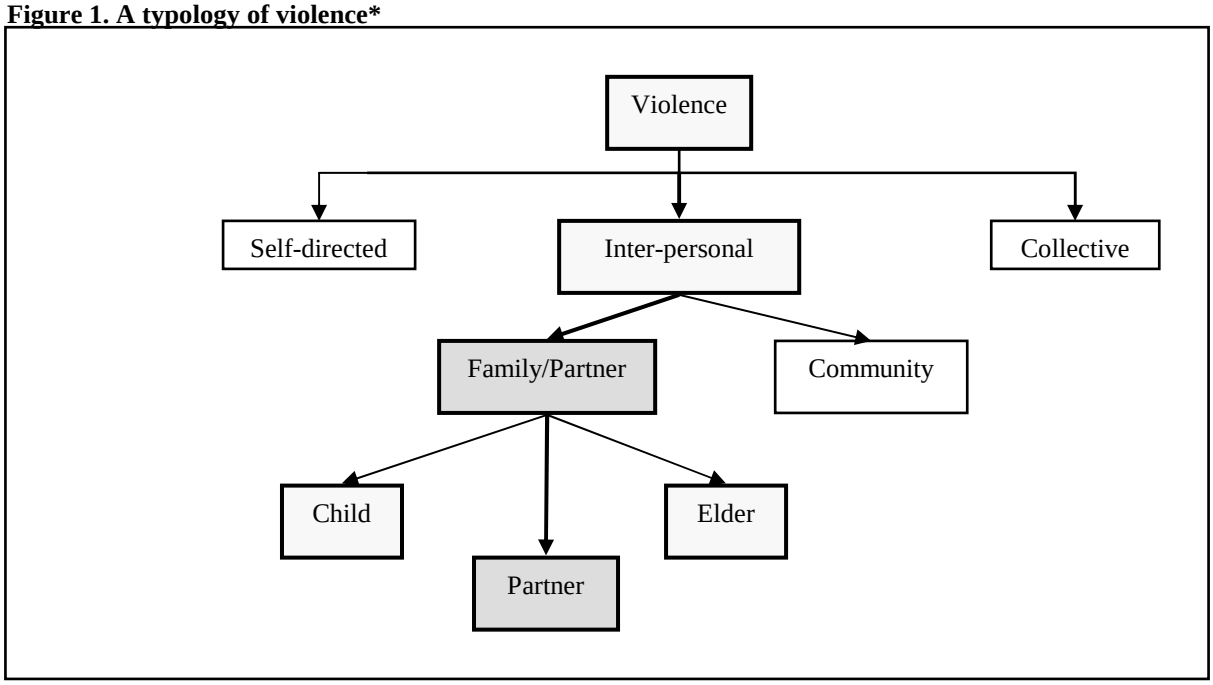
2. BACKGROUND

2.1 Description of underlying health problem

2.1.1 Definition and description of domestic violence

The term “domestic violence” includes a wide range of experiences and refers to a spectrum of relationships[1], not necessarily occurring only within the home environment.[2,3] Various authors have defined it narrowly to encompass violence between partners (commonly referred to as “intimate partner violence”[4-6]) or broadly to include abuse between any family members (i.e. child, sibling, parent, spouse, elder).[7] In addition to multiple definitions and interpretations of domestic violence within the literature[8], there exist many potentially related terms e.g. family abuse/violence, child abuse, vulnerable adult abuse, elder abuse and inter-personal violence.[9] “Child abuse” like “elder abuse” is a generic term, encompasses all circumstances of ill-treatment of children[9] and is usually considered separately from domestic violence. The inter-relationships of several of these terms as described by the World Health Organisation are illustrated in Figure 1 below.[9]

Figure 1. A typology of violence*



Adapted from Krug *et al* (2002)[9]

Some authors prefer the use of the term domestic "abuse" because domestic "violence" may be perceived as referring to physical abuse only.[3] Since "domestic violence" is most commonly used, this systematic review adheres to the term "domestic violence". The UK Association of Chief Police Officers defines domestic violence as:

> *"any incident of threatening behaviour, violence or abuse (psychological, physical, sexual, financial or emotional) between adults, aged 18 and over, who are or have been intimate partners or family members, regardless of gender and sexuality." (Family members are defined as mother, father, son, daughter, brother, sister and grandparents, whether directly related, in-laws or step-family[2])*

This definition will be used in this review, as it is not only restricted to 'intimate partner violence' but includes other family members.

Domestic violence events may be recorded by the police as crime (e.g. assault) or non-crime incidents (e.g. domestic dispute), which may or may not result in arrests and convictions. The UK Association of Chief Police Officers' definition of 'domestic violence' is restricted to adults. Finney (2006) defined 'family abuse' as

> *"... abuse, threats or physical force by a family member other than a partner"*.[7]

This definition applies to family members of all ages and is used in this review under the term 'family abuse'.

According to Blacklock (2001), domestic violence is

> *"one of the most pervasive of all social problems, affecting most of the population directly or indirectly".*[10]

Domestic violence is a complex, sensitive issue and a major concern to both public health and criminal justice sectors.[11,12] It occurs across society, regardless of age, race, ethnicity, social class, income, residential location or religion.[3] Domestic violence is characterised by a high rate of repeat victimisation[2,13,14] and is associated with considerable physical and psychological morbidity.[15,16] The detrimental effects

of domestic violence are not isolated to the individual victim* e.g. multiple health effects such as physical injuries or psychological and mental conditions[6], but impact upon other family members (e.g. child witnesses[3,15,16]), the community (e.g. absenteeism from work[16]) and society at large (e.g. economic costs[17]).

2.1.2 Examples of domestic violence

Table 1 below gives examples of behaviours classified as domestic violence. These acts may be perpetrated inside and outside of the 'domestic' environment.[2,3]

Table 1. Examples of behaviours classified as domestic violence*

Nature	Examples of behaviours
Physical	Shaking, smacking, punching, kicking, tying up, stabbing, suffocating, throwing things, using objects as weapons, starving, genital mutilation
Sexual	Forced sex, forced prostitution, ignoring religious prohibitions about sex, refusal to practise safe sex, sexual insults, preventing breastfeeding
Psychological	Intimidation, insulting, criticising, isolating person from friends and family, treating person as an inferior, threatening to harm children or take them away, denying the abuse, forced marriage
Financial (economic)	Not letting person work, undermining efforts to find work or study, refusing to give money, asking for an explanation of how every penny is spent, making person beg for money, gambling, not paying bills
Emotional	Swearing, undermining confidence, making person feel unattractive, calling person stupid or useless, eroding person's independence

*Adapted from Department of Health (2005)[3] and Gilchrist *et al* (2003)[18]

2.1.3 Risk factors of domestic violence

Predisposing factors in both victims and perpetrators believed to be associated with the increased likelihood of incidence of domestic violence events have been identified.[1,3,6,7,10,14,16,18-22] Some of these risk factors are listed in Table 2 below.

*Some authors prefer to refer to sufferers of domestic violence, as survivors. Throughout this report, the term "victim" is used for consistency.

Table 2. Risk factors of domestic violence for victims and perpetrators*

Explanation	Risk factors	Examples relevant to victims	Examples relevant to perpetrators
Intra-individual	Factors within the individual e.g. excessive drinking, personality disorders, biological or neuro-physiological disorders	Young[14] Female[14] Single[14] Having a disability or mental or physical ill health[7] Aggressive behaviour[20] Social isolation[21] Relationship dissatisfaction[6] Substance abuse[19]	Character traits: insecurity, low self esteem, low empathy, low impulse control, poor communication, poor social skills[19] Personality styles: aggressive and hostile, antisocial[19] Abuse of drugs and alcohol,[1] alcohol dependents[18]
Socio-cultural	Importance of social location: social class, education, income, employment status Social-structural and family processes: traditional gender roles in families	Poverty[16]	Gender role expectations and masculine ideologies[6] Sense of entitlement[10]
Social-psychological	Social learning: exposure to violence in the family one grows up in	Childhood physical or sexual abuse[20] Witnessing domestic violence in childhood[20]	Childhood sexual abuse[20] Family violence[20]
Occasion	Different situations in life	Pregnancy[21] Current or imminent separation or divorce[14] Child contact disputes[21]	Loss of job

*Adapted from Vincent and Jouriles (2000)[19] and Jasinski and Williams (1998)[23]

2.1.4 Impact of domestic violence

According to UK Home Office statistics, two women were killed every week by a current or former partner in 2001.[16] In 2003/04, approximately 40% of all female and 5% of male homicide victims were killed by their current or ex-partner.[24] Domestic violence victims may also kill their perpetrators.[2]

Table 3 below lists some of the physical, psychological and social consequences of domestic violence to the victim and other family members.

Table 3. Examples of consequences of domestic violence to victims and other family members*

	Physical	Psychological	Social
Victim	Chronic pain, fractures, brain damage, internal injuries, gynaecological problems, premature birth, suicide, death	Post-traumatic stress disorder, substance and alcohol abuse, depression, anxiety, eating disorders	Poor work performance, affect quality of child care, isolation, stigmatised
Family (child)	Burns, stab wounds, stuttering, sleep disturbance, enuresis, encopresis, pregnancy	Suicidal tendency, introversion, anger, aggressive behaviour, low self esteem	Truancy, running away from home, antisocial behaviour, involvement in street crime

*Adapted from Department of Health (2004)[25]

2.1.5 Epidemiology of domestic violence

This section summarises the incidence and prevalence of domestic violence within England and Wales, in particular the West Midlands region. Information has been obtained from reports of 'Crime in England and Wales' in 2005/06[14] and 'Domestic violence, sexual assault and stalking' in 2004/05[7] and through contact with various organisations.[26] Details of the methods of the 'Crime in England and Wales' report[14] are found in Appendix 1. Statistics on the incidence and prevalence of domestic violence may vary depending on the definition of domestic violence (e.g. includes psychological or sexual abuse, stalking) used by the various data sources[7,14], type of data gathered (e.g. crime vs. non-crime incidents[7,14]) and the methods by which the data are collected (e.g. face to face interviews vs. self-completed questionnaires[7,16]).

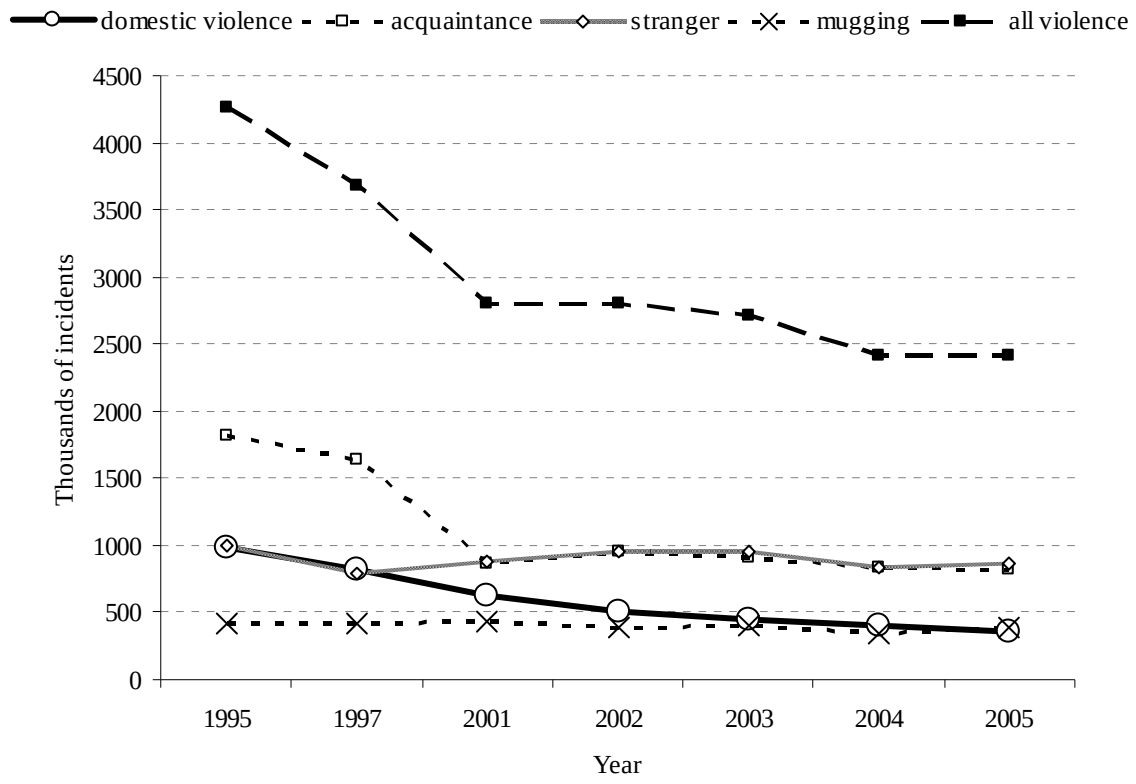
2.1.5.1 Incidence of domestic violence events

National incidence figures for domestic violence events indicate 357,000 events in 2005/06 in England and Wales, 80% were perpetrations on female victims.[14] The adult population (aged 18 and over) in England and Wales is approximately 40 million[26], giving an event rate of 1 event per 112 individuals. This data only refers to events classified as 'crime incidents'.[14] For the same time period, the domestic violence crime incident rate within the West Midlands is lower than the national average and is estimated at 1 event per 129 individuals (Personal communication Hornshaw T, West Midlands Police, Birmingham, 2006). Given the adult population in the West Midlands region is approximately 4.2 million[26], on a pro rata basis, this translates to an annual figure of about 33,000 domestic violence crime events. These incidence rates may be underestimates as they do not include non-crime domestic violence events.

In Birmingham and Staffordshire, the rate of domestic violence crime and non-crime incidents combined is estimated at 1 event per 72 individuals (personal communication Appleby H, Staffordshire Police, Staffordshire, 2006 and Harding P, Birmingham Inter-agency Domestic Violence Forum, Birmingham, 2006). Given the adult population within the West Midlands region is approximately 4.2 million[26], on a pro rata basis, the annual number of domestic violence crime and non-crime incidents is about 59,000 events. For the 40 million adults (aged 18 and over) in England and Wales[26], this translates to approximately 560,000 crime and non-crime domestic violence events annually.

Figure 2 below shows a 64% decline in domestic violence 'crime incidents' in England and Wales for the years 1995 to 2005 and places domestic violence in the context of other and total violent crimes.[14]

Figure 2. Incidence of violence in England and Wales 1995 to 2005;
Adapted from Walker et al (2006)[14]



2.1.5.2 Prevalence of domestic violence

Prevalence of victimisation in domestic violence in England and Wales for 2005/06 was 83 victims per 10,000 adults.[14] This figure ignores repeated events on the same victim. Details of the prevalence of domestic violence victimisation in England and Wales for 2005/06[14] for different sub-groups according to personal and household characteristics are found in Appendix 2. In the West Midlands region, prevalence of domestic violence victimisation for 2005/06 was 48 victims per 10,000 adults.[14] Given the adult population in the West Midlands region is approximately 4.2 million[26], this could result in approximately 20,000 domestic violence victims annually.

Following the initial domestic violence incident, research indicates trends of high rates of repeated events.[1,2,13,16] In 2005/06, domestic violence had the highest repeat victimisation of all violent crimes, with 43% of victims being victimised more than once and 23% being victimised three or more times.[14]

The domestic violence incidence and prevalence figures presented in the reports may represent under-estimates for four reasons:

1) They do not include sexual abuse. Table 4 below shows the prevalence of partner abuse and family abuse when sexual assault is considered for adults in England and Wales in 2004/05.[7]
2) Face-to-face interviews were used and higher domestic violence figures have been observed when alternative methods such as self-completed questionnaires were used.[7,16]
3) Police reported incidents were used. Previous research indicates only 41.8% of domestic violence incidents are reported to the police.[14]
4) They do not include ‘non-crime incidents’ e.g. domestic disputes.[7,14]

Table 4. Prevalence of domestic violence among adults in England and Wales in 2004/05*

		Prevalence of domestic violence (%)	
		Male	Female
	Overall sample size	*10,294*	*12,510*
Family abuse	non-sexual (abuse, threats or force)	4.1	5.6
	Any (sexual assault, stalking and non-sexual)	4.7	5.9
Partner abuse	non-sexual (abuse, threats or force)	2.0	3.1
	Any (sexual assault, stalking and non-sexual)	2.0	3.1

*Adapted from Finney (2006)[7]

2.1.6 Costs of domestic violence

In 2004, a major cost analysis of domestic violence for England and Wales was undertaken based on the 2001 British Crime Survey and estimated the total cost of domestic violence to be approximately £23 billion per year. Given the population of England and Wales in 2001 was approximately 52 million people[26], this translates to £440 per person per year. Table 5 summarises these cost estimates according to different perspectives. No relevant costs were found for Europe. A US based cost study conducted in 2003 estimated the cost of intimate partner violence against women to be more than US$5.8 billion (£2.8 billion) per year. Given the population of USA is estimated to be approximately 298 million in 2006, this translates to £9.5 per person per year. However, this disparity in costs may be attributed to the fact that the American cost study only considered medical and lost productivity costs.[27]

Table 5. Summary estimates of the cost of domestic violence in England and Wales for 2001*

Type of cost	Cost (£ billions)
Criminal Justice System (including Probation Services)	1.017
Of which police	(0.49)
Health care (National Health Service)	1.396
Of which physical	(1.22)
Of which mental health	(.176)
Social services	0.228
Emergency housing	0.158
Civil legal	0.312
All services	3.111
Economic output	2.672
Sub-total	*5.783*
Human	17.086
Total	***22.869***

*Adapted from Walby (2004)[17]

Given the population within the West Midlands region is approximately 5 million[26], this results in an annual estimate of £2.3 billion spent on the results of domestic violence. With reference to the National Health Service (NHS), Criminal Justice System (CJS) and Social Services costs, this translates to approximately £141 million, £103 million and £23 million respectively spent in the West Midlands region on domestic violence.

2.1.6.1 Breakdown of costs from the National Health Service perspective

Table 6 summarises the costs to the NHS per incident of various types of domestic violence. The most comparable crime category is given in parentheses.

Table 6. Costs per incident of different types of domestic violence incidents to the National Health Service in England and Wales*

Type of domestic violence (*comparable crime category*)	Cost (£) of				
	Hospital & ambulance	GP visits[a]	Prescrip-tion[a]	General mental health usage[b]	Total
Domestic homicide (*homicide*)	670	na	na	na	670
Severe domestic force – choked, strangled (*serious wounding*)	9,190	48	53	332	9,623
Severe domestic force – used a weapon (*serious wounding*)	9,190	48	53	332	9,623
Severe domestic force – kicked, bit, hit with a fist (*other wounding*)	680	48	53	332	1,113
Threat to kill (*other wounding*)	0	na	na	na	0
Threat with weapon (*other wounding*)	0	na	na	na	0
Stalking (*other wounding*)	0	na	na	na	0
Minor domestic violence – pushed, pinned, slapped (*common assault*)	0	na	na	332	332
Rape and assault by penetration (*sexual offence/serious wounding*)	680	48	53	na	781
Sexual assault (*sexual offence/other wounding*)	0	na	na	na	0

[a] – based on an average of 3 General Practice (GP) visits; [b] – based on 4 visits; na – costs were not estimated by *Walby (2004)[17]

2.1.6.2 Breakdown of costs from the Criminal Justice System perspective

A summary of the costs per domestic violence incident to the CJS is given in Table 7. Broad crime categories were used that correspond to the domestic violence incidents that are listed in Table 6. Only Probation Service costs are highlighted in Table 7 because Social Services costs were not given for the different crime categories.[17]

Table 7. Costs per incident of different types of domestic violence incidents to the Criminal Justice System in England and Wales*

Criminal Justice System activity	Costs (£) of				
	Homicide	Serious wounding	Other wounding	Common assault	Sexual offences
Probation Service	**260**	**260**	**20**	**5**	**60**
Prosecution	410	250	20	5	60
Magistrates court	100	60	6	1	7
Crown court	720	440	40	9	180
Jury service	90	60	5	1	20
Legal aid	1,100	650	60	10	200
Non-legal aid defence	250	150	10	4	50
Prison service	4,200	2,600	240	50	1,200
Other CJS costs	1,700	1,100	100	20	160
Criminal injuries compensation	2,000	1,200	110	125	1,937
Police activity	**107,299**	**2,357**	**389**	**90**	**1,900**
Total CJS costs	***118,129***	***9,127***	***1,000***	***320***	***5,774***

*Adapted from Walby (2004)[17]

2.1.7 The context of alcohol in domestic violence

This systematic review aims to review evidence on the effectiveness of interventions for alcohol drinkers in the reduction of domestic violence incidents. This is predicated on the assumption of a relationship between alcohol and domestic violence. In a 2005 survey of 251 domestic violence offenders, 46% reported that they were under the influence of alcohol during the violent incidents.[14] In the West Midlands, in 2005/06, one in 12 domestic violence crime incidents was recorded as alcohol related (personal communication, Hornshaw T, West Midlands Police, Birmingham, 2006). Given the number of domestic violence crime and non-crime incidents in the West Midlands region is approximately 59,000 events, on a pro rata basis, this translates to about 4,900 alcohol-related domestic violence (crime and non-crime) events annually. For England and Wales, this results in approximately 46,000 annual alcohol-related domestic violence crime and non-crime incidents. In comparison, in a 1995 survey conducted in the US, 30 to 40% of men and 27 to 34% of women who perpetrated intimate partner violence were reported to be drinking at the time of the event.[28]

Throughout the alcohol literature, there is a wide range of terms used to describe individuals who consume alcohol e.g. problem drinkers, heavy drinkers, binge drinkers, alcoholics, alcohol abusers, alcohol dependents. Clarification of these terms is given in Appendix 3, according to the diagnostic criteria developed by the World Health Organisation (International Classification of Disease, ICD-10[29]) and American Diagnostic and Statistical Manual of Mental Disorders (DSM-IV).[30]

2.1.7.1 Alcohol consumption in the UK and West Midlands region

In the 2004 UK General Household Survey, men were more likely to have drunk an alcohol beverage in the previous week (73% men vs. 58% women) and on more days of the week (23% men vs. 13% women had drunk alcohol on at least five of the preceding seven days and 14% men vs. 8% women had drunk alcohol everyday during the previous week).[31] Appendix 4 provides a breakdown of levels of alcohol consumption in the UK in 2004 according to personal and household characteristics.

The UK Department of Health has classified levels of alcohol consumption and provided guidance on sensible drinking limits (see Table 8).[32] Using this definition, 22% of men and 7% of women were found to be heavy drinkers in the West Midlands region.[31]

Table 8. Classification of levels of alcohol consumption*

Gender	Sensible drinking limits/ units† per day (*units per week*)	Heavy alcohol consumption/ units at least one day in the week
Male	3 or 4 (*28*)	8 or more
Female	2 or 3 (*21*)	6 or more

*Adapted from Department of Health (1995)[32]

2.1.8 Relationship between alcohol consumption and domestic violence

There remains considerable controversy regarding any causal relationship between alcohol consumption and domestic violence.[33] In a recent systematic review, Gil-Gonzales (2006) concluded that:

†One unit of alcohol is obtained from half a pint of normal strength beer, lager or cider, a single measure of spirits, one small glass of wine, or one small glass of port, sherry or other fortified wine.

> *"currently there is not enough empirical evidence to support preventive policies based on male alcohol consumption as a risk factor in the particular case of intimate partner violence".*[34] *This was because the "evidence about the relationship between alcohol consumption and intimate partner violence is of low quality in the study designs and may be biased by publication of positive results".*[34]

Galvani (2006) emphasised the lack of reliable statistics on the co-occurrence of alcohol and domestic violence, both for perpetrators and victims within the UK.[35] She highlighted one UK based study which showed that 73% of domestic violence offenders used alcohol prior to the offence, and 48% were considered to be 'alcohol dependent' (30% of the domestic violence offenders from this study [n=336] were derived from the West Midlands [n=101]).[18,35]

2.1.8.1 Theoretical suggestions linking alcohol and domestic violence

Contemporary theories range from physiological, psychosocial to bio-psychosocial explanations. Physiological theories suggest that alcohol engenders aggression by reducing behavioural inhibition through fear reduction, cognitive impairment, and increased arousal.[36,37] Several theoretical models have been proposed such as disinhibition effect, anxiolysis-disinhibition[38] and biochemical impact resulting from direct effects on the central nervous system.[39] There are wide individual differences in alcohol's effect on aggression which may be affected by a variety of factors, such as individual variables (e.g. trait hostility, cognitive functioning, personality characteristics, biological vulnerabilities) and situational/contextual factors (e.g. threat, provocation, setting, social context).[40] However, these studies exhibit several methodological limitations e.g. inadequate measures of alcohol use (such as poor measures of alcohol use patterns, quantity/frequency measures), a lack of information regarding specific violent incidents and failure to consider confounders (e.g. measure or analyze the impact of other drug use).[33,41]

There are numerous reasons for drinking alcohol cited in the literature. It has been suggested that alcohol can be a precursor to or a part of the act of abusing.[10] Experiencing feelings of hostility and anger causes the perpetrator to start drinking,

which becomes part of the build-up to an abusive act.[10] Alcohol both provides a readily available excuse for denying responsibility and acts as a disinhibitor.[10,33] Irrespective of the view adopted, any potential link between alcohol and crime is multi-faceted and inconclusive. For example, some studies have claimed to show positive correlation between higher alcohol dose levels to aggressive behaviour[42] while others have shown an increased likelihood of aggression as blood alcohol level decreases.[43] Despite the lack of consensus regarding any link between alcohol and aggression, domestic violence perpetrators with alcohol misuse problems have two problems and both should be considered.

2.2 Current service provision

This section describes programmes that are currently available and targeted at domestic violence perpetrators.

2.2.1 Alcohol and domestic violence interventions

In the West Midlands region, no obvious alcohol-related domestic violence perpetrator programmes were identified. Only one programme which deals with both alcohol and domestic violence issues was identified and this programme is based in London: the STAR project (personal communication, Panteloudakis I, RESPECT, London, 2006). It is a self-referral programme and has been currently operating for several years. There are two modes of delivery: one-to-one sessions and 12 weekly group sessions (personal communication, Robson M, STAR, London, 2006).

2.2.2 Domestic violence interventions

The only mandatory programme found was a 36-week Integrated Domestic Abuse Programme (IDAP) targeted at convicted domestic violence offenders and modelled on the 'Duluth Domestic Violence Programme' developed and used in the USA.[44] The UK programme was piloted in two areas (West Yorkshire and London) before 2001 and then left to local authorities to implement in their own area, following the pilot evaluation. In 2001, the National Probation Directorate and Home Office Research, Development and Statistics Directorate commissioned the evaluation of this programme. Details of IDAP are given in Appendix 5.

In 2000, the Home Office's Crime Reduction Programme launched the Violence Against Women Initiative with the aim of determining the approaches and practices effective in reducing domestic violence and supporting victims.[45] There is a voluntary national help-line for domestic violence perpetrators which was set up in 2003 by the UK government.[45]

There are few programs specifically targeted at domestic violence perpetrators. It is estimated that about 25-30 local domestic violence perpetrator programmes exist in the entire UK[46] (personal communication, Panteloudakis I, RESPECT, London, 2006). These are variable with respect to content, delivery and uptake (personal communication, Robson M, STAR, London, 2006).

2.2.2.1 In the West Midlands region

Mandatory programmes

IDAP has recently been implemented in North Staffordshire and two more programmes are planned for South Staffordshire by March 2007. Each programme will be dependent on having at least four eligible high-risk perpetrators and can accommodate up to eight domestic violence offenders at any one time (personal communication, Cole-Evans K, Domestic Violence Co-ordinator Cannock Chase District, Cannock, 2006).

Voluntary programmes

Within the West Midlands region, three voluntary programmes were identified: two are described below and one where details of the programme could not be obtained (personal communication, Cole-Evans K, Domestic Violence Co-ordinator Cannock Chase District, Cannock, 2006 and Rogers S, SAFE, Walsall, 2006).

<u>Stopping Aggression in the Family Environment (SAFE)</u>

This project commenced in 2002 in Walsall and is a community based 32-week domestic violence perpetrator programme which also uses the Duluth model. This is a voluntary, self referral service consisting of three facilitators working with groups of 10 perpetrators. This scheme is normally fully booked and has a waiting list, with self-referrals from the UK. High risk individuals (e.g. those with alcohol or substance

abuse problems or personality disorders) are not admitted onto the programme (personal communication, Rogers S, SAFE, Walsall, 2006).

Stopping Abuse in Sandwell Homes (SASH)

This is a newly set up preventative educational programme for male domestic violence perpetrators based in Sandwell and also modelled on the Duluth method. This is a voluntary, self referral service, run in a weekly group setting with 10-12 men attending at any one time, with sessions lasting approximately two to three hours.[47]

Current service costs

There is little available evidence regarding the costs of these programmes. An estimate for the SAFE programme was obtained, which reported annual running costs of approximately £10,000 to £12,000 per year (personal communication, Rogers S, SAFE, Walsall, 2006). These costs do not include the wages of the programme facilitators.

2.3 Description of counselling

Historically, interventions have been used to reduce harmful alcohol consumption by increasing the user's awareness of hazardous drinking levels and motivation to change.[48,49] There has been very little quantitative research on counselling therapies to reduce domestic violence. The account below of counselling therapy is a generic description rather than specifically towards domestic violence perpetrator counselling. Brief interventions are a form of counselling where clients receive up to four counselling sessions. Research in the area of brief interventions for alcohol consumption has been prolific since the 1980s[50] but has not included research to improve domestic violence outcomes so is not the main focus of this review. However, they have been used extensively in alcohol reduction so there is a more detailed description of brief interventions in Appendix 6.

2.3.1 Counselling therapy

Despite many attempts, there is no consensus on a single definition of counselling[‡]. The British Association for Counselling and Psychotherapy defines counselling as

> *"a systematic process which gives individuals an opportunity to explore, discover and clarify ways of living more resourcefully, with a greater sense of well being. Counselling may be concerned with addressing and resolving specific problems, making decisions, coping with crises, working through conflict, or improving relationships with others".*[51-53]

Counselling may range from simple listening-and-talking based methods, cognitive behavioural based approaches to psychodynamic, systemic, humanistic and interpersonal therapies.[51,52] These may be administered through face-to-face contact or via telephone or email by a trained practitioner or self-administered using self-help books.[51,52]

The common elements of models of counselling are the inclusion of basic assumptions of philosophy, formal psychological theory of human personality and development, principles and processes of change and related therapeutic operations, skills and techniques.[51,52]

A recent systematic review of counselling in primary care suggested that counselling may be useful in treating mild to moderate mental health problems up to six months; but no continued differences in outcomes were observed between counselling and usual general practice care (eight to 12 months).[53] There is little consensus on the optimal length of counselling treatment.

The UK Department of Health suggests that 16 or more sessions are required for symptomatic relief, and longer sessions may be necessary to achieve lasting change in social and personality functioning. They suggest that therapies of fewer than eight sessions are unlikely to be optimally effective for most moderate to severe mental

[‡]It is generally accepted that the terms "counselling" and "psychotherapy" are difficult to separate and are used interchangeably. This review uses the term "counselling" to refer to either.

health problems.[54] However, they recommend for time-limited counselling, a 1-6-3 approach is adopted (10 sessions in total): one session for assessment by the counsellor, six sessions to achieve agreed goals and three additional sessions if needed.[54]

2.4 Rationale for the review

Domestic violence is a huge economic burden on society with respect to direct (e.g. NHS usage) and indirect (e.g. absenteeism) costs[14] and is associated with considerable morbidity and some mortality. No previous systematic reviews have considered the impact of interventions specifically administered to heavy alcohol drinkers to reduce domestic violence.

3. CLINICAL EFFECTIVENESS REVIEW

3.1 Methods for reviewing effectiveness

A protocol was written prior to the start of this review and a scoping search was undertaken. This demonstrated that there was very little evidence on brief interventions for alcohol-related domestic violence (the original title for the systematic review) but did indicate some research on the effectiveness of counselling for alcohol drinkers who perpetrated domestic violence, so the systematic review was broadened to look at all counselling interventions.

3.1.1 Search strategy

The search strategy was developed in three phases (see Appendix 7). No language or study design restrictions were used. Full details of the search strategies are provided in Appendix 8. The electronic databases searched are listed below.

Electronic databases:

- Cochrane Library (Wiley) 2006 Issue 3 (CDSR, DARE, HTA, CENTRAL)
- MEDLINE (Ovid) 1966 to June Week 3 2006
- MEDLINE(R) In-Process (Ovid) as at 26 June 2006
- EMBASE (Ovid) 1980 to 2006 Week 25
- CINAHL (Ovid) 1982 to June Week 3 2006
- PsycINFO (Ovid) 1806 to June Week 3 2006
- Campbell Collaboration 2006 Issue 3 (C2-SPECTR, C2-PROT)
- ASSIA (Applied Social Sciences Index and Abstracts) 1987 – June 2006 (Cambridge Scientific Abstracts)
- ERIC (Cambridge Scientific Abstracts) 1966 – June 2006
- IBSS (International Bibliography of Social Science) (OVID) 1951 to June Week 03 2006
- SCI-Expanded (Science Citation Index Expanded) 1900 – 2006
- SSCI (Social Science Citation Index) 1956 – 2006
- ETOH (National Institute on Alcohol Abuse and Alcoholism) 1972 – 2003
- National Research Register 2006 Issue 2

Other sources searched included:

- Internet searches
- Citation lists of included studies
- Contacting experts and organisations
- Registers of trials that were searched for unpublished and ongoing trials

3.1.2 Inclusion and exclusion criteria

The inclusion criteria are described in Table 9. The population was defined as any alcohol drinkers who were perpetrators of domestic violence. This was to ensure that all studies not defining their population as heavy or excessive alcohol drinkers would be included. Provided that adequate information was given (e.g. levels of alcohol consumption), a sub-group analysis was planned for heavy alcohol drinkers. Although a proportion of domestic violence victims tend to be excessive alcohol drinkers, this review focused only on perpetrators of domestic violence who were heavy alcohol drinkers. The intervention criterion was 'any counselling therapy' with no restrictions on the number of sessions.

Table 9. Inclusion criteria for effectiveness studies

Domain	Inclusion criteria
Population	Alcohol drinkers who have perpetrated incidents of domestic violence
Intervention	Any counselling therapy targeted at the defined population
Comparator	Any
Outcome measures	
Primary	Rates of domestic violence using any measure e.g. number of domestic violence and repeat incidents, arrests and convictions, Conflict Tactics Scale
Secondary	Any measure of alcohol consumption e.g. number of units drunk per week; health care usage, e.g. hospital admissions
Study design	Randomised controlled trials, cohort studies, before and after studies, case-control studies with at least 20 controls

3.1.3 Study identification strategy

All identified citations (titles ± abstracts) were initially screened by one reviewer. Duplicates were removed and citations were grouped into "potentially include, obtain full text", "exclude" or "unclear obtain full text" categories. All citations in the "obtain full text" categories were checked by a second reviewer. Any disagreements regarding the full text retrieval of a citation were resolved through discussion. One reviewer processed all full texts retrieved according to the inclusion criteria using a *pro forma* designed for the purpose (Appendix 9). These were checked by a second reviewer and disagreements resolved through discussion. Where there were insufficient details to make a decision, the authors of the study were contacted.

3.1.4 Quality assessment strategy

Quality assessment of the included studies was implemented by one reviewer and checked by a second. Disagreements were resolved by discussion. A quality checklist modified from Khan (2001)[55] was used for non-randomised studies (Appendix 10). A modified Jadad scale[56] was to be used to assess any randomised controlled trials but no randomised controlled trials were identified.

3.1.5 Data extraction strategy

Data extraction was conducted by one reviewer and checked by a second. A standardised data extraction form was used which had been designed in advance and based on information expected to be reported in primary studies (Appendix 11). Disagreements were resolved by discussion. Where there was lack of reporting or ambiguity about study information, clarity was sought from the study authors.

3.1.6 Data analysis strategy

Study characteristics and results were tabulated and collated in summary tables. Results were interpreted in the light of methodological strengths and weaknesses identified in quality assessment. It was not considered appropriate to conduct a meta-analysis in view of the methodological weaknesses found in the included studies.

3.2 Results of clinical effectiveness

3.2.1 Quantity of research

Yield of studies from bibliographic electronic Databases

Seven[57-63] of the 2,135 citations retrieved from the 14 database sources were included. 1,748 citations were excluded on the basis of title/abstract only. Full texts of 37 citations were requested (British Lending Library), of which five were unobtainable (see Appendix 12 on page 78) and the remaining 25 were excluded. Appendix 13 gives details of study characteristics and reasons for exclusion of these 25 citations.

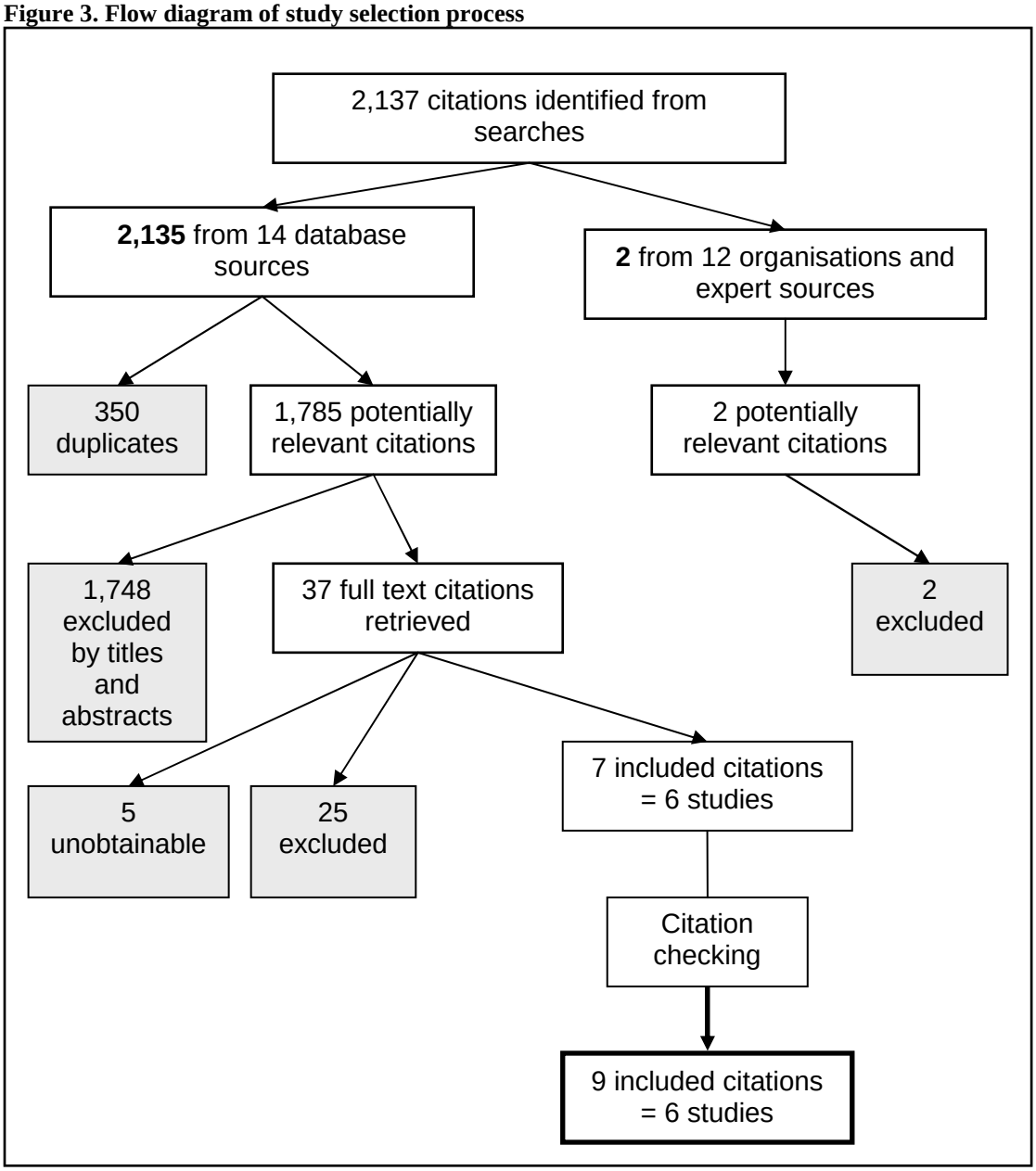
Citation checking of the seven included references provided two additional references.[64,65] In total, there were nine citations, representing six studies.[57-65]

Yield of studies from Contact with organisations and experts

Two potentially relevant studies were identified through contact with relevant organisations and six experts (Appendix 14). Both of these reports were based on the same intervention program and both were excluded from the systematic review (see Appendix 15). One report was based in the West Midlands and included participants who were arrested for an alcohol-related crime, but only 10% had committed domestic violence offences. This project has been described in Appendix 16 because of its relevance to the West Midlands and because some information from it has been used in the economic model (see Chapter 5).[66] The second report provided only qualitative interview data from which the responses from domestic violence perpetrators could not be separated from other responses and no domestic violence outcomes were provided. Contact with the author did not elicit further information.

Study selection is summarised in Figure 3. In total, six studies (nine full-text articles) were included. Of the six studies, one study was reported in three articles, one study was reported in two articles and the remaining four studies were represented by one article each. Four studies were from the same research group.

Figure 3. Flow diagram of study selection process



3.2.2 Included studies

The main characteristics of the six included studies are given in Appendix 17 on page 89.

Study design

None of the included studies were randomised controlled trials. There were three case control studies[60-62,64,65], but the control groups were not appropriate comparators for this review because they were non-alcoholic domestic violence

perpetrators, rather than alcoholic non-domestic violence perpetrators. Therefore, we used the before-and-after intervention results for the case groups for these three studies. Two of the other studies were retrospective surveys[58,59,63] and one used a before-and-after design.[57]

Location

All of the studies were conducted in the United States of America.

Sample source

Four studies used convenience samples for the intervention group[57-59,61,63-65], all were recruited from the treatment centres to which they were attached. The other two studies recruited participants through various sources. In one study, approximately half of the participants in the intervention group were referred by the legal system, 23% from the treatment system (detoxification or inpatient program), 17% were self-referrals and 11% from referral sources (e.g. physician, family, clergy).[60] In the other study, more than half of the participants in the intervention group were recruited from the treatment system (inpatient alcoholism treatment), 41% were self referrals and 7% were in response to advertisements, media announcements or other referral sources[62] (see Appendix 17).

Sample size

Sample sizes for individual intervention groups within the six studies varied between 80[58,59] and 303.[62] The total sample size of the intervention groups in all six studies was 1,122.

Characteristics of alcohol drinkers

Four of the included studies used scales and diagnostic tests (e.g. Michigan Alcohol Screening Test, Alcohol Dependence Scale, DSM-III-R or IV) to restrict inclusion of alcohol drinkers who were below cut-off points indicating alcohol abuse or dependence.[57,60-62,64,65] The remaining two studies described their population as alcoholics or alcohol users, with no attempt at classification.[58,59,63] Three studies reported number of years of problem drinking (mean ranged from 13.3 to 16.1[60-62,64,65]), one study reported on alcohol use days in the past month (mean 16.7[63]),

one study reported that 12% of participants were classified as alcohol abusers and 88% as dependents (n=170[57]), no details were given in the last study.[58,59]

We did not exclude studies which included participants with other or co-morbid substance abuse, providing that >50% of the participants were alcohol drinkers or details of co-morbid substance use were given and data could be disaggregated. Only one study included participants that were solely alcohol abusers or dependents.[61,64,65] Two studies reported participants with 7%[60] and 19.5%[62] co-morbid substance abuse. One study included 47.5% of participants with co-morbid substance abuse and 10.2% of participants with no alcohol abuse.[63] The remaining two studies did not provide any details on other or co-morbid substance use.[57-59]

We did not exclude studies which included participants with psychological or mental health disorders. Three studies excluded such individuals[60-62,64,65] and the remaining three studies did not provide any information on this factor.[57-59,63]

The mean ages reported in all the studies were between 26.8[57] and 43.5.[61,64,65] In five studies, all the participants who had alcohol or substance abuse problems were male.[57-62,64,65] The other study included approximately 1:1 ratio of male to female.[63] Most of the studies' population consisted of Caucasians (ranged from 56.8%[63] to 98.9%[61,64,65]) and African-Americans (ranged from 1.1%[61,64,65] to 35.2%[63]). Other ethnicities represented were Hispanics (ranged from 1.1%[63] to 10%[57]), Native American Indians (ranged from 0.3%[62] to 2.3%[63]) and Asians (0.6%).[63] Based on four studies[58-61,63-65], there were varying proportions of married participants (ranged from 32.4%[63] to 93%[60]). The remaining two studies only provided details on the number of years in a relationship (married or co-habiting);[57,62] one study explicitly stated including individuals who were married or co-habiting.[62] Education level of participants varied from 7th grade[§] to postgraduate education in five studies.[58-65] One study did not report on this characteristic.[57] The average household income ranged from US$32,000[60] to US$42,000[62] for four studies.[60-65] The other two studies did not report socioeconomic details.[57-59]

[§]US 7th grade is equivalent to UK Year 8 (12-13 years old).

None of the studies reported on prior treatments. Only one study reported on additional treatments sought outside of the intervention programmes.[58,59] One study reported on additional treatment sessions within the intervention programme provided to participants.[60]

Types of intervention, comparators and settings

Intervention programmes were all therapist/counsellor-led and conducted either in an inpatient or outpatient setting. Only one programme was delivered using a session by session treatment manual.[62] Programmes varied in duration (ranged from 3 days[63] to 9 months[61,64,65]) and intensity (ranged from 1 hour weekly sessions[62] to 9am-5pm 5 days a week[63]). Four programmes included combinations of group based therapy with couples based therapy (n=2)[61,62,64,65] and individual therapy sessions (n=2).[57,60] The remaining two studies did not provide details on this characteristic.[58,59,63]

All programmes were focused on reducing alcohol consumption and maintaining sobriety. Four studies provided details of the content of the programmes[57,60-62,64,65]; two were modelled on the 12-step facilitation programmes[57,60] where domestic violence was discussed only if mentioned by participants during the therapy sessions; participants engaging in domestic violence were referred to domestic violence treatment programmes. The other two programmes included Antabuse Contracts, methods for addressing violence and 12-step meetings for participants with drug problems.[61,62,64,65]

Programmes were targeted at promoting sobriety, training in communication and negotiation skills, encouraging participants to engage in self-help and instigating positive couple and family activities.

Delivery of interventions

Only two studies described the personnel involved in administering the interventions.[60,62] In one study, 11 state certified alcoholism counsellors were used, seven of whom were female.[60] Five of the 11 counsellors were recovering alcoholics

with high school diploma or General Educational Development[**], three with Bachelor's degrees and three with Master's degrees. The average counsellor's age was 33, with 6.9 years of experience of treating alcoholic patients. In the second study, 15 therapists (nine women) administered the intervention following a session-by-session treatment manual.[62] These therapists' training consisted of one-day workshop, followed by observing or doing co-therapy for at least one day with one of the researchers or a state certified social worker. The social worker was trained in the intervention for one year by the researcher, and had extensive experience treating couples and alcoholism. Therapists were weekly supervised for one hour by the researcher or social worker.

Outcomes

We were only interested in the prevalence and incidence of domestic violence events pre- and post-treatment. Four studies provided such data.[60-65] One study provided adequate raw data for the domestic violence prevalence and incidence figures to be calculated.[58,59] One study only reported actual mean values from the scale and could not be used.[57] Outcomes were assessed at various time-points: pre-treatment, post-treatment, 6 months, quarterly intervals for one year follow up and two year follow up post-treatment. Where possible, we reported pre- and post-treatment figures for all available time-points.

All six studies also used one domestic violence outcome measure called the Conflict Tactics Scale; one study used a modified version.[63] The Conflict Tactics Scale is located in Appendix 18. We have not reported this here as the actual mean values from this scale are not useful in indicating clinically significant outcomes.

The secondary outcome measure of difference between remitted and relapsed alcoholics was measured using a record of alcohol consumption which was either assessed using the TimeLine Follow-Back drinking interview (n=4).[57,60-62,64,65] or the University of Arkansas Substance Abuse Outcome Module.[63] The TimeLine Follow-Back drinking interview assessed the number of days on which the alcoholic patient

[**]General Educational Development certifies that an individual has attained American or Canadian high school-level academic skills.

drank alcohol and remained abstinent for the 12 months prior to entering treatment and at various time-points during the follow up period. The University of Arkansas Substance Abuse Outcome Module assessed the number of days of alcohol use, average consumption per drinking day, maximum consumption and number of binge days (> 5 drinks). This was assessed over the previous month. One study did not indicate how alcohol consumption was assessed.[58,59]

Funding sources of the included studies can be seen in Table 10.

Table 10. Funding sources of included studies

No.	Author (Year)	Funding source
1	*O'Farrell (1995,[64] 1999,[65] 2000)[61]*	Harry Frank Guggenheim Foundation, Department of Veterans Affairs, National Institute of Alcohol Abuse and Alcoholism, Smithers Foundation
2	*O'Farrell (2003)[60]*	National Institute of Alcohol Abuse and Alcoholism, Alpha Foundation, Department of Veterans Affairs
3	*O'Farrell (2004)[62]*	National Institute of Alcohol Abuse and Alcoholism, Department of Veterans Affairs
4	*Fals-Stewart (2005)[57]*	National Institute of Drug Abuse, National Institute of Alcohol Abuse and Alcoholism
5	*Maiden (1996,[59] 1997[58])*	not stated
6	*Walton (2002)[63]*	National Institute of Alcohol Abuse and Alcoholism, University of Michigan Substance Abuse Research Centre, University of Michigan Institute for Research on Women and Gender

Study Quality

Table 11 shows the quality assessment of the included studies. Generally the studies were well reported. For the majority of studies, it was unclear whether the participants were recruited at the same time. None of the studies used blind assessment. However, the main domestic violence outcome measure used was a questionnaire, the Conflict Tactics Scale, from which prevalence and incidence of domestic violence events were calculated in five of the six studies.[58-65] Some studies failed to report inclusion/exclusion criteria[57-59], and whether there were any losses to follow-up[57,63,64] and reasons for losses.[57-65]

Table 11. Quality assessment of included studies

No.	Author (Year)	Quality assessment questions for non-randomised studies:										
		Were eligibility criteria explicit?	*Was sample source / selection described?*	*Were patients assembled at same time?*	*Was a method of diagnosis stated?*	*Were clinical details described?*	*Was individual patient data reported?*	*Was outcome assessment blinded?*	*Was blinding method adequately described?*	*Was follow up time stated?*	*Were withdrawals stated?*	*Were reasons for withdrawals stated?*
1	*O'Farrell (1995)*[64]	Yes	Yes	No	N/A	Yes	No	No	N/A	Yes	No	No
	O'Farrell (1999)[65]	No	Yes	No	N/A	Yes	No	No	N/A	Yes	Yes	No
	O'Farrell (2000)[61]	Asked to refer to (1995)	Yes	No	N/A	Yes	No	No	N/A	Yes	Yes	Unclear
2	*O'Farrell (2003)*[60]	Yes	Yes	No	N/A	Yes	No	No	N/A	Yes	Yes	Unclear
3	*O'Farrell (2004)*[62]	Yes	Yes	No	N/A	Yes	No	No	N/A	Yes	Yes	Unclear
4	*Fals-Stewart (2005)*[57]	No	Yes	No	N/A	Yes	No	No	N/A	Yes	No	No
5	*Maiden (1996)*[59]	Unclear	Yes	Unclear	N/A	Unclear	No	No	N/A	Yes	Yes	No
	Maiden (1997)[58]	Unclear	Yes	Unclear	N/A	Yes	No	No	N/A	Yes	Yes	Unclear
6	*Walton (2002)*[63]	Yes	Yes	Yes	N/A	Yes	No	No	N/A	Yes	Unclear	No

N/A – not applicable

3.2.3 Numerical results

Pre- and post-treatment prevalence and frequency of domestic violence in intervention groups

The prevalence and mean frequency of overall and severe domestic violence and verbal aggression are presented for intervention groups, pre- and post-treatment in Table 12 to Table 17. These numbers were calculated if adequate information was available. One study did not provide adequate information for any data on these outcomes to be extracted. Unless otherwise stated in the tables, pre-treatment baseline period involved recall of domestic violence over the previous year. The lengths of post-treatment follow up periods and numbers followed up are given in the tables.

Prevalence of domestic violence

Table 12. Prevalence of overall domestic violence pre- and post-treatment for included studies

No.	Author (Year)	Length of post-treatment follow up	Prevalence of overall domestic violence	
			Pre-treatment % (n)	Post-treatment % (n)
1	*O'Farrell (1995,[64] 1999)[65]*	1 year post-treatment	47.8 (n=88)[&]	19.4 (n=88) [&]
		2 years post-treatment	43.4 (n=75) [&]	14.5 (n=75) [&]
2	*O'Farrell (2003)[60]*	1 year post-treatment	55.8 (n=301)	24.9 (n=269)
3	*O'Farrell (2004)[62]*	1 year post-treatment	60.4 (n=303)	23.9 (n=268)
		2 years post-treatment	60.4 (n=303)	18.4 (n=255)
4	*Fals-Stewart (2005)[57]*		n/a	n/a
5	**Maiden (1996,[59] 1997)[58]*	does not state post-treatment time-frame	^26.2 (n=80)	23.8 (n=80)
6	*Walton (2002)[63]*	2 years post-treatment	[$]39.6 (n=177)	13.4 (n=177)

[&]the mean of perpetrator's self report and partner's report on perpetrator's violence was calculated by the reviewer; n/a – data not given; *calculated by the reviewer from raw data; ^not stated or [$]lifetime pre-treatment baseline period

Table 13. Prevalence of severe domestic violence pre- and post-treatment for included studies

No.	Author (Year)	Length of post-treatment follow up	Prevalence of severe domestic violence	
			Pre-treatment % (n)	Post-treatment % (n)
1	*O'Farrell (1995,[64] 1999)[65]*	1 year post-treatment	21 (n=88) [&]	4.6 (n=88) [&]
		2 years post-treatment	15.4 (n=75) [&]	1.4 (n=75) [&]
2	*O'Farrell (2003)[60]*	1 year post-treatment	25.6 (n=301)	6.3 (n=269)
3	*O'Farrell (2004)[62]*	1 year post-treatment	21.8 (n=303)	9 (n=268)
		2 years post-treatment	21.8 (n=303)	6.3 (n=255)
4	*Fals-Stewart (2005)[57]*		n/a	n/a
5	**Maiden (1996,[59] 1997)[58]*	does not state post-treatment time-frame	63.8 (n=80)^	35 (n=80)
6	*Walton (2002)[63]*	2 years post-treatment	[$]19.8 (n=177)	9.5 (n=177)

The mean of perpetrator's self report and partner's report on perpetrator's violence was calculated by the reviewer; n/a – data not given; *calculated by the reviewer from raw data; ^not stated or [$]lifetime pre-treatment baseline period

Table 14. Prevalence of verbal aggression pre- and post-treatment for included studies

No.	Author (Year)	Length of post-treatment follow up	Prevalence of verbal aggression	
			Pre-treatment % (n)	Post-treatment % (n)
1	*O'Farrell (1995,[64] 1999,[65] 2000)[61]*		n/a	n/a
2	*O'Farrell (2003)[60]*	1 year post-treatment	99.3 (n=301)	70.3 (n=269)
3	*O'Farrell (2004)[62]*	1 year post-treatment	87.8 (n=303)	55.6 (n=268)
		2 years post-treatment	87.8 (n=303)	47.1 (n=255)
4	*Fals-Stewart (2005)[57]*		n/a	n/a
5	**Maiden (1996,[59] 1997)[58]*	does not state post-treatment time-frame	91 (n=80)^	70 (n=80)
6	*Walton (2002)[63]*		n/a	n/a

n/a – data not given; *calculated by the reviewer from raw data; ^not stated pre-treatment baseline period

Frequency of domestic violence

Table 15. Frequency of overall domestic violence pre- and post-treatment for included studies

No.	Author (Year)	Length of post-treatment follow up	Mean frequency of overall domestic violence	
			Pre-treatment Mean (*SD*, n)	Post-treatment Mean (*SD*, n)
1	*O'Farrell (1995,[64] 1999)[65]*	1 year post-treatment	4.1* (n=88)	0.8* (n=88)
		2 years post-treatment	3* (n=75)	0.7* (n=75)
2	*O'Farrell (2003)[60]*	1 year post-treatment	2.1 (*3.9*, n=301)	1.3 (*3.7*, n=269)
3	*O'Farrell (2004)[62]*	1 year post-treatment	5.7 (*13.1*, n=303)	2 (*7.6*, n=268)
		2 years post-treatment	5.7 (*13.1*, n=303)	1.9 (*11.6*, n=255)
4	*Fals-Stewart (2005)[57]*		n/a	n/a
5	*^Maiden (1996,[59] 1997)[58]*	does not state post-treatment time-frame	2.3 (*3.4*, n=80)[$]	0.4 (*1.1*, n=80)
6	*Walton (2002)[63]*		n/a	n/a

*the mean of perpetrator's self report and partner's report on perpetrator's violence was calculated by the reviewer, so standard deviations were not calculable; n/a – data not given; ^calculated by the reviewer from raw data; [$]not stated pre-treatment baseline period

Table 16. Frequency of severe domestic violence pre- and post-treatment for included studies

No.	Author (Year)	Length of post-treatment follow up	Mean frequency of severe domestic violence	
			Pre-treatment Mean (*SD*, n)	Post-treatment Mean (*SD*, n)
1	*O'Farrell (1995,[64] 1999,[65] 2000)[61]*		n/a	n/a
2	*O'Farrell (2003)[60]*	1 year post-treatment	0.5 (*1.4*, n=301)	0.2 (*1.1*, n=269)
3	*O'Farrell (2004)[62]*	1 year post-treatment	1.5 (*5*, n=303)	0.4 (*2.2*, n=268)
		2 years post-treatment	1.5 (*5*, n=303)	0.7 (*4.7*, n=255)
4	*Fals-Stewart (2005)[57]*		n/a	n/a
5	**Maiden (1996,[59] 1997)[58]*	does not state post-treatment time-frame	0.6 (*0.8*, n=80)^	0.3 (*0.5*, n=80)
6	*Walton (2002)[63]*		n/a	n/a

n/a – data not given; *calculated by the reviewer from raw data; ^not stated pre-treatment baseline period

Table 17. Frequency of verbal aggression pre- and post-treatment for included studies

No.	Author (Year)	Length of post-treatment follow up	Mean frequency of verbal aggression	
			Pre-treatment Mean (*SD*, n)	Post-treatment Mean (*SD*, n)
1	*O'Farrell (1995,[64] 1999,[65] 2000)[61]*		n/a	n/a
2	*O'Farrell (2003)[60]*	1 year post-treatment	54.6 (*17.4*, n=301)	26.4 (*13.7*, n=269)
3	*O'Farrell (2004)[62]*	1 year post-treatment	60.1 (*36.9*, n=303)	30.7 (*30.7*, n=268)
		2 years post-treatment	60.1 (*36.9*, n=303)	23.9 (*27*, n=255)
4	*Fals-Stewart (2005)[57]*		n/a	n/a
5	**Maiden (1996,[59] 1997)[58]*	does not state post-treatment time-frame	13.4 (*3.6*, n=80)^	1.6 (*0.9*, n=80)
6	*Walton (2002)[63]*		n/a	n/a

n/a – data not given; *calculated by the reviewer from raw data; ^not stated pre-treatment baseline period

Prevalence and frequency of domestic violence in remitted and relapsed alcohol drinkers

Three studies[60-62,64,65] provided domestic violence data on participants in the intervention groups categorised as either "remitted" or "relapsed", with respect to alcohol consumption. Participants classified as "remitted" did not need to be completely abstinent during the follow up period. The three studies[60-62,64,65] categorised participants as "remitted" provided that all of the following criteria were met:

1) completely abstinent from alcohol or consumption of ≤ six standard drinks per day for no more than 10% of the days in the year
2) free of illicit drug use except for occasional marijuana use defined as no more than 10% of days in the year
3) no (re-)hospitalisation for alcohol(ism) or drug problems
4) no legal problems because of drinking or drug use
5) no job problems because of drinking or drug use

Two studies required an additional criterion to be fulfilled in order to classify participants as "remitted": no withdrawal symptoms or blackouts because of drinking or drug use.[61,62,64,65]

The prevalence and mean frequency of overall and severe domestic violence and verbal aggression for participants in the intervention groups who were remitted or relapsed alcohol drinkers are presented in Tables 18-23. The pre-treatment baseline

period involved recall of domestic violence over the previous year in all three studies. The lengths of post-treatment follow up periods are given in the tables.

Prevalence of domestic violence

Table 18. Prevalence of overall domestic violence in remitted and relapsed alcoholics

No.	Author (Year)	Length of post-treatment follow up	Prevalence of overall domestic violence	
			Remitted % (n)	Relapsed % (n)
1	**O'Farrell (1995)*[64]	1 year post-treatment	10.3 (n=39)	42.9 (n=49)
2	*O'Farrell (2003)*[60]	1 year post-treatment	14.8 (n=108)	32.1 (n=159)
3	**O'Farrell (2004)*[62]	1 year post-treatment	12.1 (n=99)	30.8 (n=169)
		2 years post-treatment	8.8 (n=114)	25.7 (n=140)
4	*Fals-Stewart (2005)*[57]		n/a	n/a
5	*Maiden (1996,*[59] *1997)*[58]		n/a	n/a
6	*Walton (2002)*[63]		n/a	n/a

n/a – data not given; *remitted alcohol drinkers defined according to 6 criteria

Table 19. Prevalence of severe domestic violence in remitted and relapsed alcoholics

No.	Author (Year)	Length of post-treatment follow up	Prevalence of severe domestic violence	
			Remitted % (n)	Relapsed % (n)
1	**O'Farrell (1995)*[64]	1 year post-treatment	0 (n=39)	16.3 (n=49)
2	*O'Farrell (2003)*[60]	1 year post-treatment	3.7 (n=108)	8.2 (n=159)
3	**O'Farrell (2004)*[62]	1 year post-treatment	3 (n=99)	12.4 (n=169)
		2 years post-treatment	2.6 (n=114)	8.6 (n=140)
4	*Fals-Stewart (2005)*[57]		n/a	n/a
5	*Maiden (1996,*[59] *1997)*[58]		n/a	n/a
6	*Walton (2002)*[63]		n/a	n/a

n/a – data not given; *remitted alcohol drinkers defined according to 6 criteria

Table 20. Prevalence of verbal aggression in remitted and relapsed alcoholics

No.	Author (Year)	Length of post-treatment follow up	Prevalence of verbal aggression	
			Remitted % (n)	Relapsed % (n)
1	** O'Farrell (1995,*[64] *1999,*[65] *2000)*[61]		n/a	n/a
2	*O'Farrell (2003)*[60]	1 year post-treatment	66.7 (n=108)	73 (n=159)
3	**O'Farrell (2004)*[62]	1 year post-treatment	36.4 (n=99)	66.9 (n=169)
		2 years post-treatment	38.6 (n=114)	53.6 (n=140)
4	*Fals-Stewart (2005)*[57]		n/a	n/a
5	*Maiden (1996,*[59] *1997)*[58]		n/a	n/a
6	*Walton (2002)*[63]		n/a	n/a

n/a – data not given; *remitted alcohol drinkers defined according to 6 criteria

Frequency of domestic violence

Table 21. Frequency of overall domestic violence in remitted and relapsed alcoholics

No.	Author (Year)	Length of post-treatment follow up	Mean frequency of overall domestic violence	
			Remitted Mean (*SD*, n)	Relapsed Mean (*SD*, n)
1	**O'Farrell (1995)*[64]	1 year post-treatment	0.3 (*0.9*, n=39)	2 (*3.9*, n=49)
2	*O'Farrell (2003)*[60]	1 year post-treatment	0.8 (*3*, n=108)	1.6 (*4*, n=159)
3	**O'Farrell (2004)*[62]	1 year post-treatment	0.7 (*3.6*, n=99)	2.7 (*9.1*, n=169)
		2 years post-treatment	0.3 (*1.5*, n=114)	3.2 (*15.5*, n=140)
4	*Fals-Stewart (2005)*[57]		n/a	n/a
5	*Maiden (1996,*[59] *1997)*[58]		n/a	n/a
6	*Walton (2002)*[63]		n/a	n/a

n/a – data not given; *remitted alcohol drinkers defined according to 6 criteria

Table 22. Frequency of severe domestic violence in remitted and relapsed alcoholics

No.	Author (Year)	Length of post-treatment follow up	Mean frequency of severe domestic violence	
			Remitted Mean (*SD*, n)	Relapsed Mean (*SD*, n)
1	** O'Farrell (1995,*[64] *1999,*[65] *2000)*[61]		n/a	n/a
2	*O'Farrell (2003)*[60]	1 year post-treatment	0.2 (*1.2*, n=108)	0.2 (*0.9*, n=159)
3	**O'Farrell (2004)*[62]	1 year post-treatment	0.2 (*1.9*, n=99)	0.6 (*2.4*, n=169)
		2 years post-treatment	0.1 (*1.4*, n=114)	1.1 (*6.1*, n=140)
4	*Fals-Stewart (2005)*[57]		n/a	n/a
5	*Maiden (1996,*[59] *1997)*[58]		n/a	n/a
6	*Walton (2002)*[63]		n/a	n/a

n/a – data not given; *remitted alcohol drinkers defined according to 6 criteria

Table 23. Frequency of verbal aggression in remitted and relapsed alcoholics

No.	Author (Year)	Length of post-treatment follow up	Mean frequency of verbal aggression	
			Remitted Mean (*SD*, n)	Relapsed Mean (*SD*, n)
1	** O'Farrell (1995,*[64] *1999,*[65] *2000)*[61]		n/a	n/a
2	*O'Farrell (2003)*[60]	1 year post-treatment	23.4 (*10.4*, n=108)	28.3 (*14.9*, n=159)
3	**O'Farrell (2004)*[62]	1 year post-treatment	18.8 (*23.4*, n=99)	37.7 (*33.7*, n=169)
		2 years post-treatment	16.2 (*21.4*, n=114)	30 (*29.5*, n=140)
4	*Fals-Stewart (2005)*[57]		n/a	n/a
5	*Maiden (1996,*[59] *1997)*[58]		n/a	n/a
6	*Walton (2002)*[63]		n/a	n/a

n/a – data not given; *remitted alcohol drinkers defined according to 6 criteria

Pre- and post-treatment alcohol consumption

All studies reported on alcohol outcomes as associated with domestic violence. Three studies did not provide pre- and post-treatment data for alcohol consumption.[57-59,63] Three studies provided data on remitted and relapsed alcohol drinkers.[60-62,64,65] The proportion of remitted alcohol drinkers ranged from 37% to 44% and proportions of relapsed drinkers ranged from 56% to 63% in the one year post-treatment follow up period.[60-62,64,65] One study reported two year post-treatment follow up period and found 45% participants were remitted and 55% were relapsed alcohol drinkers.[62] One study reported percentage days abstinent for participants in the intervention group and found an increase in the one year post-treatment follow up period (Mean [*SD*]: pre-treatment 25 [*20.1*] vs. post-treatment 79.1 [*22.6*]).[60]

3.3 Comments

Five of the six included studies reported prevalence figures for overall and severe domestic violence events.[58-65] There appears to be a trend towards improvement post-treatment for both overall domestic violence (ranging from 28.4% to 36.5% difference in prevalence at one year follow up, n=3;[60,62,64] from 26.2% to 42% difference in prevalence at two year follow up, n=3[62,63,65]) and severe domestic violence (ranging from 12.8% to 19.3% difference in prevalence at one year follow up, n=3[60,62,64]; from 10.3% to 15.5% difference in prevalence at two year follow up, n=3).[62,63,65] Similar trends were observed for verbal aggression.

The mean frequency of overall and severe domestic violence decreased post-treatment at one year and two year follow up. For overall violence, differences in mean frequency ranging from 0.8 to 3.7 at one year follow up (n=3)[60,62,64] and from 2.3 to 3.8 at two year follow up (n=2)[62,65] were observed. Similarly, for severe domestic violence, differences in mean frequency ranging from 0.3 to 1.1 at one year follow up (n=2).[60,62] Only one study reported two year follow up of pre- and post-treatment mean frequency of severe domestic violence and found a difference of 0.8.[62] Similar improvements were observed for verbal aggression.

Three studies[60,62,64] reported domestic violence prevalence and incidence figures for individuals for which treatment was a success (remitted alcohol drinkers) and for

those where treatment was not successful (relapsed alcohol drinkers) in reducing alcohol consumption. These studies indicate that at one year follow up, there was a lower prevalence of domestic violence (overall, severe, verbal aggression) in the remitted alcohol drinkers than the relapsed alcohol drinkers (n=3),[60,62,64]. This trend of improvement continued in the two year follow up period (n=1).[62] Similarly, there was an overall improvement in the mean frequency of overall and severe domestic violence and verbal aggression in the remitted alcohol drinkers, than the relapsed alcohol drinkers.

4. COST EFFECTIVENESS REVIEW

4.1 Aims

- To identify published economic evaluations of interventions for alcohol drinkers to reduce domestic violence.

4.2 Methods

The methods used were those employed for the clinical effectiveness review with the following additions and changes.

4.2.1 Search strategy

The search of bibliographic databases was expanded to include:

- EconLIT (Ovid) 1969-June 2006
- Cochrane Library (Wiley) 2006 Issue 3 (NHS EED)
- Office of Health Economics Health Economic Evaluations Database (OHE HEED) June 2006 issue

4.2.2 Inclusion criteria

Inclusion criteria used for the cost effectiveness review are shown in Table 24.

Table 24. Inclusion criteria for economic analysis

Domain	Criteria
Population	alcohol drinkers who have perpetrated incidents of domestic violence
Intervention	any counselling therapy
Comparator	no intervention
Outcome measures	cost, cost effectiveness, quality of life
Study design	Any

4.2.3 Quality assessment and data extraction strategies

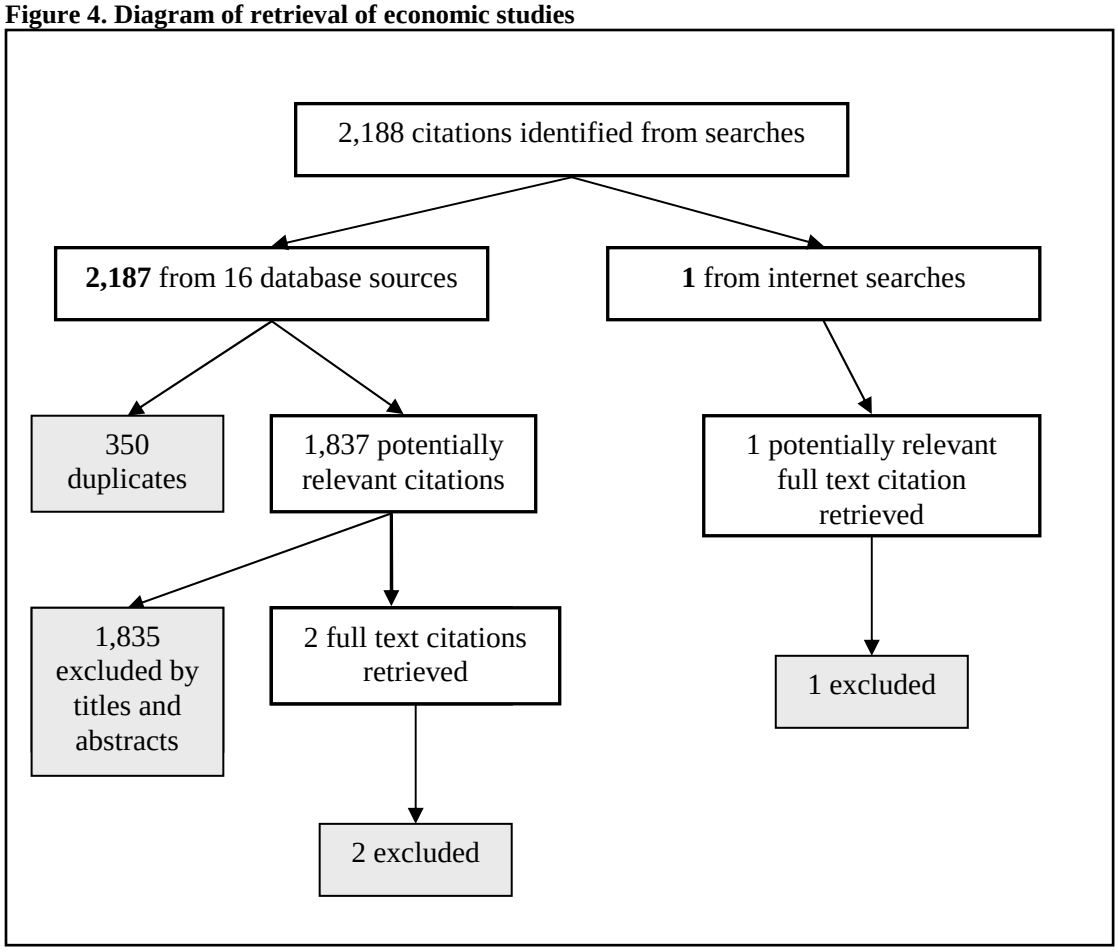
The checklist of Drummond and colleagues[67] was to be used to assess quality of included studies. Data from included studies were to be extracted using a data-extraction form.

4.3 Results

4.3.1 Yield of studies

The search process is summarised in Figure 4. No studies were recovered that satisfied the inclusion criteria.

Figure 4. Diagram of retrieval of economic studies



5. ECONOMIC MODEL

The aim of this section is to undertake a cost study relevant to the West Midlands region from the National Health Service (NHS) and Criminal Justice System (CJS) perspectives.

5.1 Model structure

The structure chosen for the model was a decision tree (see Figure 5). This figure shows the basic model structure used to assess the cost effectiveness of the interventions included in this review compared to no treatment from the National Health Service (NHS) perspective. The intervention arm in Figure 5 represents any counselling therapy aimed at alcohol drinkers who perpetrate domestic violence. The control arm represents no intervention rather than a placebo intervention. The time horizon is not specified.

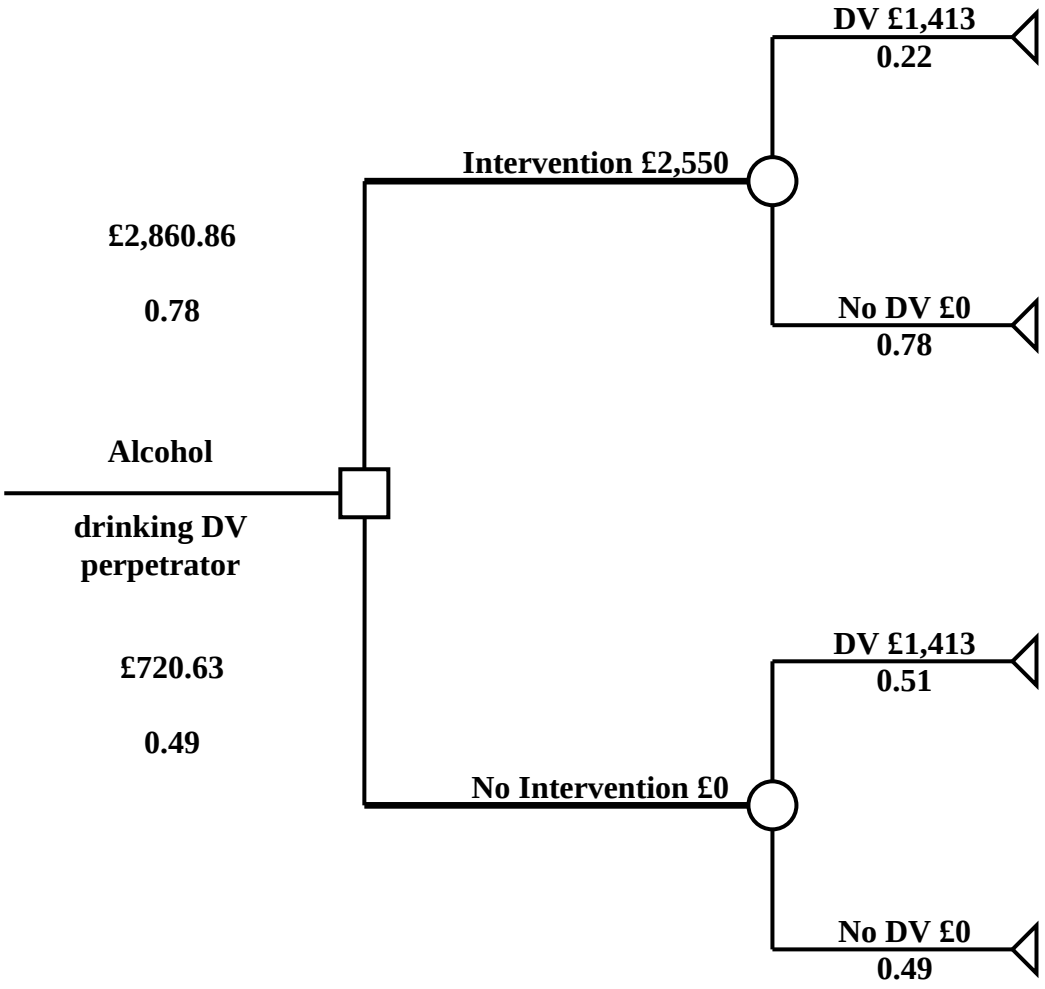
5.2 Inputs to the model

The costs and effectiveness parameters associated with the intervention and no intervention arms from the NHS perspective are given in Figure 5.

5.2.1 Clinical effectiveness estimates

The clinical effectiveness inputs into the model were derived from the systematic review clinical effectiveness results for prevalence of overall domestic violence that can be seen in Table 12 on page 42. A weighted mean was calculated from the post treatment results (input to intervention arm) and from the pre treatment results (input to control arm). In order to calculate cost effectiveness from the NHS perspective, it was assumed that one domestic violence event avoided equated to one less victim of domestic violence treated for one incident within the NHS. Similarly, from the CJS perspective it was assumed that one domestic violence event avoided equated to one less domestic violence re-offence to be processed.

Figure 5. Decision tree model for cost effectiveness analysis from National Health Service perspective



5.2.2 Cost estimates

The cost of the intervention was calculated using data from the clinical effectiveness studies on the average number of treatment sessions provided and cost estimates derived from an evaluation report of a brief counselling intervention "Alcohol Arrest Referral Scheme" conducted in the West Midlands as described in Appendix 16.[66] The Alcohol Arrest Referral Scheme costs were estimated to be approximately £70,000 per year (personal communication, Plant G, Aquarius, Dudley, 2006). This is for one full time worker, one half time worker and a half time administrator. It also covered other add on costs such as printing. In 4.8 years (September 2001 to July 2006), 2,000 individuals were referred by the police to the scheme. It was estimated that 2300 treatment sessions were conducted since the start of the scheme (personal communication, Plant G, Aquarius, Dudley, 2006). Hence, the cost of

intervention per session is estimated to be £150. The average number of treatment sessions used from the clinical effectiveness studies was 17. Hence, the average total cost of the intervention was estimated to be £2,550.

The cost of the control arm was assumed to be zero as no counselling was provided.

5.2.3 Cost to the NHS of treating victims

The cost of victim treatment was taken from Walby (2004[17]) who reported the proportions of contributions of different categories of domestic violence to total domestic violence and the costs associated with treatment of victims in each category. Using this data, we calculated the mean costs of treatment per domestic violence incident to be £1,413 (see Appendix 19).

5.2.4 Cost to the CJS of processing domestic violence perpetrators

Walby (2004[17]) also reported the costs of domestic violence incidents according to category of domestic violence. Using this data, we calculated the mean costs of processing perpetrators per domestic violence incident to be £1283 (see Appendix 19).

5.3 Estimation of cost effectiveness from an NHS perspective

The base case scenario assumes a “domestic violence event avoided” rate in the control arm of 51% and that the effectiveness of counselling interventions reduces this rate to 22%. The resulting costs and benefits are shown in Table 25.

Table 25. Base case scenario cost effectiveness from NHS perspective

	BENEFITS	COSTS (£)					ICER
	DV victims per 100 subjects	NHS treatment cost / DV victim	Total NHS treatment cost for victims	Cost of intervention per subject	Cost of intervention for 100 subjects	Total cost	
Intervention (I)	22	1,413.60	31,099.20	2,550	255,000	286,099	---
Control (C)	51	1,413.60	72,093.60	0	0	72,093	---
Difference I – C	29	---	-40,994.40	---	---	214,005	£7,379 per DV victim treatment avoided

5.3.1 Sensitivity analyses

We conducted sensitivity analyses to determine the effectiveness and cost of the counselling interventions required (see Appendix 20), in order for the ICER to be cost-neutral for the NHS. Even if the intervention of seventeen sessions is completely effective, the cost to the NHS is £3,586 per domestic violence treatment avoided. If we assume equal effectiveness using interventions consisting of two sessions, the ICER becomes negative, demonstrating cost savings (£379) to the NHS.

5.4 Estimation of cost effectiveness from an NHS and CJS perspective

For the base case, the assumptions are that the cost of the intervention is shared between the NHS and the CJS and that the same clinical effectiveness estimates of 22% in the intervention arm and 51% in the control arm. The resulting costs and benefits are shown in Table 26.

Table 26. Base case scenario cost effectiveness from NHS and CJS perspective

	BENEFITS	COSTS (£)					ICER
	DV case per 100 subjects	NHS + CJS costs per DV case	Total NHS + CJS cost for DV case	Cost of intervention per subject	Cost of intervention for 100 subjects	Total cost	
Intervention (I)	22	2,697.04	59,334.88	2,550	255,000	314,334.88	---
Control (C)	51	2,697.04	137,549.04	0	0	137,549.04	---
Difference I – C	29	---	-78,214.16	---	---	176,785.84	£6,096.06 per DV case avoided

5.4.1 Sensitivity analyses

We conducted sensitivity analyses to determine the effectiveness and cost of the counselling interventions required (see Appendix 20), for the ICER to be cost-neutral for the NHS and CJS. Even if the intervention is completely effective, the cost to the NHS and CJS is £2,303 per domestic violence case avoided. If equal effectiveness using interventions consisting of five sessions is assumed, the ICER becomes negative, demonstrating cost savings (£111) to the NHS and CJS.

6. DISCUSSION

6.1 Summary of results

The systematic review of clinical effectiveness included studies of low quality in the hierarchy of evidence, so the results should be treated with considerable caution. Also, the systematic review failed to find evidence that addressed the question of the clinical effectiveness of brief interventions for alcohol drinkers to reduce domestic violence. We found more evidence on the effectiveness of any counselling intervention. The general trend of the results suggested that interventions that reduce alcohol consumption seem to reduce domestic violence incidence. This is demonstrated by a reduction in incidence following the intervention and also a reduction in incidence in remitted alcoholics.

We found no economic evaluations on counselling interventions for alcohol drinkers to reduce domestic violence. A simple economic model was constructed to estimate incremental cost effectiveness ratios (ICER) of counselling interventions from NHS and combined NHS and CJS perspectives. The economic evaluation found that it costs the NHS £7,380 per domestic violence case avoided (base case). In order for the intervention to be cost-neutral, the counselling intervention would have to be reduced to two sessions. When the CJS perspective is added, the base-case scenario generated an ICER for counselling intervention *vs.* no intervention of £6,096 for each domestic violence case avoided. From the sensitivity analysis, counselling intervention became cost-neutral when the number of sessions was reduced to five.

6.2 Assumptions, limitations and uncertainties

One of the main challenges of this systematic review was the identification of relevant studies. Owing to lack of indexing terms on some of the electronic bibliographic databases searched it was difficult to find relevant studies. In addition, some databases did not have the facility to save citations in a form compatible with the bibliographic software used so cross referencing these databases to look for duplicate references manually was time-consuming.

A limitation of this systematic review was imposed by the dearth of literature relevant to the research question. Furthermore the economic analyses performed required major assumptions which in turn were not underpinned by a good evidence base. Consequently the results of the cost effectiveness analysis should be viewed with considerable caution. Nevertheless should the effectiveness results be substantiated by further research, it is clear that the intervention could be cost effective both from the NHS and CJS perspectives. We did not carry out the economic modelling from a Social Services perspective and this could be seen as a limitation because of the large economic burden that domestic violence has on the Social Services.

6.3 Possible reasons for lack of evidence

There have been few published and robust studies to date that have examined the impact of decreased alcohol consumption on domestic violence following a counselling intervention, particularly brief therapies. There may be several reasons for this. These include:

- A separation of treatments for substance abuse and alcohol problems and domestic violence amongst academic and clinical investigators.
- Any focus on alcohol in domestic violence is likely to be a secondary consideration to the domestic violence itself.
- The ethical implications of ensuring safety of victims, whilst collecting reliable and valid domestic violence outcomes. It would not be ethically acceptable to conduct an RCT comparing counselling to no counselling in alcoholic participants to establish the effect on domestic violence outcomes.
- Researchers may be guided by a particular theoretical viewpoint of domestic violence and its association with alcohol and may be disinclined to consider the merits of counselling, particularly brief interventions on such complex events as domestic violence.
- The difficulty in screening and identifying patients who are also perpetrators of domestic violence. Screening and risk assessment of domestic violence is commonly adopted from the victim’s perspective. Although a person with an alcohol problem may attend a General Practice surgery and be screened for hazardous alcohol drinking, there is no guidance currently available for health

professionals in screening for domestic violence perpetrators. This may be due to the limited interventions available post screening and a tendency to focus on domestic violence victim screening and intervention. Moreover, although counselling, and brief interventions in particular, are widely acknowledged to be efficacious in a variety of settings, implementation of screening coupled with counselling such as brief interventions has been poor. Hence, the impetus for research within this field has progressed to implementation strategies.[68]

- There is a difficulty in acquiring an adequate sample size for investigation. As an example, since Alcohol Arrest Referral Scheme (see Appendix 16) started in September 2001 (to July 2006) only 13% of the 2000 referrals were related to domestic violence (i.e. only 260 cases would be expected over 5 years). This may be due to the nature of the setting where reporting to the police and subsequent arrest is required for referral. In The UK British Crime Survey 2005/06 only approximately 42% of cases are reported to the police.[14]

6.4 Further research

The following primary research is needed.

- Randomised controlled trials of the effectiveness of any counselling interventions on alcohol to reduce domestic violence events.
- Randomised controlled trials of the effectiveness of brief interventions on alcohol to reduce domestic violence events.
- Studies investigating the efficacy of different parameters of the counselling intervention itself.
- Methodological studies on a systematic approach to grey literature searching.
- A UK based cost effectiveness study that would incorporate the above results and any other studies that were needed in order to carry this out.

6.5 Conclusions

This report has concluded that counselling interventions may be clinically effective and cost effective in reducing domestic violence in alcohol drinkers. The generalisability of this finding to the West Midlands is relatively low because of the poor quality of the included studies, the fact that the clinical effectiveness studies

were undertaken in the USA, and because the costs in the economic evaluation were partially based on a study that only included 10% domestic violence perpetrators. Also, we have very few details of the nature, content and duration of the counselling interventions. Should cost effectiveness become clearly demonstrated, strategies will be required to improve implementation and uptake of the intervention on a wider scale than appears to have been carried out to date.

7. APPENDICES

Appendix 1. Details of "Crime in England and Wales" report

This report[14] obtained data from two sources – the British Crime Survey and police recorded crime figures. The British Crime Survey undertook 47,796 face-to-face interview with adults aged 16 or over living in private households in England and Wales between April 2005 and March 2006. The sample was selected to achieve a minimum of 1000 core interviews in each police force area. Within the West Midlands region, 4,760 interviews were conducted. Respondents were asked about their experiences of crime-related incidents in the 12 months prior to their interview, attitudes towards crime related issues such as the police, criminal justice system and perceptions of crime and anti-social behaviour.[14]

Caution should be exercised when using the results from the British Crime Survey as various aspects of the methodology e.g. the use of the settled domestic household as the key unit in the sampling frame, gender of the interviewer, the presence of other members (and potential domestic violence perpetrators) of the household within the room and the interpretation of what crime is within the framework of the crime survey may have implications for the reported prevalence rates and profile of the victims.[17]

Data was also obtained from police recorded crime figures which were recorded in the financial year 2005/2006 by the police in England and Wales.[14] The majority of domestic violence data were however obtained from the British Crime Survey, as "figures on recorded crime do not identify offences of domestic violence since it is not a legal definition". Such offences would normally be recorded with reference to any injuries sustained e.g. other wounding. Domestic violence in this report was defined as "all violent incidents, excluding mugging, which involved partners, ex-partners, household members or other relatives".[14]

Appendix 2. Prevalence of domestic violence victimisation in England and Wales in 2005/06 in different sub-groups according to personal and household characteristics

Table 27. Proportion of adult victims in England and Wales in different sub-groups according to personal characteristics*

	Sub-group	Prevalence (%) in sub-group
Overall sample size		*47,729*
Age and sex	*Men*	*0.2*
	Men 16-24	0.3
	Men 25-34	0.2
	Men 35-44	0.3
	Men 45-54	0.3
	Men 55-64	0
	Men 65-74	0
	Men 75+	0
	Women	*0.6*
	Women 16-24	1.4
	Women 25-34	0.6
	Women 35-44	1.1
	Women 45-54	0.6
	Women 55-64	0.2
	Women 65-74	0
	Women 75+	0
Ethnic group	White	0.4
	Non-white	0.4
Marital status	Married	0.2
	Cohabiting	0.5
	Single	0.7
	Separated	2.3
	Divorced	1.4
	Widowed	0
Employment status*	Employed	0.4
	Unemployed	0.7
	Economically inactive	0.8
Highest qualification	None	0.3
	O'level/GCSE	0.7
	Apprenticeship or A/AS level	0.4
	Degree/diploma	0.3
	Other	0.5
Disability/illness	None	0.4
	Non-limiting	0.5
	Limiting	0.4
*Based on men aged 16-64 and women aged 16-59; Adapted from Walker et al (2006)[14]		

Note - this is general statistics for all domestic violence cases irrespective of alcohol involvement

Table 28. Proportion of adult victims in England and Wales in different sub-groups according to household characteristics*

	Sub-group	Prevalence (%) in sub-group
Overall sample size		*47,729*
Household type	Single adult + child(ren)	2.7
	Adults + child(ren)	0.5
	No children	0.4
Household income (£)	< 5000	0.5
	5000 < 10000	0.6
	10000 < 20000	0.6
	20000 < 30000	0.4
	30000 +	0.4
Tenure	Owner occupiers	0.3
	Social renters	0.9
	Private renters	0.5
Area type	Rural	0.4
	Urban	0.4
*Adapted from Walker et al (2006)[14]		

Appendix 3. Definitions relating to alcohol consumption according WHO ICD-10 and the American Diagnostic and Statistical Manual of Mental Disorders (DSM)

Table 29. Table of alcohol use definitions

Term	Meaning
Low risk alcohol use	Drinking that is within legal and medical guidelines and is not likely to result in alcohol-related problems[29]
Alcohol misuse	General term for any level of risk, ranging from hazardous drinking to alcohol dependence[29]
Hazardous use e.g. binge or chronic heavy drinking	Pattern of alcohol consumption carrying with it a risk of harmful consequences to the drinker which may be damage to health, physical or mental, or they may include social consequences to the drinker or others[29]
Alcohol dependence i.e. "alcoholism" or "alcohol addiction"	Is a maladaptive pattern of use leading to clinically significant impairment or distress, as manifested by three or more of the following within the same 12-month period: o a strong desire or sense of compulsion to drink; o difficulties in controlling drinking in terms of onset, termination, or levels of use; o a physiological withdrawal state when alcohol use has ceased or been reduced, or use of alcohol to relieve or avoid withdrawal symptoms; o evidence of tolerance, such that increased doses of alcohol are required to achieve effects originally produced by lower doses; o progressive neglect of alternative pleasures or interests because of alcohol use; o continued use despite clear evidence of harmful consequences[29] involves impaired control over drinking, manifested by physiological addiction to alcohol and/or serious disturbances of health, work, social or recreational activities, or other areas of functioning related to alcohol use[30]
Alcohol abuse i.e. harmful use	A maladaptive pattern of use leading to clinically significant impairment or distress, as manifested by one or more of the following, within a 12-month period: o recurrent alcohol use resulting in a failure to fulfil major role obligations at work, school, or home; o recurrent alcohol use in situations in which it is physically hazardous; o recurrent alcohol-related legal problems; o continued alcohol use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the alcohol; o the symptoms have never met the criteria for alcohol dependence[29] involves serious disturbances of health, work, or other areas of functioning related to alcohol use, without satisfying the criteria for alcohol dependence a pattern of drinking that is already causing damage to health which may be either physical (e.g., liver damage from chronic drinking) or mental (e.g., depressive episodes secondary to drinking)[30]

Appendix 4. Breakdown of levels of alcohol consumption in the UK according to personal and household characteristics

Table 30. Levels of alcohol consumption in different sub-groups according to personal characteristics in the UK for 2004*

	Sub-group	On at least 1 day of the week, % who drank	
		> 3/4 units	> 6/8 units
Overall sample size		*14,874*	
Age and sex	*Men*		
	Men 16-24	8	32
	Men 25-44	20	31
	Men 45-64	28	18
	Men 65+	28	7
	Women		
	Women 16-24	39	24
	Women 25-44	28	13
	Women 45-64	20	6
	Women 65+	5	1
Employment status	Employed	38	20
	Unemployed	41	24
	Economically inactive	24	12
* Adapted from Goddard and Green (2005)[31]			

Table 31. Levels of alcohol consumption in different sub-groups according to household characteristics in the UK for 2004*

	Sub-group	On at least 1 day of the week, % who drank	
		> ¾ units	> 6/8 units
Overall sample size		*14,874*	
Gross weekly household income (£)	< 200	21	11
	200 < 400	24	13
	400 < 600	32	17
	600 < 800	36	18
	800 < 1000	39	22
	> 1000	40	20
* Adapted from Goddard and Green (2005)[31]			

Appendix 5. Integrated Domestic Abuse Programme

The Integrated Domestic Abuse Programme (IDAP) is based on multi-agency approach including the Criminal Justice System, Probation Services, Police and other domestic violence support groups (e.g. Victim Support). The partnership approach allows a greater understanding of the domestic violence offender's behaviour to facilitate the selection of the most appropriate intervention.

IDAP is a 36-week community-based, group programme for convicted domestic violence offenders and it focuses on concepts such as control and misuse of power. Offenders are expected to talk openly about their violence within the group, and listen to others' experiences. The aim of the programme is to help violent men recognise the impact of their violence, take responsibility for their actions and eventually stop their violent behaviour.

The programme addresses both physical and psychological violence. This can include isolation from friends or family; degradation – public humiliation, forced sex acts or repeated household chores; threats of the above, threats to children or threats of suicide; making ceaseless demands, having unpredictable moods and holding distorted perspectives such as "I only hurt you because I love you".

Although the victims often play an important role in the offender's rehabilitation, their needs and safety are always supported first. If the victim and the offender are still in contact, the victim is asked to give regular feedback to help shape the offender's supervision.[44,69]

Appendix 6. Definitions of brief interventions and related terms

Brief intervention, sometimes known as “brief talk therapy”, can refer to any therapeutic or preventive consultation of short duration undertaken by a health professional.[70]

The World Health Organisation defines “brief intervention” as “a treatment strategy in which structured therapy of short duration (typically 5-30 minutes) is offered with the aim of assisting an individual to cease or reduce the use of a psychoactive substance or to deal with other life issues”.[71] They are designed to be used by general practitioners and other primary health care workers, most commonly for the reduction of harmful alcohol use in non-alcohol dependents.[71] Brief interventions may be more extensive in other settings.[71] Alcohol Concern (UK national voluntary agency on alcohol misuse) suggests an upper limit of two to three sessions of motivational interviewing or counselling for brief interventions.[72]

Brief intervention is normally delivered by specialist addiction therapists, typically involves no more than a total of 3-4 hours contact. Motivational Enhancement Therapy has become one of the most popular forms of brief treatment among specialist addiction therapists.[49]

Minimal interventions generally take place in community settings and are delivered by non specialist personnel such as general practitioners and other primary health care staff, hospital physicians and nurses, social workers, probation officers and other generalist professions. Minimal interventions may consist of a simple screening procedure and a few minutes of advice.[49]

The uniting characteristic of brief interventions is their brevity. All included some form of advice-giving, usually in combination with other procedures that could be administered in one or two sessions.[73]

Brief intervention comprises a single session, and up to a maximum of four sessions of engagement with a patient and provision of information and advice that is

designed to achieve a reduction in risky alcohol consumption or alcohol related problems.[74]

Therefore, brief interventions may be classified as follows:

1) specialist brief interventions – delivered by specialist drug and alcohol treatment services to people seeking treatment for alcohol problems
2) opportunistic or primary care brief interventions – targeted at people in primary care health settings who do not present for an alcohol problem but are screened as drinking at hazardous and harmful levels. The intervention may be once-only and last a few minutes
3) community brief interventions – similar to primary care brief interventions, but aim to identify and intervene opportunistically with people in naturalistic environments e.g. universities, shopping centres etc

Common elements of brief interventions: FRAMES

Bien and colleagues (1993) suggest six common components of brief interventions and summarise these under the acronym "FRAMES" in the table below.[75]

Table 32. Common components of brief interventions; FRAMES*

Component	Explanation
Feedback *of Personal Risk:*	BIs provide specific feedback of patient's own risks for problems based on current drinking patterns, laboratory results, likely medical consequences or comparisons to population drinking norms
Personal ***Responsibility*** *for Change:*	BIs emphasise patient's choice in reducing drinking
Clear ***Advice*** *to Change:*	BIs provide explicit advice on reducing or stopping drinking
Menu *of Ways to Reduce or Stop Drinking:*	BIs provide patients with a variety of strategies from which to choose e.g. setting specific limits on consumption, learning to recognise high-risk drinking situations and develop skills to avoid drinking during these occasions, and proposing alternatives to drinking. Written self-help materials that present such strategies or include drinking diaries can be used.
Therapeutic ***Empathy*** *as a Counselling Style:*	BIs use a warm, reflective, empathetic, and understanding delivery style, rather than a directive or coercive style.
Encouragement of Patient ***Self-Efficacy*** *and Optimism:*	BIs emphasise and encourage patient's self-efficacy, strengths, and ability to change, rather than focusing on perceptions of helplessness or powerlessness.
*Adapted from Bien et al (1993)[75]	

Other factors have been identified which may enhance the efficacy of brief interventions[75]and are described below.

Establishing a drinking goal:
Explicit goals are helpful in attaining and maintaining behaviour changes. These are typically negotiated between the patient and the practitioner and may take the form of a contract or written agreement.

Ongoing follow-up:
Telephone calls from office staff, repeat office visits, mailed reminders, or follow-up medical examinations may be effective in maintaining changes in alcohol drinking behaviours.

Timing:
Individuals are more ready to change when they acknowledge their problem. Such opportunistic occasions may occur when patients are admitted to emergency medical settings with alcohol-related injuries or when routine medical care identifies the presence or the risk of alcohol-related illness.

Effectiveness of brief interventions in reducing alcohol consumption
There have been no systematic reviews looking at brief interventions and domestic violence. There have been numerous reviews examining the clinical effectiveness of brief interventions in reducing alcohol consumption only in various populations and settings, with or without a screening component.[75-84] The overall conclusions of these reviews seem to favour brief interventions. Table 30 provides a list of conclusions derived from recent systematically conducted reviews.

Table 33. Conclusions of systematic reviews of brief interventions to reduce alcohol consumption

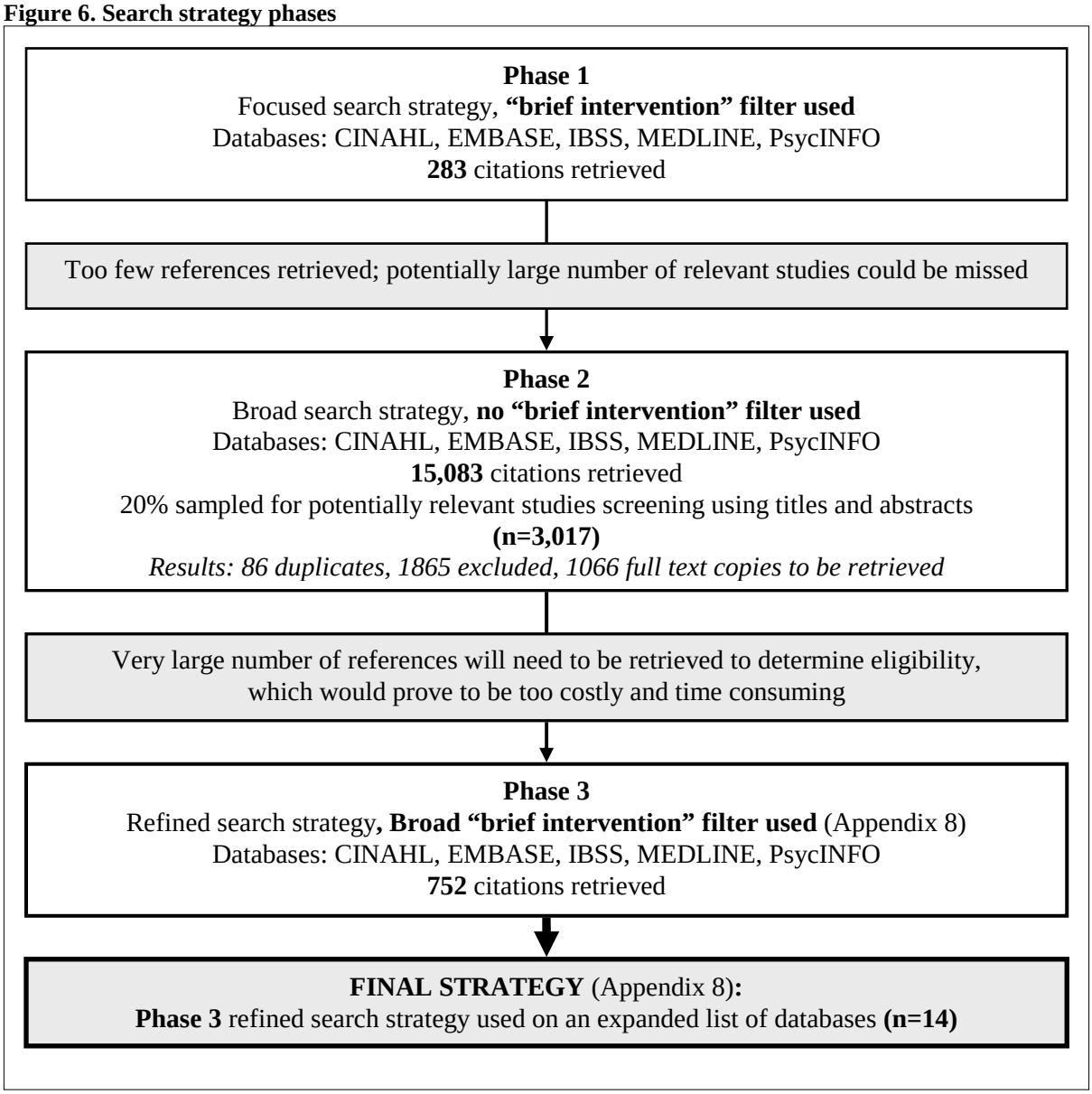
Author (Year)	Review conclusions
Vasilaki (2006)[83]	Brief motivational interviewing is effective in reducing alcohol consumption compared to no intervention.
Bertholet (2005)[77]	Focusing on patients in primary care, this systematic review and meta-analysis indicated that brief alcohol intervention is effective in reducing alcohol consumption at 6 and 12 months, with a mean pooled difference of - 4 drinks per week in favour of the brief alcohol intervention group.
Ballesteros (2003)[76]	The results of this meta-analysis support the efficacy of brief intervention for excessive drinkers in primary care settings in Spain. The effect size regarding the decrease of alcohol consumption was medium, with the intervention group outperforming the control by 22%.
Moyer (2002)[81]	This review summarizes additional positive evidence for brief interventions compared to control conditions typically delivered by health-care professionals to non-treatment-seeking samples. The results concur with previous reviews that found little difference between brief and extended treatment conditions.
Poikolainen (1999)[82]	Extended brief interventions (several visits) were effective among women in reducing alcohol consumption. Other brief interventions (5-20 minutes) seem to be effective sometimes, but not always, and the average effect cannot be reliably estimated.
Wilk (1997)[84]	Heavy drinkers who received a brief intervention were twice as likely to moderate their drinking 6 to 12 months after an intervention when compared with heavy drinkers who received no intervention.
Kahan (1995)[80]	The trials support the use of brief interventions by physicians for patients with drinking problems.

Only one UK based study investigating the possible economic benefits of combined screening and brief interventions targeted at reducing alcohol consumption was identified. Freemantle and colleagues calculated the cost per detection and brief intervention delivered to someone consuming above the recommended limits to be less that £20 in 1993.[85] Given the potential future implications of alcohol-related disorders and associated morbidity and mortality, screening and brief interventions may prove to be cost saving.

Two cost benefit analysis studies were conducted in America which also examined combined screening and brief intervention programmes. One study suggested that US$10,000 invested in brief interventions results in savings in future health care costs of approximately $43,000.[86] Lower saving estimates were given by the more recent study. Gentilello and colleagues suggest savings in health expenditure of US$3.81 for every US$1 spent on screening and brief intervention.[87]

Appendix 7. Phases of search strategy employed

Figure 6. Search strategy phases



Appendix 8. Final effectiveness search strategy using focussed "Brief intervention" filter where possible

Database: MEDLINE (Ovid) 1966 to June Week 3 2006

1 domestic violence.mp. or exp domestic violence/
2 ((abus$ or assault$ or batter$ or violen$) adj3 (emotion$ or financ$ or physical$ or psycholog$ or sex$ or relation$ or home$ or famili$ or marital or married or partner$ or spous$ or husband$ or wife or wives or mother$ or maternal or father$ or paternal or brother$ or sister$ or sibling$ or woman or women or man or men or child$ or elder$ or intimate$ or domestic)).mp.
3 or/1-2
4 alcohol$.mp.
5 alcoholism.mp. or exp ALCOHOLISM/
6 alcohol related disorder$.mp.
7 (drink$ or drunk$).mp.
8 or/4-7
9 ((brief or early or minim$ or abate$ or motivation$ or self-help or short or simpl$ or supplementa$ or time-limit$) adj3 (advi$ or appointment$ or booklet$ or consult$ or counsel$ or feedback or guideline$ or information or intervention$ or interview$ or manual$ or pamphlet$ or principle$ or program$ or resource$ or skill$ or strateg$ or support$ or therap$ or treatment$ or workbook$)).mp.
10 BIBLIOTHERAPY/ or bibliotherapy.mp.
11 or/9-10
12 3 and 8 and 11

Database: EMBASE (Ovid) 1980 to 2006 Week 25

1 domestic violence.mp. or exp domestic violence/
2 ((abus$ or assault$ or batter$ or violen$) adj3 (emotion$ or financ$ or physical$ or psycholog$ or sex$ or relation$ or home$ or famili$ or marital or married or partner$ or spous$ or husband$ or wife or wives or mother$ or maternal or father$ or paternal or brother$ or sister$ or sibling$ or woman or women or man or men or child$ or elder$ or intimate$ or domestic)).mp
3 or/1-2
4 alcohol$.mp.
5 alcoholism.mp. or exp ALCOHOLISM/
6 alcohol related disorder$.mp.
7 (drink$ or drunk$).mp.
8 or/4-7
9 ((brief or early or minim$ or abate$ or motivation$ or self-help or short or simpl$ or supplementa$ or time-limit$) adj3 (advi$ or appointment$ or booklet$ or consult$ or counsel$ or feedback or guideline$ or information or intervention$ or interview$ or manual$ or pamphlet$ or principle$ or program$ or resource$ or skill$ or strateg$ or support$ or therap$ or treatment$ or workbook$)).mp.
10 BIBLIOTHERAPY/ or bibliotherapy.mp.
11 or/9-10
12 3 and 8 and 11

Database: CINAHL (Ovid) 1982 to June Week 3 2006

1 domestic violence.mp. or exp domestic violence/
2 ((abus$ or assault$ or batter$ or violen$) adj3 (emotion$ or financ$ or physical$ or psycholog$ or sex$ or relation$ or home$ or famili$ or marital or married or partner$ or spous$ or husband$ or wife or wives or mother$ or maternal or father$ or paternal or brother$ or sister$ or sibling$ or woman or women or man or men or child$ or elder$ or intimate$ or domestic)).mp.
3 or/1-2
4 alcohol$.mp.
5 alcoholism.mp. or exp ALCOHOLISM/
6 alcohol related disorder$.mp.
7 (drink$ or drunk$).mp.
8 or/4-7
9 ((brief or early or minim$ or abate$ or motivation$ or self-help or short or simpl$ or supplementa$ or time-limit$) adj3 (advi$ or appointment$ or booklet$ or consult$ or counsel$ or feedback or guideline$ or information or intervention$ or interview$ or manual$ or pamphlet$ or principle$ or program$ or resource$ or skill$ or strateg$ or support$ or therap$ or treatment$ or workbook$)).mp.
10 BIBLIOTHERAPY/ or bibliotherapy.mp.
11 or/9-10
12 3 and 8 and 11

Database: PsycINFO (Ovid) 1806 to June Week 3 2006

1 domestic violence.mp. or exp domestic violence/
2 ((abus$ or assault$ or batter$ or violen$) adj3 (emotion$ or financ$ or physical$ or psycholog$ or sex$ or relation$ or home$ or famili$ or marital or married or partner$ or spous$ or husband$ or wife or wives or mother$ or maternal or father$ or paternal or brother$ or sister$ or sibling$ or woman or women or man or men or child$ or elder$ or intimate$ or domestic)).mp.
3 or/1-2
4 alcohol$.mp.
5 alcoholism.mp. or exp ALCOHOLISM/
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9 ((brief or early or minim$ or abate$ or motivation$ or self-help or short or simpl$ or supplementa$ or time-limit$) adj3 (advi$ or appointment$ or booklet$ or consult$ or counsel$ or feedback or guideline$ or information or intervention$ or interview$ or manual$ or pamphlet$ or principle$ or program$ or resource$ or skill$ or strateg$ or support$ or therap$ or treatment$ or workbook$)).mp
10 BIBLIOTHERAPY/ or bibliotherapy.mp.
11 or/9-10
12 3 and 8 and 11

Additional databases searched:

Database: IBSS (International Bibliography of Social Science) (OVID) 1951 to June Week 03 2006

1 domestic violence.mp. or exp domestic violence/
2 ((abus$ or assault$ or batter$ or violen$) adj3 (emotion$ or financ$ or physical$ or psycholog$ or sex$ or relation$ or home$ or famili$ or marital or married or partner$ or spous$ or husband$ or wife or wives or mother$ or maternal or father$ or paternal or brother$ or sister$ or sibling$ or woman or women or man or men or child$ or elder$ or intimate$ or domestic)).mp.
3 or/1-2
4 alcohol$.mp.
5 alcoholism.mp. or exp ALCOHOLISM/
6 alcohol related disorder$.mp.
7 (drink$ or drunk$).mp.
8 or/4-7
9 ((brief or early or minim$ or abate$ or motivation$ or self-help or short or simpl$ or supplementa$ or time-limit$) adj3 (advi$ or appointment$ or booklet$ or consult$ or counsel$ or feedback or guideline$ or information or intervention$ or interview$ or manual$ or pamphlet$ or principle$ or program$ or resource$ or skill$ or strateg$ or support$ or therap$ or treatment$ or workbook$)).mp.
10 BIBLIOTHERAPY/ or bibliotherapy.mp.
11 or/9-10
12 3 and 8 and 11

Appendix 9. Inclusion procedure

The first decision was made from titles and abstracts using the following question.

Does the study appear potentially relevant, based on title and/or abstract with respect to population, intervention, outcome measure and study design?	Yes/No/ Unclear

If the answer was yes or unclear, the full text publication was retrieved. This was screened for inclusion/exclusion using the following criteria:

Table 34. Inclusion criteria checklist

Inclusion criteria	Criterion met?	Comment
Population: Does the population consist of alcohol drinkers who have perpetrated incidents of domestic violence?	Yes Unclear Discuss No	
Intervention: Is the intervention applied to the defined population and is the intervention brief i.e. no more than 4 sessions?	Yes Unclear Discuss No	
Outcomes: Has domestic violence outcomes been measured?	Yes Unclear Discuss No	
Study design: Is the study design: randomised controlled trial, cohort study, before and after study, case-control study with at least 20 matched controls	Yes Unclear Discuss No	
Document what type of study design is being used		

The study was included if “Yes” was answered to all the questions.

Appendix 10. Quality checklist for non-randomised studies

Table 35. Clinical effectiveness quality checklist

No.	Criteria	Yes	No	Cannot tell
1	Were eligibility criteria explicit?			
2	Was sample source/selection described?			
3	Were patients assembled at same time?			
4	Was a method of diagnosis stated?			
5	Were clinical details described?			
6	Was individual patient data reported?			
7	Was outcome assessment blinded?			
8	Was blinding method adequately described?			
9	Was follow up time stated?			
10	Were withdrawals stated?			
11	Were reasons for withdrawals stated?			
	Comments			

Appendix 11. Data extraction form – clinical effectiveness

Table 36. Clinical effectiveness data extraction form

Author (year)	
Country	
Study design	
Setting	
Population	
Inclusion criteria	
Exclusion criteria	
Sample size	
Age	
Sex	
Socioeconomic details	
Marital status	
Level of alcohol misuse	
Other addiction	
Intervention	
Type of intervention	
Content	
Number of sessions	
Length per session	
Administered by	
Comparator	
Content	
Administered by	
Outcomes (copy and repeat as necessary)	
Who assessed?	
What was assessed?	
Score at baseline	
Score post-intervention	
Score at follow-up	
Statistical analysis	
Results	
Ethical issues	
Adverse events	

Appendix 12. References of unobtainable citations

1. Dupree LW. The Gerontology Alcohol Project: A behavioral treatment program for elderly alcohol abusers, Gerontologist, 24 (1985) Oct-516.
2. Goldkamp JS, Weiland D, Collins M, White M. Role of drug and alcohol abuse in domestic violence and its treatment: Dade County's domestic violence court experiment. 1-212. 1996. Philadelphia, PA, Crime and Justice Research Institute.
3. Hamberger LK, Hastings JE. Psychopathology Differences between Batterers and Nonbatterers: Psychosocial Modifiers, 13p.14 Aug 1989., (1989) 14.
4. Krampen G, Nispel L. Effectiveness of a short-term treatment of alcoholics: A one-year follow-up, Suchtgefahren, 29 (1983).
5. Thomas JF Evaluation of a treatment group for male perpetrators of domestic violence. 1998. Dissertation

Appendix 13. Characteristics of excluded studies with references and reasons for exclusions

Table 37. Table of excluded studies obtained from searches

No.	Reference	Study design	Reason for exclusion
1	Ballesteros J, Gonzalez-Pinto A, Querejeta I, Arino J. Brief interventions for hazardous drinkers delivered in primary care are equally effective in men and women. *Addiction* 2004; 2004 Jan; 99(1):103-108.	Review	Population did not consist of DV perpetrators, no DV outcomes given
2	Buttell FP, Pike CK. Investigating the differential effectiveness of a batterer treatment program on outcomes for African American and Caucasian batterers. *Research on Social Work Practice* 2003; 13(6):675-692.	Before and after	Population were mixed with substance abusers, intervention was 12 weeks in duration
3	Cadiz S, Savage A, Bonavota D, Hollywood J, Butters E, Neary M, *et al*. The Portal Project: A Layered Approach to Integrating Trauma into Alcohol and Other Drug Treatment for Women. [References]. *Alcoholism Treatment Quarterly* 2004; 22(3-4):2004-2139.	Narrative review	Population were DV victims, intervention was 6 to 12 month residential programs, no DV outcomes given
4	Caetano R, Schafer J, Fals-Stewart W, O'Farrell T, Miller B. Intimate partner violence and drinking: new research on methodological issues, stability and change, and treatment	Review	Intervention was at least 18 sessions
5	Chang G, Behr H, Goetz MA, Hiley A, Bigby J. Women and alcohol abuse in primary care: Identification and intervention. *American Journal on Addictions* 1997; 6(3):Sum-192.	RCT	Population did not consist of DV perpetrators, no DV outcomes given
6	Curry SJ, Ludman EJ, Grothaus LC, Donovan D, Kim E. A randomized trial of a brief primary-care-based intervention for reducing at-risk drinking practices. *Health Psychol* 2003; 2003 Mar; 22(2):156-165.	RCT	Population did not consist of DV perpetrators, no DV outcomes given
7	Drapkin ML, McCrady BS, Swingle JM, Epstein EE. Exploring bidirectional couple violence in a clinical sample of female alcoholics. *Journal of Studies on Alcohol* 2005; 66:213-219.	RCT	Reported on characteristics, no outcomes given
8	Easton C, Swan S, Sinha R. Motivation to change substance use among offenders of domestic violence. *Journal of Substance Abuse Treatment* 2000; 19(1):1-5.	Randomised prospective study	Population only stated substance abuse, no breakdown of alcohol, no DV outcomes
9	Fals-Stewart W, Klostermann K, Yates B, Yates BT. Brief Relationship Therapy for Alcoholism: A Randomized Clinical Trial Examining Clinical Efficacy and Cost-Effectiveness. [References]. *Psychology of Addictive Behaviors* 2005; 19(4):Dec-371.	Audit	Intervention consist of 12 weekly 90 minute sessions
10	Fleming MF, Mundt MP, French MT, Manwell LB, Stauffacher EA, Barry KL. Benefit-cost analysis of brief physician advice with problem drinkers in primary care settings. *Med Care* 2000; 2000 Jan; 38(1):7-18.	RCT	Population did not consist of DV perpetrators, no DV outcomes given
11	Foxcroft DR, Ireland D, Lister-Sharp DJ, Lowe G, Breen R. Longer-term primary prevention for alcohol misuse in young people: a systematic review. *Addiction* 2003; 2003 Apr; 98(4):397-411.	Review	Population did not consist of DV perpetrators, prevention programs, no DV outcomes given
12	Graham A. A brief intervention reduced alcohol drinking for up to 48 months in problem drinkers. *ACP J Club* 2002; 2002 Sep-Oct; 137(2):59.	RCT	Population did not consist of DV perpetrators, no DV outcomes given
13	Hamberger LK, Hastings JE. Counseling male spouse abusers: Characteristics of treatment completers and dropouts. *Violence & Victims* 1989; 4(4).	Cohort	Intervention consist of 16 sessions, no DV outcomes given

No.	Reference	Study design	Reason for exclusion
14	Kelly AB, Halford WK, Young RM. Maritally distressed women with alcohol problems: the impact of a short-term alcohol-focused intervention on drinking behaviour and marital satisfaction. *Addiction* 2000; 2000 Oct; 95(10):1537-1549.	Control prospective study	Population did not consist of DV perpetrators, no DV outcomes given
15	Kethineni S, Blimling L, Bozarth JM, Gaines C. Youth violence: An exploratory study of a treatment program in a central Illinois County. *International Journal of Offender Therapy & Comparative Criminology* 2004; 48(6).	Audit	Intervention ranged from 6 sessions over 3 months to 72 sessions over 18 months
16	McCrady BS, Fink E, Longabaugh R, Stout R. Behavioral alcoholism treatment in the partial hospital. *International Journal of Partial Hospitalization* 1983; 2(2).	Prospective study	Population did not consist of DV perpetrators, intervention > 4 sessions, no DV outcomes given
17	McCrady BS. Maintaining change after conjoint behavioral alcohol treatment for men: outcomes at 6 months. *Addiction* 1999; 94(9):1999-1396.	RCT	Population did not consist of DV perpetrators, no DV outcomes given
18	McLellan AT. One-year outcomes from the CASAWORKS for families intervention for substance-abusing women on welfare. *Evaluation review* 2003; 27(6):2003-2680.	Field evaluation	Population consist of DV victims, intervention > 4 sessions
19	Riccelli C. STOP: An early intervention program for problem drinkers. *Journal of the American College Health Association* 1985; 34(3).	Audit	Population did not consist of DV perpetrators, intervention 5 sessions, no DV outcomes given
20	Saunders DG. Helping husbands who batter. *Social Casework* 1984; 65(6):Jun-353.	Narrative review	Intervention consist of 12 sessions, no DV outcomes given
21	Shakeshaft AP, Bowman JA, Burrows S, Doran CM, Sanson-Fisher RW. Community-based alcohol counselling: a randomized clinical trial. *Addiction* 20002; 2002 Nov; 97(11):1449-1463.	RCT	Population did not consist of DV perpetrators, no DV outcomes given
22	Smith AJ, Hodgson RJ, Bridgeman K, Shepherd JP. A randomized controlled trial of a brief intervention after alcohol-related facial injury. *Addiction* 2003; 2003 Jan; 98(1):43-52.	RCT	Population did not consist of DV perpetrators, no DV outcomes given
23	Wagenaar AC, Murray DM, Toomey TL. Communities mobilizing for change on alcohol (CMCA): Effects of a randomized trial on arrests and traffic crashes. *Addiction* 2000; 95(2):209-217.	RCT	Population did not consist of DV perpetrators, prevention programs, no DV outcomes given
24	Whelan G, Gijsbers AT. Alcohol: the good, the bad and the ugly	Editorial	Population did not consist of DV perpetrators, no intervention, no DV outcomes given
25	Zweben A, Pearlman S, Li S. A comparison of brief advice and Conjoint Therapy in the treatment of alcohol abuse: The results of the Marital Systems Study. *British Journal of Addiction* 1988; 83(8):Aug-916.	RCT	Population did not consist of DV perpetrators, no DV outcomes given

Appendix 14. List of organisations and experts

Organisations

Aquarius (www.aquarius.org.uk)

Cochrane Drugs and Alcohol Group

Domestic Violence Intervention Program (www.dvip.org/)

RESPECT (www.respect.uk.net/)

STAR Project

Stopping Aggression in the Family Environment

Experts

Sgt. Nigel Braun, Prolific Offender Project, Stafford Police Station

Kathy Cole-Evans, Cannock Chase District Council

Dr. Sarah Galvani, Lecturer in Social Work, University of Birmingham

Prof. Nick Heather, Director of the Centre for Alcohol and Drug Studies, Northumbria University

Dr. Eileen Kaner, Lecturer in School of Population and Health Sciences, University of Newcastle-upon-Tyne

Prof. Jim Orford, Head of Birmingham, Alcohol, Drugs and Addiction Group, University of Birmingham

Appendix 15. Details of the excluded studies obtained from organisations and experts

Table 38. Table of excluded studies obtained from organisations and experts

No.	Reference	Study design	Reason for exclusion
1	Sharp D. Brief motivational interventions in alcohol related offending. Aquarius Birmingham 2004	Qualitative study	No DV outcomes given
2	Wright D, Carter S. Evaluation of the alcohol arrest referral scheme. *Dudley's Community Safety Partnership* 2003	Audit	< 10% original sample were domestic violence perpetrators

Appendix 16. Details of excluded study used in the economic model

This study (Wright and Carter 2003[66]) was commissioned by Police Inspector Alistair Cook, Local Authority Liaison Officer for West Midlands Police on behalf of Community Safety Team, Safe and Sound Dudley's Community Safety Partnership. The study was funded by a grant from the UK Government Cabinet Office. The report was produced for local consumption and was not peer reviewed.

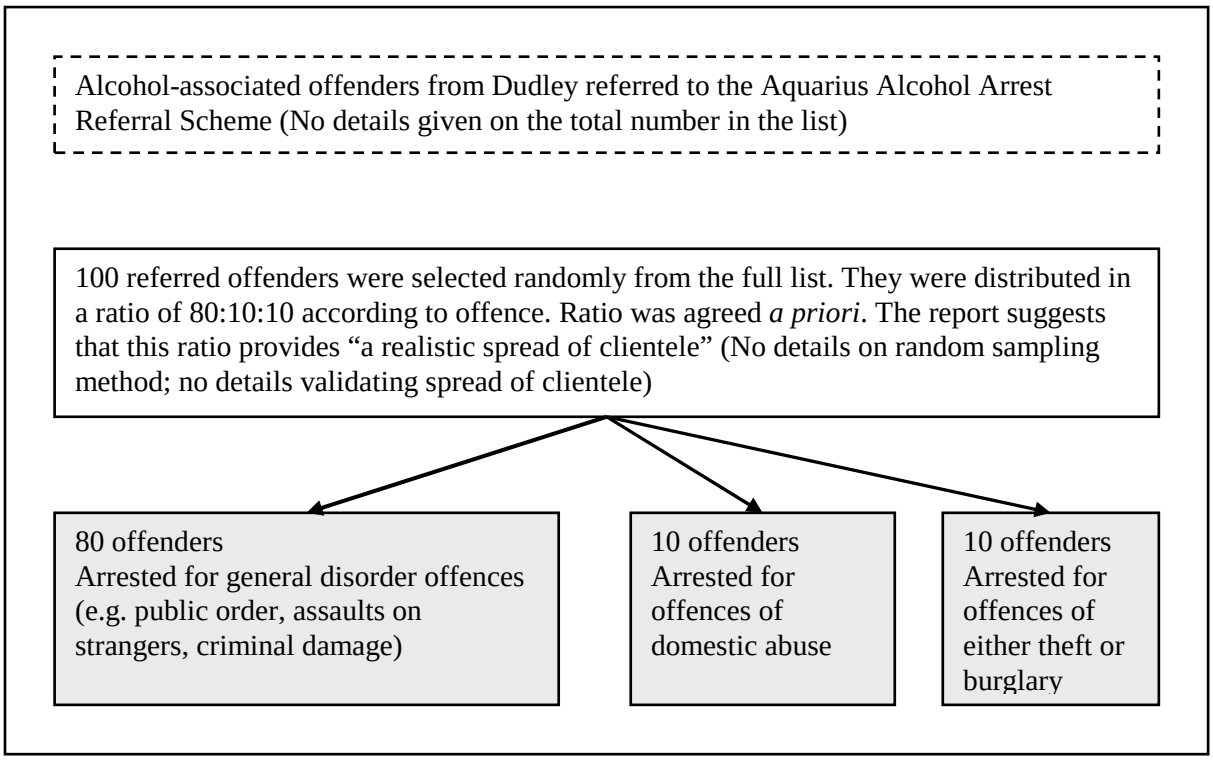
The study aimed to evaluate an "Alcohol Arrest Referral Scheme" set up in Dudley and administered by Aquarius. Aquarius is a West Midlands UK-based alcohol and drugs charity which provides services in seven areas of the West Midlands with the aim of reducing alcohol and drug related harm. The scheme comprised an arrest component followed by a referral component to Aquarius for brief intervention treatment. This programme was not specifically geared towards domestic violence perpetrators, but a proportion of the individuals included in the sample had been arrested for domestic violence-associated offences.

The study retrospectively analysed the two year re-conviction histories of populations arrested for alcohol-associated offences. The intervention population (Dudley) had received a "brief intervention" programme (based on the FRAMES model) but the comparator population (Walsall) had not.

Intervention population (Dudley)

The intervention population (n = 100) was randomly selected from a cohort of offenders referred to Aquarius for the Alcohol Arrest Referral Scheme programme. All offenders were arrested for alcohol related offences in Dudley. Figure 7 below illustrates the selection and offence characteristics of the intervention group.

Figure 7. Characteristics of the intervention group and sample selection procedure



Comparator population (Walsall)

A group of appropriate individuals arrested for alcohol-associated offences was selected from neighbouring Walsall (a member of the same British Crime Survey family group). Walsall did not have an Alcohol Arrest Referral Scheme so this group acted as a non-treatment control. The report states that the Walsall control group was matched one-to-one with the Dudley group on the basis of age, gender and offence. It is assumed here that the sample was 100, but this was not explicitly stated in the report.

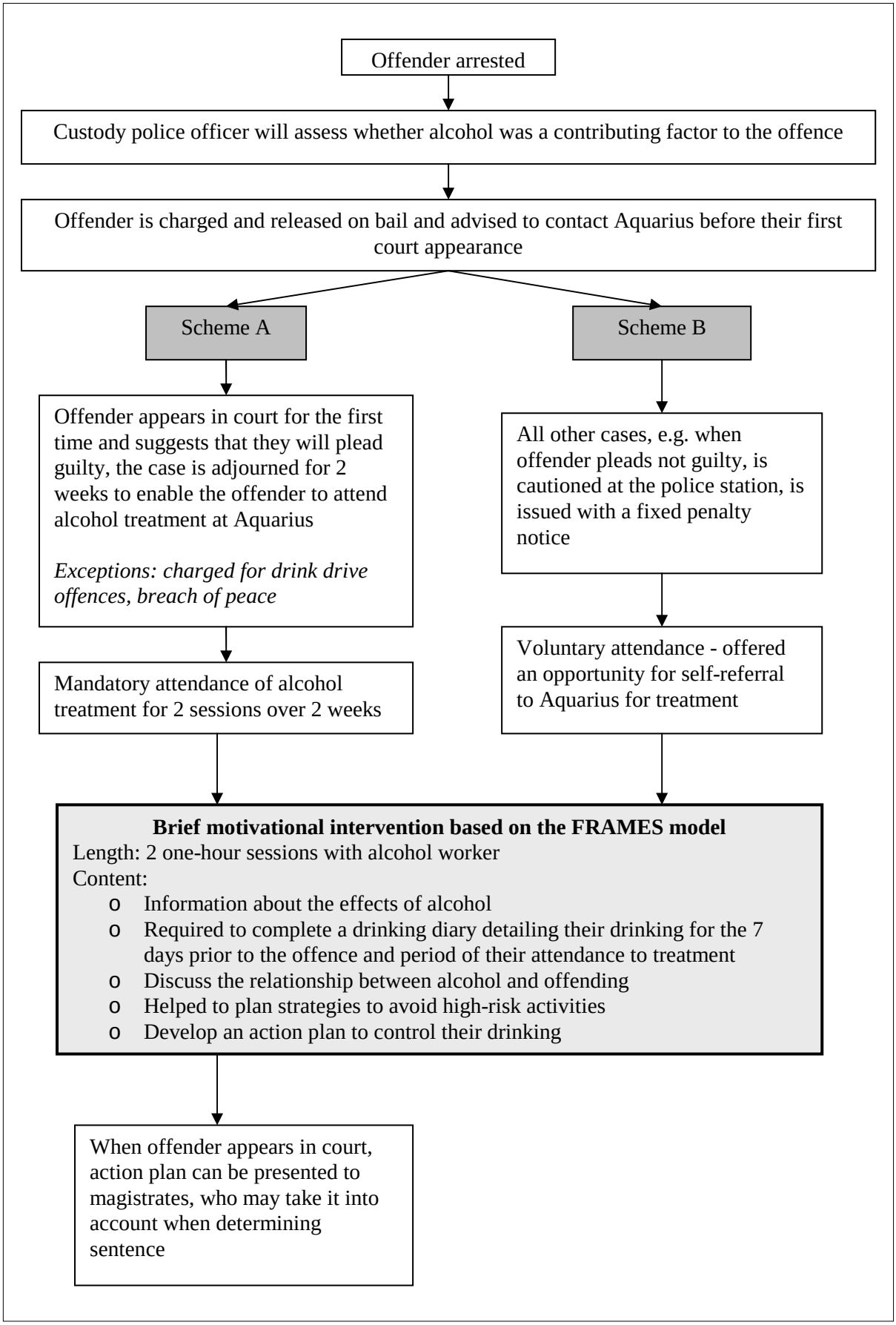
Intervention

Details of the brief intervention and the patient pathway in the intervention group are shown in Figure 8.

Outcomes

Incidence rate and prevalence rate of re-conviction and association of re-convictions with alcohol.

Figure 8. Representation of pathway by which offender is referred to Aquarius for brief intervention



Study Quality

It was difficult to determine study methods because of limited reporting and contact with the author did not result in clarification. The comparability of groups was difficult to determine because of a lack of demographic details. The results of quality assessment of this study using the checklist instrument is shown in Table 39.

Table 39. Quality assessment of study

No.	Criteria	Yes	No	Cannot tell
1	Were eligibility criteria explicit?		√	
2	Was sample source/selection described?		√	
3	Were patients assembled at same time?	√		
4	Was a method of diagnosis stated?		Not applicable	
5	Were clinical details described?		√	
6	Was individual patient data reported?		√	
7	Was outcome assessment blinded?		√	
8	Was blinding method adequately described?		Not applicable	
9	Was follow up time stated?	√		
10	Were withdrawals stated?			√
11	Were reasons for withdrawals stated?		Not applicable	

Effectiveness findings

The number of re-convictions over two years and the number of these associated with alcohol offences were reported for both groups. In addition, the number of individuals re-convicted in each group was provided. Unfortunately the proportion of re-convicted individuals that were involved in alcohol or domestic violence associated offences at re-conviction was not provided. Similarly no breakdown of results related re-convictions to the nature of the original offence at recruitment (that is domestic abuse, general disorder, or theft / burglary). Therefore it is not possible to determine if the intervention reduced the rate of domestic violence offences either amongst the whole sample population or amongst the sub-sample (n=10) originally categorised as committing domestic violence offences.

Figure 9 on page 88 provides a diagrammatic representation of the results and conclusions drawn by the authors of the report.

Risk of re-conviction

In Table 40, a two by two table of the raw data for calculating the relative risk (RR) of re-conviction is shown. The relative risk of re-conviction (BI vs. no BI) is 0.61 (95% CI 0.413 to 0.902). Hence, there is a 39% (CI 10% to 59%) reduced probability of an individual being re-convicted if they received the BI; or alternatively 1.63 fold greater probability of re-conviction in the control group (no BI) than in the intervention group (BI).

Table 40. Raw data for calculating relative risk of re-conviction

		Re-conviction		Total
		+	-	
Brief intervention	+	27	73	100
	-	44	56	100
Total		71	129	**200**

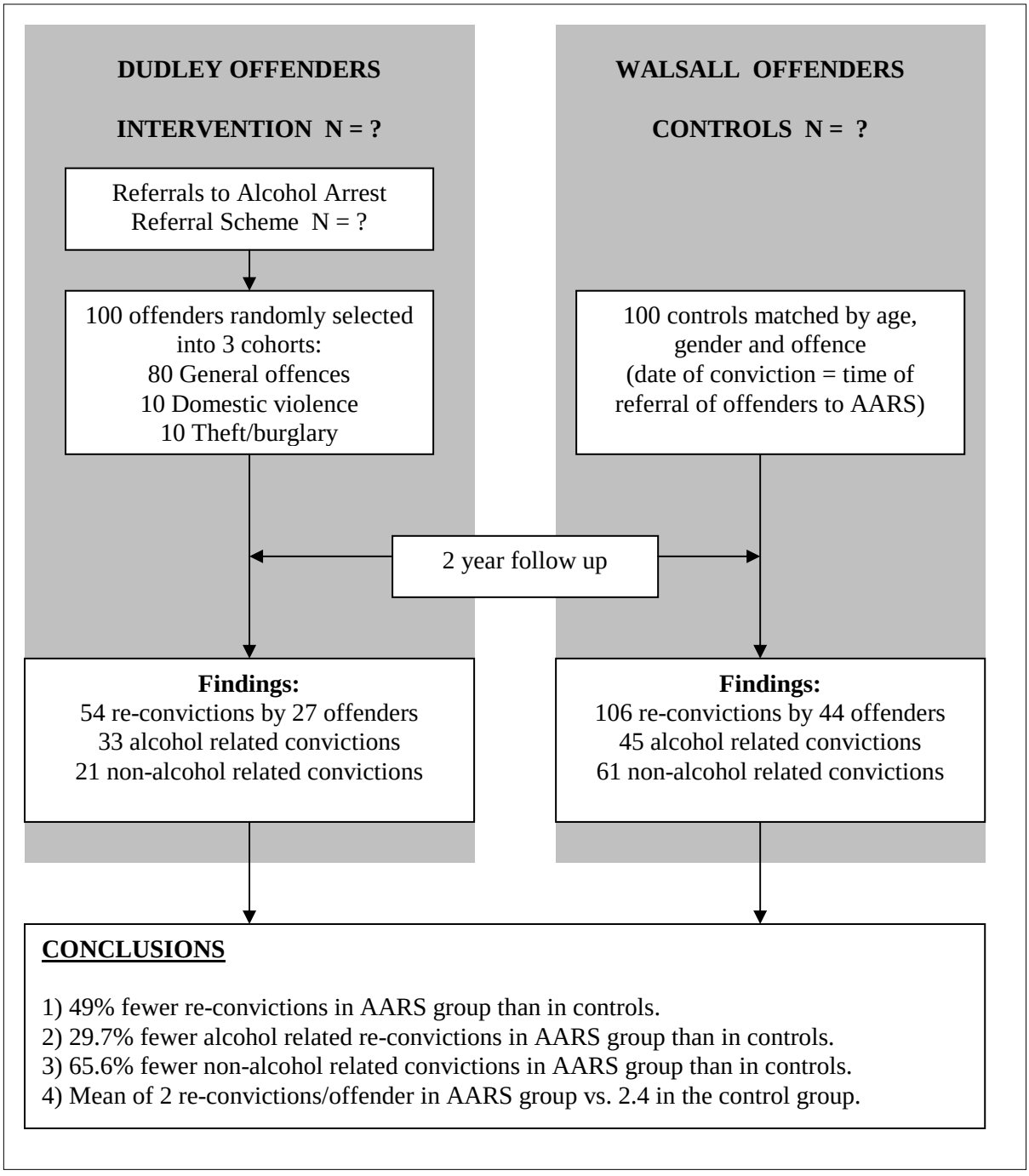
Comments on study results

The results of this study indicated that the brief intervention may have been effective in preventing re-conviction. The relevance of this result to re-conviction for domestic violence offences amongst perpetrators is very uncertain due to the fact that only a small number of domestic violence perpetrators were probably enrolled in the study[††] and an unknown number of domestic violence perpetrators were included amongst the individuals re-convicted. Five of the 100 selected offenders in the intervention arm were subsequently not convicted of the arrested offence that triggered their referral to the Alcohol Arrest Referral Scheme and therefore did not fulfil the implicit eligibility criteria for the study. In addition there remain doubts about the validity of the result. These stem mainly from the lack of information regarding the selection of study subjects. Although it is possible that the sample of 100 controls and 100 intervention subjects represent about the same proportion of the total offenders in each region (Dudley and Walsall), there is no information in the study report to confirm this. More serious is the question of how the intervention subjects were assembled and in particular what was the actual proportion of guilty and not guilty pleaders in the sample and what proportion of the total list of referrals was included in the study; also methods for the randomised sampling were not

[††]Although 10 of 100 individuals were definitely perpetrators it is possible that others were also perpetrators but had been arrested on the particular referring occasion for a different class of alcohol-related offence.

reported. Given these caveats, the result should be viewed with considerable caution but appears to warrant further and more rigorous study.

Figure 9. Diagrammatic representation of the results and conclusions of study authors



Appendix 17. Characteristics of included studies

Author (year)	O'Farrell (1995[64], 1999,[65] 2000)[61]	O'Farrell (2003)[60]	O'Farrell (2004)[62]	Fals-Stewart (2005)[57]	Maiden (1996,[59] 1997)[58]	Walton (2002)[63]
Country	USA	USA	USA	USA	USA	USA
Study design	Cohort, using historical controls as the comparator NB: only the pre- and post-treatment results for the intervention arm were used	Cohort, using historical controls as the comparator NB: only the pre- and post-treatment results for the intervention arm were used	Cohort, naturalistic, using historical controls as the comparator NB: only the pre- and post-treatment results for the intervention arm were used	Before and after NB: only the pre- and post-treatment results for the intervention arm were used	Retrospective survey NB: only the pre- and post-treatment results for the intervention arm were used	Retrospective survey, participants were initially recruited for a cross sectional survey, funding was not available for the 2 year follow up. However, some participants agreed to be contacted in the future. These were followed up 2 years later. NB: only the pre- and post-treatment results for the intervention arm were used
Setting	Community	Community	Community	Community	Community	not stated
Population	88 male alcoholics and female partners	301 male married or co-habiting heterosexual alcoholic patients Obtained from: 49% legal system 23% treatment system 17% self-referral 11% referral sources	303 heterosexual couples, male alcoholic patients and female partner Obtained from: 52% after completing inpatient alcoholism treatment (3 to 10 days in length) 41% self referrals 7% in response to advertisements	169 male and their female partners Recruited from: a treatment programme	80 married, cohabiting or divorced alcoholic male clients Recruited from: 3 Employee Assistance Programmes	180 participants Recruited from: substance abuse treatment centres for alcohol and illicit drug abuse/dependence

Author (year)	O'Farrell (1995[64], 1999,[65] 2000)[61]	O'Farrell (2003)[60]	O'Farrell (2004)[62]	Fals-Stewart (2005)[57]	Maiden (1996,[59] 1997)[58]	Walton (2002)[63]
Inclusion criteria	▪ 25-60 years ▪ married for at least 1 year or living together in a stable common-law relationship for at least 3 years ▪ meet DSM criteria for alcohol abuse or dependence ▪ MAST score $\geq$ 7, consumed alcohol in the 120 days before initial assessment ▪ accepted abstinence for the duration of intervention	▪ 20-60 years ▪ married for at least 1 year or living with a significant other in a stable common-law relationship for at least 2 years ▪ had sought treatment for an alcohol problem and were not referred for a psychoeducational program for driving while intoxicated offenders ▪ DSM criteria for alcohol abuse or dependence ▪ had medical clearance to engage in abstinence-oriented outpatient treatment	▪ 21 to 65 years ▪ married couple or living together for at least 1 year ▪ met DSM criteria for current diagnosis alcohol abuse or dependence (past 6 months) ▪ accepted abstinence from alcohol ▪ patient's alcoholism diagnosis was at least as serious as any coexisting current drug problem diagnosis ▪ if he was separated the couple was willing to reconcile for the program ▪ male patient agreed to forgo other alcoholism counselling (other than self help support groups e.g. AA)	not stated	entered the intervention at least 6 months prior to the assessment interview	18 years of age within first month of treatment

Author (year)	O'Farrell (1995[64], 1999,[65] 2000)[61]	O'Farrell (2003)[60]	O'Farrell (2004)[62]	Fals-Stewart (2005)[57]	Maiden (1996,[59] 1997)[58]	Walton (2002)[63]
Exclusion criteria	Alcoholic and partner: ▪ met DSM criteria for psychoactive substance use disorder (other than alcoholism) in the past 6 months ▪ met the DSM criteria for schizophrenia, delusional (paranoid) disorder, bipolar disorder, major depression, other psychotic disorders, or borderline personality disorder ▪ separated and was unwilling to reconcile for the project Partner: abused alcohol and had been abstinent for less than 6 months	Alcoholic and partner: alcoholic or female partner met DSM criteria for organic mental disorder, schizophrenia, delusional paranoid disorder or other psychotic disorder Alcoholic: ▪ did not agree to refrain from the use of alcohol and illicit drugs for the duration of treatment ▪ did not agree to refrain from seeking additional substance abuse treatment except for self-help meetings e.g. AA for the duration of the treatment, unless recommended by the primary therapist	Either alcoholic or partner meet DSM criteria for a current psychotic disorder, evidence of organic impairment sufficient to impair project participation	not stated	not stated	not stated
Sample size	88	301	303	169	80	180
Age	Mean (SD) 43.5 (9)	Mean (SD) 42.1 (12.6)	Mean (SD) 43.3 (10)	Mean (SD) 36.1 (7.7)	Range: 20-65 median between 35-59	Mean (SD) 39.6 (9.76) ranged 18 to 71
Sex	Male	male	male	male	male	92 males : 88 females

Author (year)	O'Farrell (1995[64], 1999,[65] 2000)[61]	O'Farrell (2003)[60]	O'Farrell (2004)[62]	Fals-Stewart (2005)[57]	Maiden (1996,[59] 1997)[58]	Walton (2002)[63]
Ethnicity	98.9% white 1.1% black	80.7% white 12% black 4.3% Hispanic 3% other	95.4% white 2.6% black 2% Hispanic	67.5% 114 white 19.5% black 4% Hispanic 3% other	65% white 27.5% black 7.5% Hispanic	56.8% white 35.2% black 1.1% Hispanic 2.3% American Indian 0.6% Asian 4% other
Education	Most participants in both samples completed high school or had some college Mean years of education: 12.5	On average participants were high school educated	High school educated	not stated	7th grade to postgraduate education	Mean (SD) 12.8 years (1.9) ranged from 7 to 17
Socioeconomic details	Household income:^ $38,000, $38,500 $33,500 ^discrepancy in 3 reports	Annual family income: $32,000	Average yearly family income: $42,000	not stated	not stated	Mean (SD) Yearly income $33,839 ($26089)
Marital status	Mean (SD) Married 13.9 years (9.9) 31.8% previously married	Mean (SD) Relationship 10.2 years (8) 93% married 7% co-habiting	Mean (SD) Relationship 13.2 years (10.7) 88.4% married 11.6% co-habiting	Mean (SD) Relationship 8.1 years (6)	Length of marriage ranged from 1 to 34 years, median 12 years 75% married 20% divorced 2.5% cohabiting.	32.4% married 26.3% never married 1.7% widowed 39.7% separated or divorced

Author (year)	O'Farrell (1995[64], 1999,[65] 2000)[61]	O'Farrell (2003)[60]	O'Farrell (2004)[62]	Fals-Stewart (2005)[57]	Maiden (1996,[59] 1997)[58]	Walton (2002)[63]
Level of alcohol misuse	DSM alcohol abusers/dependents serious chronic alcoholics = MAST score 36.7 (10.4) 36.6 (10.5)^ Alcohol Dependence Scale score 19 (9.9) number of years of problem drinking 14.4 (9.8) 13.3 (10.2)^ number of hospitalisations for alcohol abuse 5.1 (8.9) median 2 5.4 (9.6)^ ^discrepancy in 2 reports	DSM alcohol abusers/dependents DSM-IV 93% (n=279) alcohol dependence, 7% (n=22) alcohol abuse MAST score 32.2 (10.2) Alcohol Dependence Scale score 19 (7.7) number of years with drinking problem 14 (8.5)	DSM-III-R alcohol dependence 94% (n=286), abuse 2% [n=5], alcohol dependence in partial remission 1% [n=4], alcohol dependence in full remission 3% [n=8] MAST score 35.4 [10.9] Alcohol Dependence Scale score 17.7 [9]. Years of drinking problem 16.1 years [10.1] multiple alcohol related hospitalisations 4.9 [12.6], Median 2 and arrests 3.9 [9.8] Median 1.	DSM alcohol abusers/dependents 12% alcohol abuse 88% alcohol dependence	Unclear	42.4% alcohol only 47.5% alcohol and another drug
Other addiction	none	7% (n=20) current drug abuse or dependence: 8 = cocaine dependence 3 = cocaine abuse 5 = cannabis dependence 5 = cannabis abuse 4 = opioid dependence	19.5% (n=59) current drug abuse: 29 = cocaine dependence 6 = cocaine abuse 20 = cannabis dependence 5 = cannabis abuse 16 = sedative, hypnotic or anxiolytic dependence 1 = opioid abuse 3 = stimulant dependence 1 = polydrug dependence	not stated	not stated	43.8% cocaine 10.2% illicit drug without alcohol
Intervention	Behavioural Marital Therapy program	Individual Therapy	Counselling for Alcoholics' Marriages (CALM) Project	Alcoholism program	Employee Assistance Programme	Substance abuse programme

Author (year)	O'Farrell (1995[64], 1999,[65] 2000)[61]	O'Farrell (2003)[60]	O'Farrell (2004)[62]	Fals-Stewart (2005)[57]	Maiden (1996,[59] 1997)[58]	Walton (2002)[63]
Duration	8 to 38 sessions Over 2 to 10 months	26 sessions Over 3 months	20 to 22 sessions Over 5 to 6 months	not stated	not stated	unclear
Type of intervention	Complex intervention	Complex intervention modelled on Alcoholics Anonymous/12 step programme	Complex intervention	Complex intervention modelled on 12 step programme	Complex intervention	not stated
Content	6-10 weekly Conjoint sessions for each couple 10 weekly Couples group sessions Antabuse Contract NB: 32% (n=28) couples received an additional 15 relapse prevention sessions	Intake assessment Physical examination 8 individual therapy session 16 group therapy sessions NB: Treatment program policy for patients with domestic violence problems is to refer these patients to a community batterers clinic program – 1.7% n=5) were referred	10-12 weekly 1 hour initial conjoint pre-group sessions with each couple 10 weekly 2 hour couples group sessions Daily Sobriety Contract, included taking Antabuse, 12-step meetings 76% = Antabuse 77% = attended at least 1 12-step meeting	12 weeks Weekly individual and group counselling, to encourage participants to engage in self-help meetings. Partner violence was only discussed if the issue was raised in the context of the group or individual treatment. Patients who reported engaging in abuse were referred to domestic violence treatment programme after completion of intervention	not stated	3-7 day overnight stay followed by intensive outpatient care Intensive outpatient care: (9am-5pm, 5 days per week) to weekly 1 hour sessions

Author (year)	O'Farrell (1995[64], 1999,[65] 2000)[61]	O'Farrell (2003)[60]	O'Farrell (2004)[62]	Fals-Stewart (2005)[57]	Maiden (1996,[59] 1997)[58]	Walton (2002)[63]
Number of sessions	Basic program: 16-20 Enhanced program 16-20 + 15 Basic program: 8 to 38 BMT sessions, mean=21, S.D.=7.37, median=18 1 couple received 38 2 couples received 37 85% received at least 15 sessions 8 sessions = 1 10 sessions = 1 11 sessions = 5 13 sessions = 3 14 sessions = 2	26 sessions over 12 weeks Average number of sessions receive 20.2 [6.7] 200/301 (66.4%) completed 4 individual therapy sessions and 12 group therapy sessions – minimum number of sessions needed to be considered by the clinic's policy as having been meaningfully engaged in treatment	20-22 weekly sessions over 5-6 months 74% received 12 or fewer sessions 17% = 13-16 sessions 5% = 17-20 sessions 4% = >20 sessions Average 17.6 [6], Median 18	not stated	46% [n=37] – intensive outpatient treatment after completing detoxification 68% [n=55] – treatment begun with detoxification, continued outpatient or additional inpatient treatment 62% - received inpatient treatment from 6 to more than 28 days 80 reported having been through alcoholism abuse treatment from 1 to 4 times, median = 1 33% experienced relapse, and entered second time	not stated
Length per session	not stated	not stated	1 hour individual couple and 2 hour group couple	not stated	not stated	not stated

Author (year)	O'Farrell (1995[64], 1999,[65] 2000)[61]	O'Farrell (2003)[60]	O'Farrell (2004)[62]	Fals-Stewart (2005)[57]	Maiden (1996,[59] 1997)[58]	Walton (2002)[63]
Administered by	not stated	11 therapists – state certified alcoholism counsellors, 5 recovering alcoholics with high school diploma or GED, 3 had Bachelor's degree, 3 had Master's degree Average 33 years old [3.9], with 6.9 years [2.8] experience treating alcoholic patients 7 were women	15 therapists (9 women). Followed a session by session treatment manual. Therapist training consisted 1 day workshop followed by observing or doing cotherapy for at least 1 case with O'Farrell or state certified social worker with extensive experience treating couples and alcoholism. Social worker trained in intervention for 1 year by researcher before becoming the clinical supervisor. Therapists were supervised weekly for 1 hour by researcher or supervisor	not stated	not stated	not stated

Author (year)	O'Farrell (1995[64], 1999,[65] 2000)[61]	O'Farrell (2003)[60]	O'Farrell (2004)[62]	Fals-Stewart (2005)[57]	Maiden (1996,[59] 1997)[58]	Walton (2002)[63]
Additional treatment	not stated	14 patients sought additional treatment: 1 session = 6 3 sessions = 3 4 sessions = 2 5 sessions = 1 11 sessions = 1 14 sessions = 1	not stated	not stated	90% [n=73] attended AA, 72% had a sponsor (28% attended but no sponsor) 53.7% - 2 to 3 times per week 24% - at least once a week 10% - attended 4 or more times per week 72% attending – contact with sponsor from at least 1 to more than 4 times per week 5% - contacted sponsor less than 1 per week 13.7% - no recent contact with sponsor	not stated
Outcomes	Conflict Tactics Scale (marital violence measure) – questionnaire	Conflict Tactics Scale (Verbal aggression and violence subscales)	Conflict Tactics Scale (Verbal aggression and violence subscales)	Conflict Tactics Scale (Verbal aggression and violence subscales)	Conflict Tactics Scale (verbal abuse, physical violence)	Conflict Questionnaire (violence pre-treatment and post-treatment)
Who was assessed?	Alcoholic and wife	Alcoholic and wife	Alcoholic and wife	Alcoholic and wife	Alcoholic	All participants

Author (year)	O'Farrell (1995[64], 1999,[65] 2000)[61]	O'Farrell (2003)[60]	O'Farrell (2004)[62]	Fals-Stewart (2005)[57]	Maiden (1996,[59] 1997)[58]	Walton (2002)[63]
What was assessed?	Prevalence and frequency of violence	Prevalence and frequency of violence	Prevalence and frequency of violence	Actual scores on scale	Prevalence and frequency of violence	Prevalence of violence
When assessed baseline?	12 months prior to intervention	12 months prior to intervention	12 months prior to intervention	Pre-treatment	Prior to treatment	2 years post-treatment
When assessed post-intervention	1 and 2 years post intervention	1 year post intervention	1 and 2 years post intervention	After 12 weeks	Post treatment, at least 6 months of treatment	2 years post-treatment

Appendix 18. Conflict Tactics Scale

1. Modified Conflict Tactics Scale
This scale is divided into five main domains – physical assault, sexual coercion, injury, psychological aggression and negotiation. Each domain is subdivided into minor or severe events.

Instruction:
This is a list of things that may occur when you have differences with your partner. Please tick the number of times you did each of these things in the past year. For each item listed, if you have not done this in the past year, but it has happened before that, please tick "7".

Scale (How often did this happen?):
0 = has never happened
1 = once in the past year
2 = twice in the past year
3 = 3-5 times in the past year
4 = 6-10 times in the past year
5 = 11-20 times in the past year
6 = more than 20 times in the past year
7 = not in the past year, bur it did happen before

Table 41. Modified Conflict Tactics Scale Questionnaire*

Domain	Scale for number of times:							
	0	1	2	3	4	5	6	7
Physical assault: Minor								
I threw something at my partner that could hurt								
I twisted my partner's arm or hair								
I pushed or shoved my partner								
I grabbed my partner								
I slapped my partner								
Physical assault: Severe								
I used a knife or gun on my partner								
I punched or hit my partner with something that could hurt								
I choked my partner								
I slammed my partner against a wall								
I beat up my partner								
I burned or scalded my partner on purpose								
I kicked my partner								
Sexual Coercion: Minor								
I made my partner have sex without a condom								
I insisted on sex when my partner did not want to (but did not use physical force)								
I insisted my partner have oral or anal sex (but did not use physical force)								
Sexual Coercion: Severe								
I used force (like hitting, holding down, or using a weapon) to make my partner have oral or anal sex								
I used force (like hitting, holding down, or using a weapon) to make my partner have sex								

Domain	Scale for number of times:							
	0	1	2	3	4	5	6	7
I used threats to make my partner have oral or anal sex								
I used threats to make my partner have sex								
Injury: Minor								
I had a sprain, bruise, or small cut because of a fight with my partner								
I felt physical pain that still hurt the next day because of a fight with my partner								
Injury: Severe								
I passed out from being hit on the head by my partner in a fight								
I went to a doctor because of a fight with my partner								
I needed to see a doctor because of a fight with my partner, but I didn't								
I had a broken bone from a fight with my partner								
Psychological aggression: Minor								
I insulted or swore at my partner								
I shouted or yelled at my partner								
I stomped out of the room or house or yard during a disagreement								
I did something to spite my partner								
Psychological aggression: Severe								
I called my partner fat or ugly								
I destroyed something belonging to my partner								
I accused my partner of being a lousy lover								
I threatened to hit or throw something at my partner								
Negotiation: Emotional								
I showed my partner I cared even though we disagreed								
I showed respect for my partner's feelings about an issue								
I said I was sure we could work out a problem								
Negotiation: Cognitive								
I explained my side of a disagreement to my partner								
I suggested a compromise to a disagreement								
I agreed to try a solution to a disagreement my partner suggested								

Adapted from Strauss et al (1996)[88]

2. Original Conflict Tactics Scale

Table 42. Original Conflict Tactics Scale*

Reasoning
A. Discussed an issue calmly
B. Got information to back up your side of things
C. Brought in, or tried to bring in, someone to help settle things
Verbal aggression
D. Insulted or swore at him/her
E. Sulked or refused to talk about an issue
F. Stomped out of the room or house or yard
G. Cried (this item is not scored)
H. Did or said something to spite him/her
I. Threatened to hit or throw something at him/her
J. Threw or smashed or hit or kicked something
Minor violence
K. Threw something at him/her
L. Pushed, grabbed, or shoved him/her
M. Slapped him/her
Severe violence
N. Kicked, bit or hit him/her with a fist
0. Hit or tried to hit him/her with something
P. Beat him/her up
Q. Choked him/her
R. Threatened him/her with a knife or gun
S. Used a knife or fired a gun

* Adapted from Strauss et al (1996)[88]

Appendix 19. Cost data for economic analysis

From the National Health Service (NHS) perspective:

Table 43. Economic analysis NHS cost data*

Comparable crime category	Domestic violence incident	Prevalence comparable with types of domestic violence costs available	Proportion	NHS Cost / DV incident	NHS Cost / DV incident
Homicide	Domestic homicide	125	0.00011	670	0.07
Serious wounding	Choked, strangled, used a weapon	95,000	0.08651	9,623	823.49
Rape and assault by penetration	Rape and assault by penetration	37,000	0.03369	781	26.31
Other wounding	Kicked, bit, hit with a fist	382,000	0.34786	1,113	387.17
Common assault	Pushed, held down, slapped	584,000	0.53182	332	176.56
Total		1,098,125	1		1,413.60

* Adapted from Walby (2004)[17]

From the Criminal Justice System (CJS) perspective:

Table 44. Economic analysis CJS cost data*

Comparable crime category	Domestic violence incident	Prevalence comparable with types of domestic violence costs available	Proportion	CJS Cost / DV incident	CJS Cost / DV incident
Homicide	Domestic homicide	125	0.000069	118,299	8.16
Serious wounding	Choked, strangled, used a weapon	95,000	0.053128	9,127	484.90
Sexual offences	Rape and assault by penetration	63,000	0.035232	3,837	135.19
Other wounding	Kicked, bit, hit with a fist, threatened to kill, threatened with weapon, stalking	1,046,000	0.584970	1,000	584.97
Common assault	Pushed, held down, slapped	584,000	0.326599	215	70.22
Total		1,788,125	1		1,283.44

* Adapted from Walby (2004)[17]

Appendix 20. Sensitivity analyses

1. From the NHS perspective using the base case scenario and changing the effectiveness of counselling intervention

Table 45. Sensitivity analysis, counselling intervention completely effective, relative risk (RR) = 0

	BENEFITS	COSTS (£)					ICER
	DV victims per 100 subjects	NHS treatment cost / DV victim	Total NHS treatment cost for victims	Cost of intervention / subject	Cost of intervention for 100 subjects	Total cost	
Intervention (I)	0	1,413.60	0	2,550	255,000	255,000	---
Control (C)	51	1,413.60	72,093.60	0	0	72,093.60	---
Difference I – C	51 (Net benefit)	---	-72,093.60	---	---	182,906.40	£3,586.40 / DV victim treatment avoided

2. From the NHS perspective using the base case scenario and changing the cost of counselling intervention

Table 46. Sensitivity analysis, at 10 sessions, cost is £1500

	BENEFITS	COSTS (£)					ICER
	DV victims per 100 subjects	NHS treatment cost / DV victim	Total NHS treatment cost for victims	Cost of intervention / subject	Cost of intervention for 100 subjects	Total cost	
Intervention (I)	22	1,413.60	31,099.20	1,500	150,000	181,099.20	---
Control (C)	51	1,413.60	72,093.60	0	0	72,093.60	---
Difference I – C	29 (Net benefit)	---	-40,994.40	---	---	109,005.60	£3,758.81 / DV victim treatment avoided

Table 47. Sensitivity analysis, at 3 sessions, cost is £450

	BENEFITS	COSTS (£)					ICER
	DV victims per 100 subjects	NHS treatment cost / DV victim	Total NHS treatment cost for victims	Cost of intervention / subject	Cost of intervention for 100 subjects	Total cost	
Intervention (I)	22	1,413.60	31,099.20	450	45,000	76,099.20	---
Control (C)	51	1,413.60	72,093.60	0	0	72,093.60	---
Difference I – C	29 (Net benefit)	---	-40,994.40	---	---	4,005.60	£138 / DV victim treatment avoided

Table 48. Sensitivity analysis, at 2 sessions, cost is £300

	BENEFITS	COSTS (£)					ICER
	DV victims per 100 subjects	NHS treatment cost / DV victim	Total NHS treatment cost for victims	Cost of intervention / subject	Cost of intervention for 100 subjects	Total cost	
Intervention (I)	22	1,413.60	31,099.20	300	30,000	61,099.20	---
Control (C)	51	1,413.60	72,093.60	0	0	72,093.60	---
Difference I – C	29 (Net benefit)	---	-40,994.40	---	---	-10,994.40	-£379 / DV victim treatment avoided

3. From the NHS and CJS perspectives using the base case scenario and changing the effectiveness of counselling intervention

Table 49. Sensitivity analysis, counselling intervention is completely effective at relative risk (RR) = 0

	BENEFITS	COSTS (£)					ICER
	DV case / 100 subjects	NHS + CJS costs / DV case	Total NHS + CJS cost for DV case	Cost of intervention / subject	Cost of intervention for 100 subjects	Total cost	
Intervention (I)	0	2,697.04	0	2,550	255,000	255,000	---
Control (C)	51	2,697.04	137,549.04	0	0	137,549.04	---
Difference I – C	51 (Net benefit)	---	-137,549.04	---	---	117,450.96	£2.302.96 per DV case avoided

4. From the NHS and CJS perspectives using the base case scenario and changing the cost of counselling intervention

Table 50. Sensitivity analysis, at 10 sessions, cost is £1500

	BENEFITS	COSTS (£)					ICER
	DV case / 100 subjects	NHS + CJS costs / DV case	Total NHS + CJS cost for DV case	Cost of intervention / subject	Cost of intervention for 100 subjects	Total cost	
Intervention (I)	22	2,697.04	59,334.88	1,500	150,000	209,334.88	---
Control (C)	51	2,697.04	137,549.04	0	0	137,549.04	---
Difference I – C	29 (Net benefit)	---	-78,214.16	---	---	71,785.84	£2,475.37 per DV case avoided

Table 51. Sensitivity analysis, at 5 sessions, cost is £750

	BENEFITS	COSTS (£)					ICER
	DV case / 100 subjects	NHS + CJS costs / DV case	Total NHS + CJS cost for DV case	Cost of intervention / subject	Cost of intervention for 100 subjects	Total cost	
Intervention (I)	22	2,697.04	59,334.88	750	75,000	134,334.88	---
Control (C)	51	2,697.04	137,549.04	0	0	137,549.04	---
Difference I – C	29 (Net benefit)	---	-78,214.16	---	---	-3,214.16	-£110.83 per DV case avoided

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