The Cool Teens CD-ROM

A multimedia self-help program for adolescents with anxiety

The Cool Teens CD-ROM has been developed as a self-help treatment option for young people with anxiety. It is a home-based cognitive behavioural therapy program that helps users to develop skills to cope better with the negative feelings associated with anxiety, such as fear, worry, nervousness or shyness. It has been designed for 14- to 18-year-olds and uses a combination of media (text, audio, illustrations, cartoons and live video) to deliver information, examples, activities and exercises. The program is being evaluated for its ability to reduce the symptoms and life interference caused by anxiety.

by

Mike Cunningham
Ronald Rapee &
Heidi Lyneham

Anxiety is one of the most common mental disorders in young people and can produce marked interference in their lives. Australia has been responsible for the development of several efficacious treatment programs (for example, Barrett, Dadds & Rapee 1996; Rapee 2000), but many young people still do not access mental health care services for problems such as anxiety (Sawyer et al. 2000). Since it has recently been suggested that adolescents may benefit from "creative and innovative approaches" (Department of Health & Ageing 2004), a team at Macquarie University's Anxiety Research Unit (MUARU) has developed the Cool Teens program. This is a self-help multimedia CD-ROM designed specifically for adolescents with anxiety. This program aims to provide a new therapy option for many young people who might not otherwise receive professional help. It is hoped that its availability will increase access to services, particularly in rural and remote areas.

Anxiety in adolescence

Anxiety disorders have been reported to affect around 10% of adolescents (Costello et al. 2003). If left untreated, anxiety can cause personal suffering and academic underperformance, and can interfere with interpersonal issues, such as relationships or socialising (Kendall et al. 2000). It can also increase a person's risk of developing depression and of having a continuing problem with anxiety in their adult life (Pine et al. 2002).

Types of anxiety

There are several different forms that anxiety can take in young people (MUARU 2005). The two most common types in adolescents are Social Phobia and Generalised Anxiety Disorder. People with Social Phobia are often extremely shy and withdrawn and worry a great deal about what others think of them. They may avoid social situations, including parties, sporting events, buying items at shops or even answering the telephone. They often have difficulty making friends. People with Generalised Anxiety Disorder are excessive worriers. They worry about many different areas of their lives, including schoolwork, competition, family and any new situations they encounter. They often ask repeatedly for reassurance and experience physical symptoms. Other less common types of anxiety that occur in this age group are panic disorder, fear of separation, obsessive-compulsive disorder and post-traumatic stress. Many young people with anxiety show features of several of these types of anxiety and they may also have related problems, such as relationship issues, difficulties with schoolwork or depression.

Symptoms of anxiety

Anxiety becomes a problem when it is severe enough to cause interference in a person's life. Although it can be difficult to identify, there are some common behaviours that a person with this problem may exhibit (Figure 1) (MUARU 2005). There are several options for young people who want advice or help. These include school counsellors, family doctors, community health centres, research centres such as MUARU, or web sites and phone lines such as Reach Out! and Kids Help Line.

CBT programs for anxiety

Cognitive behavioural therapy (CBT) is a technique used to treat various psychological conditions. It helps people to challenge and change the negative thinking (cognition) or behaviour patterns (e.g. avoidance, safety) that are often present in an anxiety disorder. Many CBT programs have been used with adolescents who have anxiety, and this method of therapy is now viewed as an efficacious treatment option (James, Soler & Weatherall 2005). CBT programs have been shown to significantly reduce symptoms

(Kendall 1994; Barrett, Dadds & Rapee 1996) and the improvements gained have been shown to be maintained up to as much as six years later (Barrett et al. 2001). Although efficacious programs exist, a common problem is that they are delivered in specialised clinics and research settings not in general community settings. For several years, MUARU has been looking for better ways to disseminate validated treatments. This was done initially by reducing the duration of therapy and by using a group approach rather than offering individual face-to-face therapy (Rapee 2000). More recently a bibliotherapy (treatment delivered using books and worksheets) program was developed to allow parents to access skills to help their anxious child without therapist involvement (Lyneham & Rapee in press). However, providing accessible treatment to adolescents presents another challenge.

What stops young people getting help?

Adolescence is a time of increasing independence, and attracting this age group to traditional therapy can be difficult. Sawyer et al. (2000) report that only 29% of young people who had a mental health problem had been in contact with a professional service in a 12-month period. There are many possible reasons for this low treatment access rate, including stigma; lack of confidentiality; cost; therapy and therapist availability; appropriateness of treatment materials; geographic remoteness; and GP knowledge, attitudes to young people or understanding of their needs (NSW Association for Adolescent Health 2005; Booth et al. 2004). The Department of Health and Ageing (2004) suggests that young people may require "treatment approaches that transcend many existing service boundaries" (p.III).

How can computer-based CBT help?

Computer-based therapy works by delivering a series of interactive sessions covering background information on the disorder, identification of problem areas, and skills and techniques to help manage these problems. Computer programs have been shown to be clinically efficacious for various forms of anxiety in adults, for example, panic disorder and phobia (Gilroy et al. 2000; Richards, Klein & Carlbring 2003; Schneider et al. 2005). In addition, two programs aimed

FIGURE 1 Behaviours that may suggest the presence of anxiety when they are common (MUARU 2005)

- Asking many unnecessary questions and requiring constant reassurance
- getting upset when a mistake is made or if there is a change of routine
- being a loner or restricting themselves to a small group of safe people
- rarely volunteering to ask questions or give comments
- becoming sick when performances are necessary
- having poor social skills or refusing to participate in social activities
- expressing worries about "bad things" happening
- having worries about school at the beginning of each term or week
- avoiding unfamiliar situations
- being perfectionistic
- having difficulty getting to sleep or waking during the night
- having regular headaches or stomach aches that have no medical cause
- being argumentative (if trying to avoid a feared situation)
- being pessimistic (easily identifying what may go wrong in a situation).
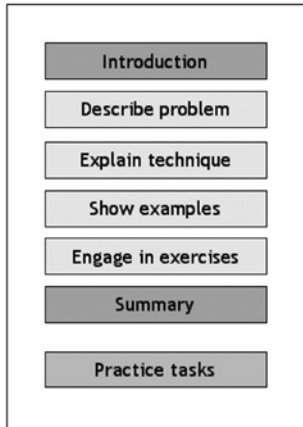
"I'm always worrying about stuff – my friends have always called me a worrywart. I think if something can go wrong, it will. Are my family OK? Why are my friends late – don't they like me any more? Is my homework correct (I only checked it three times)? I think about the bad things that have happened in the past as well as the ones that will happen in the future … the world is a really dangerous place, there are hundreds of accidents out there just waiting to happen. Sometimes my worries stop me from getting to sleep for hours. It seems to me that I have always been this way but worrying takes so much time and energy, now I even worry that I worry too much!"

primarily at treating depression have also been shown to have positive effects on anxiety levels: MoodGYM (Christensen, Griffiths & Korten 2002) and Beating the Blues (Proudfoot et al. 2003). However, no computer programs have yet been developed and evaluated specifically for anxiety in adolescents. We believe that computer-based delivery has major potential for use with this age group. Increasing numbers of young Australians use the Internet to seek help for mental health problems (Mission Australia 2005; Nicholas et al. 2004) and we think it is reasonable to expect that many of these people would also be receptive to a computer-based therapy option. Computerised self-help allows a degree of personal control and flexibility that is ideal for independent adolescents and it may also be able to help reduce the stigma of receiving therapy for many users. This delivery method may allow wider dissemination of therapy and may therefore be able to improve service access for many young people.

The Cool Teens CD-ROM project

To help meet the current treatment gaps that exist for adolescents with anxiety disorders, a multidisciplinary team at MUARU has developed the Cool Teens CD-ROM (Rapee, Cunningham & Lyneham 2005). The team consisted of two lead clinical psychologists, an instructional designer, a programmer, two graphic artists and a videographer. Content development was further guided by an advisory board of additional psychologists, academics and young people. The Cool Teens CD-ROM is an interactive experience and is primarily an adaptation of existing paper-based therapy materials that have been developed and used successfully for bibliotherapy and group therapy at our research unit (Lyneham et al. 2005; Rapee et al. 2000). The project has four phases:

- development of a prototype program (one module and navigation system)
- prototype evaluation with young people
- development of a full clinical version of the program
- a clinical study to evaluate the efficacy and user acceptability of the program.

Development

For several reasons, one of which is its use of live video, the program has been developed

as a CD-ROM. The software was programmed using Macromedia Flash MX 2004 Professional (2004) and the resulting application is an auto-run CD-ROM for both Windows and Mac operating systems. All the content was created and programmed in a manner that makes migration to an online web site possible if this becomes a delivery preference in the future.

In designing the modules for the program, a model for delivering information about a cognitive behavioural therapy technique was created. Since this model bears similarity to the commonly used Learning Objects in the world of E-Learning (Cisco Systems Inc. 2000), we refer to these components as Therapy Objects (Figure 2). This model provided a framework for the consistent presentation of content and helped guide the development of appropriate multimedia components.

Multimedia components

Text – used to provide overviews and specific information on content topics (stored as .xml files and imported into the Flash application).

Audio – used to provide voiceover instruction and suggestions on how to get the most from the program as well as for narration of content and examples (stored as mp3 files).

Illustrations – static images used to present information and to make the overall presentation more engaging and informative (drawn in Adobe Illustrator).

Live video – various characters used for the engaging presentation of information using a real-life format: the guides (two young presenters who introduce and summarise the content in each module), the characters (six young people who role-play specific anxiety problems), and the experts (two psychologists who provide answers to common questions).

Cartoon sequences – four illustrated characters are used to introduce concepts and examples (created as a sequence of cartoon frames).

Interactive diagrams – used to allow flexible, repeatable user-driven exploration of topics

(animations using a mixture of graphics, text and voiceovers).

Animated flowcharts – used to help clarify the sequences or relationships of content components, for example, a feared event can lead to a negative thought which can then lead to a negative action (animations using a mixture of graphics, text and voiceovers).

Practice task forms – allow users to enter and edit information and also to monitor their progress when they are applying techniques in their everyday lives.

One key aspect of our multimedia development process was the involvement of several young people during content creation. Their input and feedback, especially to a prototype version of the program, allowed us to create materials that are familiar and comfortable to the target age group. A key focus of the program is 'Other people's stories' (for example, see Figure 3). In the first module, the user is introduced to six young people who role-play several anxiety problems. This helps the user to see that other people have similar problems and that they are not alone. These characters are followed through the program. They illustrate examples, provide practice exercises and, towards the end of the program, the user gets to meet them again to see how they have progressed. A very important collaboration for this project has been the involvement of a video director and a group of talented young people who participate in a national television show for young people – Al Ellis and the team from School Torque/Schools Broadcasting Australia Pty. We worked closely with this group to develop the storylines and they acted out and produced all the live video clips for the program.

The Cool Teens CD-ROM

The result of our design and development work is a multimedia CD-ROM (see Figures 4 and 5) consisting of eight modules, with each one taking 15–30 minutes to complete.

Users complete a module every one to two weeks or as an "in and out" treatment when and as needed. The modules are:

FIGURE 4 Example content pages from the Cool Teens CD-ROM
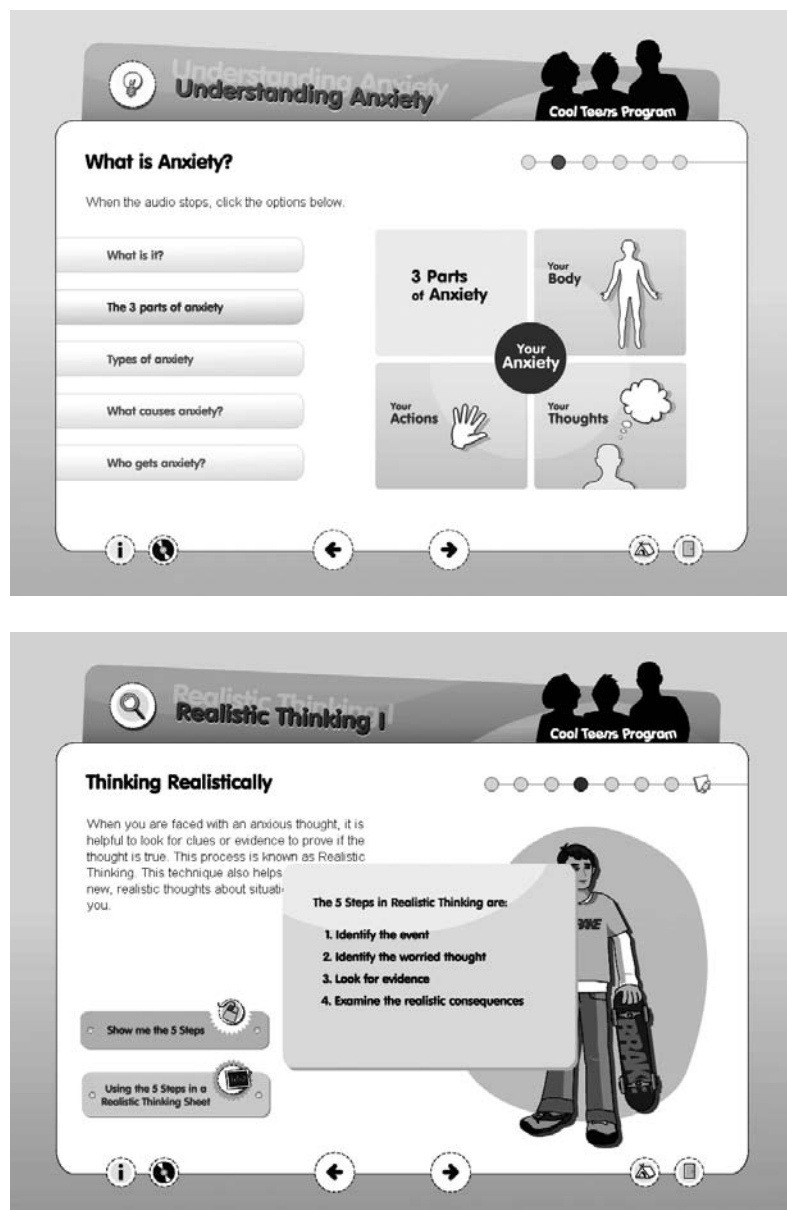
FIGURE 5 Cool Teens CD-ROM user experience flowchart
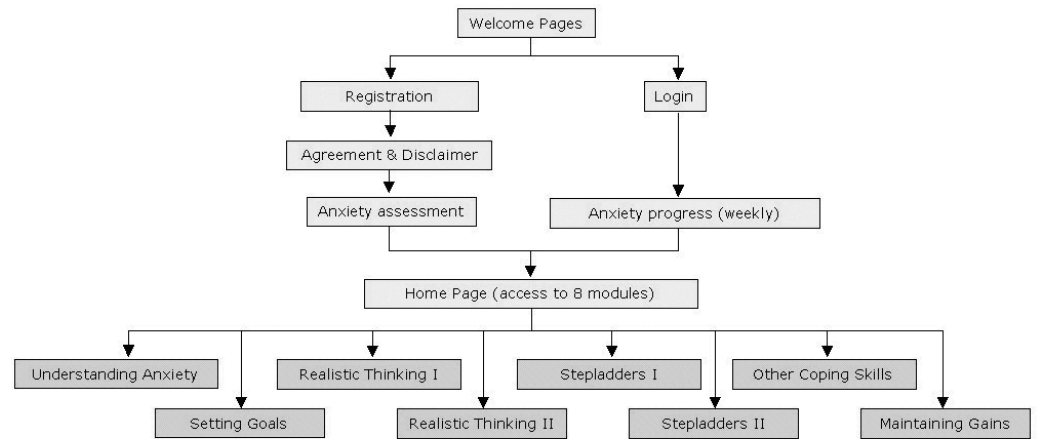
Understanding anxiety – Contains background information on anxiety and introduces the main characters used to present content in the program

Setting goals – Suggests how to get the best results from the program

Realistic thinking I – A technique to help users replace their worried thoughts with realistic, calmer ones

Realistic thinking II – Making this technique easier to use in everyday situations

Stepladders I – A technique to help users face their fears using a step by step approach

Stepladders II – Advanced use of this technique

Other coping skills – Helps the user find strategies for dealing with anxiety, for example, problem-solving, assertiveness

Staying cool – Key tips about preventing future problems with anxiety.

Modules contain information, interactive exercises, hypothetical scenarios and case studies. They also have practice tasks that the user performs outside of the time they spend on the computer program. Users create their own username and password and enter data at various stages of program use. This information is stored in a specific folder on the local hard drive using encryption to provide secure and private access. This data storage allows the user to view a chart of their progress over time (by keeping track of their self-reported ratings of anxiety levels and therapy progress) and is also used to give feedback and motivational messages. A home page provides access to all the modules and to the progress tools. Although users have open access (they can choose the order in which they use modules), they are informed that there is a recommended sequence. The entire program is ideally used over eight to 12 weeks, but individuals will move at their own pace depending on the severity and nature of their problems and other factors, for example, how much time they can dedicate to the practice tasks.

Aims of the program

Our program aims to answer two recent government calls to provide more timely and effective mental health care services that help reduce the current treatment gaps for adolescents (Australian Health Ministers 2003) and to explore technology-based solutions for improving access and reducing treatment barriers for rural and remote communities (Commonwealth Department of Health and Aged Care 2000). The overall goal of the Cool Teens program is to address these issues by providing an effective, accessible, low-cost treatment option for many young people with anxiety who do not currently receive and may be unwilling to access professional help.

Effectiveness study

In early 2006, we started the final phase of the project. This is a three-year clinical study, involving 150 young people with anxiety. The main aim is to evaluate the ability of the Cool Teens program to reduce symptoms and life

interference caused by anxiety. It will also examine how satisfied users are with this method of receiving therapy and other issues, such as whether the computer program helps to increase confidentiality and to reduce stigma.

Future developments

If proven to be effective and acceptable, the program will be implemented into clinical practice at our clinic and will also be made available at low cost regionally and nationally. Thus, once the research is completed, a new therapy option will be available to many young people. This program then has potential for distribution through clinics, family physicians, community health centres, schools or school counsellors.

In addition to the treatment of anxiety, other potential uses of the program will also be explored. It may be beneficial as an early intervention program for sub-clinical or high-risk young people or for universal or school-based anxiety education projects. For example, the introductory psycho-education module ('Understanding anxiety') could be used as a stand-alone tool for increasing mental health literacy and help-seeking rates in young people. Our research also lays the groundwork for the further exploration of self-help computer-based therapy, including studies on the potential cost savings of this delivery method, the identification of the types of young people who are most likely to experience a positive outcome with this treatment method, and the potential integration of email or text messaging for support or for motivation to aid program completion.

References

Australian Health Ministers 2003, *National mental health plan 2003–2008*, Australian Government, Canberra.

Barrett, P.M., Dadds, M.R. & Rapee, R.M. 1996, 'Family treatment of childhood anxiety: A controlled trial', *Journal of Consulting and Clinical Psychology*, v.64, pp.333-42.

Barrett, P.M., Duffy, A., Dadds, M.R. & Rapee, R.M. 2001, 'Cognitive-behavioral treatment of anxiety disorders in children: Long-term (6-year) follow-up', *Journal of Consulting and Clinical Psychology*, v.69, pp.135-41.

Booth, M.L., Bernard, D., Quine, S., Kang, M.S., Usherwood, T., Alperstein, G. et al. 2004, 'Access to health care among Australian adolescents – young people's perspectives and their sociodemographic distribution', *Journal of Adolescent Health*, v.34, pp.97-103.

Christensen, H., Griffiths, K.M. & Korten, A. 2002, 'Web-based cognitive behavior therapy: Analysis of site usage and changes in depression and anxiety scores', *Journal of Medical Internet Research*, v.4, viewed 16 Jan. 2006, <http://www.jmir.org/2002/1/e3>.

Cisco Systems, Inc. 2000, *Reusable learning object strategy – definition, creation process, and guidelines for building (Version 3.1)*, CA, USA.

Commonwealth Department of Health and Aged Care 2000, *National action plan for promotion, prevention and early intervention for mental health*, Mental Health and Special Programs Branch, Commonwealth Department of Health and Aged Care, Canberra.

Costello, E.J., Mustillo, S., Erkanli, A., Keeler, G. & Angold, A. 2003, 'Prevalence and development of psychiatric disorders in childhood and adolescence', *Archives of General Psychiatry*, v.60, pp.837-44.

Department of Health and Ageing 2004, *Responding to the mental health needs of young people in Australia, discussion paper: Principles and strategies*, viewed 16 Jan. 2006, < http://www.mentalhealth.gov.au/resources/pdf/youngpeople.pdf>.

Gilroy, L., Kirkby, K.C., Daniels, B.A., Menzies, R.G. & Montgomery, I.M. 2000, 'A controlled comparison of computer-aided vicarious exposure versus in vivo exposure in the treatment of spider phobia', *Behavior Therapy*, v.31, pp.733-44.

James, A., Soler, A. & Weatherall, R. 2005, 'Cognitive behavioural therapy for anxiety disorders in children and adolescents', *The Cochrane Database of Systematic Reviews*, v.4.

Kendall, P.C. 1994, 'Treatment of anxiety disorders in children: A randomized clinical trial', *Journal of Consulting and Clinical Psychology*, v.62, pp.100-10.

Kendall, P.C., Chu, B.C., Pimentel, S. & Choudhury, M. 2000, *Treating anxiety disorders in youth*, in *PChild and adolescent therapy: Cognitive-behavioral procedures*, 2nd edn, ed. C. Kendall, Guilford, NY, pp.235-90.

Lyneham, H.J. & Rapee, R.M. in press, 'Evaluation of therapist-supported parent-implemented CBT for anxiety disorders in rural children', *Behaviour Research and Therapy*.

Lyneham, H.J., Schniering, C.A., Hudson, J.L. & Rapee, R.M. 2005, *The Cool Kids program – adolescent version*, Macquarie University Anxiety Research Unit, Sydney.

Macromedia Flash MX Professional 2004, software program.

Mission Australia 2005, *2004 National Youth Survey*, viewed 16 Jan. 2006, <http://www.missionaustralia.com.au/cm/resources/documents/Youth_survey_2004.pdf>.

MUARU 2005, *Macquarie University Anxiety Research Unit web site*, viewed 16 Jan. 2006, <http://www.psy.mq.edu.au/MUARU/child/child.htm>.

Nicholas, N., Oliver, K., Lee, K. & O'Brien, M. 2004, 'Help-seeking behavior and the Internet: An investigation among Australian adolescents', *Australian e-Journal*

AUTHORS

Mike Cunningham is a doctoral graduate student in the Department of Psychology at Macquarie University, under the academic supervision of Ron Rapee, who is a Professor of Psychology and Director of the Macquarie University Anxiety Research Unit (MUARU).

Heidi Lyneham is a clinical psychologist and Research Fellow in the Department of Psychology at Macquarie University.

Mike Cunningham holds an international Macquarie University Research Scholarship (iMURS). Email contact: Michael.Cunningham@psy.mq.edu.au

for the Advancement of Mental Health, viewed 16 Jan. 2006, <http://www.auseinet.com/journal/vol3iss1/nicholas.pdf>.

NSW Centre for the Advancement of Adolescent Health 2005, *Understanding adolescents*, viewed 16 Jan. 2006, <http://www.caah.chw.edu.au/resources/gp-section1.pdf>.

Pine, D.S., Cohen, P., Johnson, J.G. & Brook, J.S. 2002, 'Adolescent life events as predictors of adult depression' *Journal of Affective Disorders*, v.68, pp.49-57.

Proudfoot, J., Swain, S., Widmer, S., Watkins, E., Goldberg, D., Marks, I. et al. 2003, 'The development and beta-test of a computer-therapy program for anxiety and depression: Hurdles and lessons', *Computers in Human Behavior*, v.19, pp.277-89.

Rapee, R.M. 2000, 'Group treatment of children with anxiety disorders: Outcome and predictors of treatment response', *Australian Journal of Psychology*, v.52, pp.125-29.

Rapee, R.M., Cunningham, M.J. & Lyneham, H.J. 2005, *The Cool Teens CD-ROM*, Macquarie University Anxiety Research Unit, Sydney.

Rapee, R.M., Wignall, A., Hudson, J.L. & Schniering, C.A. 2000, *Treating anxious children and adolescents: An evidence-based approach*, New Harbinger Publications, Oakland, CA.

Richards, J.C., Klein, B. & Carlbring, P. 2003, 'Internet-based treatment for panic disorder', *Cognitive Behaviour Therapy*, v.32, pp.125-35.

Sawyer, M.G., Arney, F., Baghurst, P., Clark, J., Graetz, B., Kosky, R., Nurcombe, B., Patton, G., Prior, M., Raphael, B., Rey, J., Whaites, L. & Zubrick, S. 2000, *The mental health of young people in Australia: The child and adolescent component of the national survey of mental health and well-being*, AGPS, Canberra.

Schneider, A.J., Mataix-Cols, D., Marks, I.M. & Bachofen, M. 2005, 'Internet-guided self-help with or without exposure therapy for phobic and panic disorders', *Psychotherapy and Psychosomatics*, v.74, pp.154-64.

EXTRA

Better Outcomes in Mental Health Care Program and claiming Medicare benefits for psychological counselling

While cognitive behavioural therapy and psychological counselling in general have been shown to be beneficial for those with mental health problems, the cost of such services is often prohibitive, especially for young people. However, general practitioners at accredited practices and participating in the Better Outcomes in Mental Health Care Program are able to refer clients for a number of Medicare-claimable psychology sessions. Beyondblue has a partial list of participating GPs (listing only those who have permitted their details to be publicly available on that web site) but an inquiry at any medical practice will confirm if any GPs at that practice are registered with the program or not. For further general information about the Better Outcomes in Mental Health Care Program, contact the General Practice Mental Health Standards Collaboration's Secretariat, ph: (03) 8699 0554; email: gpmhsc@racgp.org.au, or see: <http://www.racgp.org.au/document.asp?id=5867>.

Coping with depression in young people: A guide for parents, by Carol Fitzpatrick & John Sharry, John Wiley and Sons, 2004, ISBN: 0-470-85755-2, paperback 158pp.

Though not written recently or specifically for an Australian audience, this book would be handy for both teachers and parents. Its authors wrote this guide in response to parents' requests for recommended reading material to help them understand their young person's depression. It includes chapters on the difficult issues of suicide and self-harm, and on learning from young people who have recovered from depression. Each chapter ends with short case-histories illustrating that chapter's themes. It's rich in information that takes time to absorb, and is therefore probably best read by parents before their children reach the teenage years. It's a work of encouragement and hope. Carol Fitzpatrick is Professor of Child Psychiatry at University College Dublin and a consultant child and adolescent psychiatrist at Dublin's Mater Hospital. Coauthor Dr John Sharry works as principle social worker at the Mater Hospital and at Children's Hospital in Dublin. Sharry is the author of numerous self-help books for parents.