Cognitive-Behavioural Therapy

EVIDENCE BRIEF

Cognitive-Behavioural Therapy (CBT) is a core form of psychological treatment for offenders. CBT has been well researched and shown to reliably reduce reoffending among many groups of offenders. There is substantial potential to increase its provision for young offenders.

OVERVIEW

- Cognitive-Behavioural Therapy is the cornerstone of modern approaches to rehabilitate offenders.
- CBT has been extensively implemented in Corrections for adult offenders. There is strong international and New Zealand evidence that this reduces reoffending.
- There is also strong international evidence that CBT reduces reoffending by young offenders.
- The scope of investment in CBT for young offenders is currently modest, at just over 10% of the level of investment for adult offenders.
- There is strong evidence that expanded investment in CBT for young offenders would reduce crime.
- The health sector also needs trained psychologists and reports there is currently a shortage.
- As a result, expansion would require increasing the number of trained psychologists and other professionals in New Zealand who can deliver CBT.
- In expanding the workforce, appropriate training would be vital as to be effective, CBT needs to be delivered by people with the relevant skills.

INVESTMENT CLASS SUMMARY

Evidence rating:	Strong
Unit cost:	$5,000-$20,000 per person given treatment
Effect size (number needed to treat):	For every 5-15 offenders receiving treatment, one less will reoffend
Current spend:	c.$25m (Corrections) c. $3m (MSD) Unknown (Health)
Unmet demand:	High (young offenders) Low (adults)

New Zealand Police Nga Pirihimana O Aotearoa
Ministry of Justice Tāhū o te Ture
Department of Corrections Ara Poutama Aotearoa

DOES COGNITIVE-BEHAVIOURAL THERAPY REDUCE CRIME?

Cognitive-Behavioural Therapy (CBT) is a broad class of interventions that attempt to restructure thoughts and beliefs that lead to problem behaviours.[i] Among offenders, CBT is used to challenge and restructure antisocial cognitions, beliefs and attitudes that contribute to their offending.

International evidence

It has been known for at least 25 years that CBT for offenders reliably reduces reoffending.[ii] A large number of meta-analyses repeat this basic conclusion. CBT reduces reoffending among:

- adult offenders[iii]
- young offenders[iv]
- men and women[v]
- general offenders[vi], violent offenders[vii] and sexual offenders[viii]
- alcohol and drug using offenders[ix]
- offenders of various ethnicities (in a Canadian context).[x]

New Zealand Evidence

Most correctional rehabilitation programmes in New Zealand are based on CBT. These programmes are evaluated each year and typically demonstrate statistically significant reductions in reconviction. The latest results from Corrections (for the 2014/15 financial year) are summarised in the following table.

Programme	Percentage point reduction in reconviction in 12 months (RQ)	Offenders needing to complete programme to prevent one from being reconvicted within 12 months
Special treatment unit for violent offenders (prison)	17.1**	6
Medium Intensity Programme (community)	9.8*	10
Young offender programme (prison)	6.7	15
Kowhiritanga (prison)	6.4*	16
Mauri Tu Pae (prison)	5.7	18
Short motivational programme (prison)	5.7*	18
Short motivational programme (community)	4.7	21
Medium Intensity Programme (prison)	4.2*	24

* statistically significant at a 90% threshold

** statistically significant at a 95% threshold

Internal Corrections research has separately examined the effect of these programmes for Māori prisoners and has found them to be just as effective for Māori as for non-Māori.

Some of these results have also been published in peer-reviewed journals and other public forums.[xi]

The CBT programmes provided or funded by the Ministry of Social Develpment and the Health sector in New Zealand have not been evaluated.

WHEN IS COGNITIVE-BEHAVIOURAL THERAPY MOST EFFECTIVE?

Programme type

Various types of CBT are each effective at reducing reoffending, including:

- Moral Reconation Therapy[xii]
- Reasoning and Rehabilitation[xiii]
- Aggression Replacement Training[xiv]
- Relapse prevention[xv]
- Dialectical behaviour therapy[xvi]
- CBT-informed anger management[xvii]

The evidence for the various types of CBT is equally strong.[xviii] The only exception is that there is not yet sufficient evidence to conclude that Rational Emotive Behaviour Therapy is effective.[xix]

Programme design and implementation

Meta-analyses report that CBT is more effective at reducing reoffending when:

- Higher intensity programmes are offered to higher risk offenders.[xx]
- Programmes target factors such as substance abuse that are related to offending, and interventions are modified to meet the learning style of the offenders involved.[xxi]
- The treatment involves individualised one-on-one treatment in addition to group sessions.[xxii]
- The treatment involves training in techniques for maintaining self-control and identifying triggers that arouse anger.[xxiii]
- The treatment involves activities and exercises aimed at recognising and modifying the distortions and errors that characterise criminogenic thinking.[xxiv]
- For school-based CBT, the intervention is provided across the whole school or classroom rather than to targeted individuals.[xxv]

Programme integrity is also very important. Factors such as clinical supervision of treatment delivery are associated with greater effectiveness.[xxvi] Tools such as the Correctional Program Assessment Inventory have been developed to help people involved in delivering CBT ensure they are considering issues such as:

- the quality of the training given to those delivering the programme
- the programme goals and objectives
- the approach to matching the programme with the learning style of the participants.[xxvii]

Programme location

The evidence is mixed about whether CBT programmes are more effective in the community or in institutions. There are meta-analyses that conclude that services are more effective in the community, [xxviii] more effective in institutions, [xxix] and equally effective in either context.[xxx] A reasonable conclusion from this evidence is that CBT can be made to work in any context so long as it is delivered in accordance with principles of programme integrity.

Programme participants

CBT has been extensively studied for young offenders in particular and has been shown to be very effective for this group. In his comprehensive meta-analysis, Mark Lipsey found that Cognitive-Behavioural Treatment had a larger effect on reoffending than any other intervention type for young offenders, although mentoring was not far behind.[xxxi]

Participant motivation

CBT is more effective when offenders are motivated to participate, and less effective when offenders are mandated into treatment.[xxxii] For offenders who are unmotivated, a separate preliminary intervention called Motivational Interviewing can be used. There is good international[xxxiii] and New Zealand evidence[xxxiv] that Motivational Interviewing increases offenders' willingness to participate in CBT.

What makes cognitive-behavioural therapy effective?

Compared to many other crime prevention investments, a reasonable amount is known about what make CBT effective.

CBT is based on social learning theory, which is one of the explanations about the causes of crime that has the strongest empirical support.[xxxv] Social learning theory describes a process whereby people can adopt anti-social attitudes and beliefs and have these beliefs reinforced by association with peers and others who share these beliefs.

These antisocial beliefs and attitudes can lead to criminal behaviour. For example, offenders often are quick to perceive harmless situations as threats, and to believe that violence is necessary to maintain social status.[xxxvi]

CBT aims to reverse this learning process by engaging offenders in a process to change the way they think about themselves and the world. CBT programmes seek to teach offenders to self-monitor their own thinking, and to correct biased, risky or deficient thinking patterns.[xxxvii]

In CBT, offenders are also taught thinking and behavioural skills to help them manage problematic emotional states such as anger, and increase their capacity for self-control.

WHAT OTHER BENEFITS DOES COGNITIVE-BEHAVIOURAL THERAPY HAVE?

Health and behavioural outcomes

CBT has been successfully used to address to a wide range of problem behaviours and health conditions. A 2012 review by the National Institutes of Health in the United States summarised the results of 269 meta-analyses examining the effect of CBT on various outcomes.[xxxviii]

According to this review, CBT has been demonstrated to:

- reduce substance abuse
- support smoking cessation
- reduce problem gambling
- reduce the impact of chronic pain
- mitigate the symptoms of schizophrenia, bipolar disorder, PTSD, OCD, bulimia, insomnia, depression, anxiety and general stress
- reduce anger and aggression.

Other outcomes such as employment, earnings and benefit receipt

We were unable to find any evidence investigating a link between CBT and other outcomes such as employment, earnings and benefit receipt.

CURRENT INVESTMENT IN NEW ZEALAND

Department of Corrections

The Department of Corrections provides a range of different treatments based on CBT, both in prison and the community. Total investment is about $25m per year. These treatment options are listed below.

Special treatment units: High intensity treatment programmes are provided by psychologists for people who are at highest risk of violence or sexual re-offending. These prison-based, therapeutic community environments are offered in six special treatment units. These programmes include intensive reintegration and safety planning for release. Two of the units provide treatment for child sex offenders, while the other four provide treatments for violent and adult sex offenders.

Medium intensity rehabilitation programme: The medium intensity rehabilitation programme is for male offenders with a medium risk of re-offending. It teaches participants new skills about how to alter the thoughts, attitudes and behaviour that led to their offending, and assists them to develop strategies for maintaining their positive changes.

Motivational programmes: The short motivational programme is designed to improve offenders' motivation to understand their offending and increase their interest in engaging with other interventions that will reduce their likelihood of re-offending.

Young offenders programme: The young offenders programme is a rehabilitative programme for prisoners under the age of 20. It teaches skills about how to change attitudes and behaviours.

Kowhiritanga (for female offenders): Kowhiritanga is a group-based programme for female offenders with identified rehabilitation needs. It targets the attitudes and behaviours that contributed to their offending and teaches skills and new ways of thinking.

Mauri Tu Pae: A group-based programme Mauri Tu Pae (formerly known as the Maori therapeutic programme) is delivered in Maori focus units nationally. It's for male prisoners with a range of offending needs and teaches prisoners skills to alter the thoughts, attitudes and behaviours that led to their offending.

Psychological treatment: This one-on-one intervention primarily deals with high risk sexual and violent offenders. Psychologists provide specialist advice, assessment, and treatment to reduce an offender's risk of re-offending.

Ministry of Social Development

There is substantial room to expand the use of CBT for young offenders, as it is currently used only for a small number each year.

MSD provides CBT as part of its residential programme for young offenders sentenced to a youth justice facility for a serious crime. Fewer than 100 young offenders per year receive this service, and the cost is not separately reported from the total cost of the residential placement.

MSD also funds CBT for about 300 young people per year who have committed sexual offences or who are at risk of sexual offending. These programmes are provided by specialist providers such as SAFE, at a total cost of $2.7m, or between $5,000 and $20,000 per young person.

CBT is also part of treatments such as Multi-Systemic Therapy. For more information on these, see the evidence brief on family-based interventions for adolescents.

Health sector

CBT is extensively provided in the Health sector, though not typically for offenders. At a national level, statistics about the use of CBT are not

available as decisions about what type of therapy to offer are made at a local level.

The Ministry of Health advises that mental health services are under significant demand pressure so there would be very limited scope to shift their focus towards reducing offending. There is also a rather limited CBT-trained workforce so expanding it would take time.

EVIDENCE RATING AND RECOMMENDATIONS

Each evidence brief provides an evidence rating between Poor and Very Strong.

Poor	Robust evidence that investment does not reduce crime or increases crime
Speculative	Little or conflicting evidence that investment can reduce crime
Fair	Some evidence that investment can reduce crime
Very Promising	Robust international *or* local evidence that investment tends to reduce crime
Strong	Robust international *and* local evidence that investment tends to reduce crime
Very Strong	Very robust international and local evidence that investment tends to reduce crime

According to the standard criteria for all evidence briefs[1], the appropriate evidence rating for Cognitive-Behavioural Therapy is Strong.

This rating reflects that the international research base shows consistent positive results, supported by reliable local evidence that we have been able to deliver reductions in recidivism in a New Zealand setting.

As per the standard definitions of evidence strength outlined in our methodology, the interpretation of this evidence rating is that:

- there is robust international and local evidence that the investment tends to reduce crime
- the investment is likely to generate a return if implemented well
- this investment type could benefit from additional evaluation to confirm investment is delivering a positive return and to support fine-tuning of the investment design.

A successful high-quality randomised controlled trial of treatment on crime outcomes in New Zealand would raise the evidence rating to Very Strong.

The evidence base for CBT for young offenders is particularly strong.[xxxix] Given that offending peaks in the teenage years and that many young offenders go on to have extensive criminal careers, there is a clear strategic and economic case for further investment in CBT for young offenders.

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[1] Available at http://www.justice.govt.nz/justice-sector-policy/key-initiatives/investment-approach-to-justice/what-works-to-reduce-crime/

FIND OUT MORE

Web

http://www.justice.govt.nz/justice-sector-policy/key-initiatives/investment-approach-to-justice/

Email

investmentapproach@justice.govt.nz

Recommended reading

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[ii] Izzo and Ross 1990
[iii] Allen et al 2001, Landenberger and Lipsey 2005, Lipsey et al 2007
[iv] Izzo and Ross 1990, Dowden and Andrews 1999a, McCart et al 2006, Armelius and Andreasson 2007, Garrido et al 2007, Lipsey 2009, Koehler et al 2013, although Kim et al 2013 is alone is finding no effect
[v] Dowden and Andrews 1999b, Gobeil et al 2016
[vi] Supra notes ii-v
[vii] Dowden and Andrews 2000, Garrido et al 2007
[viii] See the evidence brief on sex offender treatment for more detail
[ix] See the evidence brief on AOD treatment for more detail
[x] Usher and Stewart 2012
[xi] Bakker and Riley 1993, Bakker and Riley 1996, Polaschek et al 2005, Polaschek 2011
[xii] Allen et al 2001, Little 2005, MacKenzie 2006, Fergusson and Wormith 2012
[xiii] Allen et al 2001, MacKenzie 2006 Tong and Farrington 2008
[xiv] Lee et al 2012
[xv] Dowden et al 2003
[xvi] Frazier and Vela 2014
[xvii] Henwood et al 2015
[xviii] Landenberger and Lipsey 2005
[xix] Debidin and Dryden 2011
[xx] Andrews and Bonta 1990, Landenberger and Lipsey 2005, Andrews and Dowden 2006, Gendreau et al 2006, Lipsey et al 2007, Lipsey 2009
[xxi] Andrews et al 1990, Dowden et al 2003, Gendreau et al 2006
[xxii] Landenberger and Lipsey 2005
[xxiii] Landenberger and Lipsey 2005
[xxiv] Landenberger and Lipsey 2005
[xxv] Barnes et al 2014
[xxvi] eg Dowden and Andrews 2004, Andrews and Dowden 2005
[xxvii] Miceli 2009
[xxviii] Izzo and Ross 1990
[xxix] Fergusson and Wormith 2012
[xxx] Tong and Farrington 2008, Lipsey 2009
[xxxi] Lipsey 2009
[xxxii] Parhar et al 2008
[xxxiii] McMurran 2009
[xxxiv] Austin et al 2011
[xxxv] Pratt et al 2010
[xxxvi] Lipsey et al 2007
[xxxvii] Lipsey et al 2007
[xxxviii] Hofmann et al 2012
[xxxix] Lipsey and Cullen 2007

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SUMMARY OF EFFECT SIZES FROM META-ANALYSES

Meta-analysis	Treatment type/population	Outcome measure	Reported average effect size	Number of estimates meta-analysis based on	Percentage point reduction in offending (assuming 50% untreated recidivism)	Number needed to treat (assuming 50% untreated recidivism)
Illescas et al 2001	CBT (Europe)	Reoffending	r=0.226*	3	0.2	5
Dowden and Andrews 1999b	Female offenders	Reoffending	Φ=0.17 (NS)	24	0.15	7
Dowden et al 2003	Relapse prevention	Reoffending	r=0.15*	40	0.13	7
Fergusson and Wormith 2012	Moral Reconation Therapy	Reoffending	r=0.16*	33	0.14	7
Henwood et al 2015	CBT-based anger management for adult male offenders	Violent reoffending	RR=0.72*	7	0.14	7
Koehler et al 2013	CBT for young offenders (Europe)	Reoffending	OR=1.73*	11	0.13	7
Lee et al 2012	Aggression Replacement Training for young offenders	Crime	d=0.51(NS)	4	0.13	7
MacKenzie 2006	Moral reconation therapy	Reoffending	OR=1.8*	4	0.14	7
McCart et al 2006	CBT for youth	Aggression and delinquency	d=0.35*	41	0.15	7
Wilson et al 2005	CBT	Reoffending	d=0.32*	11	0.14	7
Garrido et al 2007	Young offenders within institutions	Reoffending	OR=1.621*	7	0.12	8
Lipsey 2009	CBT for young offenders	Reoffending	Φ=0.133(NR)	14	0.12	8
Pearson et al 2002	CBT	Reoffending	r=0.144*	44	0.13	8
Usher and Stewart 2014	CBT	Reoffending	OR=1.65*	21	0.12	8
Henwood et al 2015	CBT-based anger management for adult male offenders	General reoffending	RR=0.77*	7	0.11	9
Armelius and Andreasson 2007	Young offenders in custody	Crime	NNT=10*	12	0.1	10
Barnes et al 2014	School-based CBT	Aggression	d=0.23(NS)	25	0.1	10
Landenberger and Lipsey 2005	CBT	Reoffending	OR=1.53*	58	0.1	10
Lipsey et al 2007	CBT	Reoffending	OR=1.53*	58	0.1	10
Dowden and Andrews 1999a	Young offenders	Reoffending	Φ=0.09*	229	0.08	12
Gobeil et al 2016	Female offenders	Reoffending	OR=1.31*	13	0.07	15
MacKenzie 2006	Reasoning and Rehabilitation	Reoffending	OR=1.3*	8	0.07	15

Meta-analysis	Treatment type/population	Outcome measure	Reported average effect size	Number of estimates meta-analysis based on	Percentage point reduction in offending (assuming 50% untreated recidivism)	Number needed to treat (assuming 50% untreated recidivism)
Dowden and Andrews 2000	All correctional rehab	Violent reoffending	Φ=0.07*	52	0.06	16
Lee et al 2012	CBT for adults	Crime	d=0.14*	38	0.06	16
Tong and Farrington 2008	Reasoning and Rehabilitation	Reoffending	OR=1.16*	32	0.04	27
Kim et al 2013	CBT for young offenders	Reoffending	Φ=-0.05 (NR) (i.e. offending lower for control group)	12	-0.02 (harm-causing)	-44 (harm-causing)

* Statistically significant at a 95% threshold

OR=Odds ratio

d=Cohen's d or variant (standardised mean difference)

Φ=phi coefficient (variant of correlation coefficient)

NA=Not applicable (no positive impact from treatment or non-offending measure)

NNT=Number needed to treat

NS: Not significant

NR: Significance not reported

RR: Risk Ratio