

The prevention of mental disorders in young people

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DEPRESSION, ANXIETY and substance-use disorders are the most common mental disorders. They account for three-quarters of the burden, measured in disability-adjusted life-years lost, generated by all the mental disorders. We have calculated that current services avert 15% of the burden of affective disorders,¹ and work in progress suggests that even lesser amounts of the burden of the anxiety disorders and alcohol misuse or dependence are averted. If coverage (the number of people seeking treatment), clinician competence and patient compliance were all maximised, the proportion of burden averted would double.¹ Thus, even allowing for imprecision in these estimates, we estimate that half the burden of these three mental disorders could not be averted with current interventions and knowledge, irrespective of the funding available.¹⁻³ Thus, prevention becomes more important.

Onset of depression, anxiety and substance-use disorders occurs in adolescence and young adulthood. Therefore, prevention programs should focus on children, before the disorders begin to cause disability, restriction of life choices, and other damage. They should focus on the reduction of risk factors and the inculcation of protective behaviours in children at risk.

We searched for reports of randomised controlled trials (RCTs) that established the value of risk-factor reduction or of enhanced coping strategies in preventing the onset of anxiety, affective or substance-use disorders. We are unaware of any RCT evidence about the impact of risk-factor reduction, although there are reports of interventions that increase coping skills.

Efficacy of programs for preventions

Preventing depressive disorders

There are nine RCTs of interventions to prevent depression in young people. Clarke et al⁴ used classroom teachers to deliver brief psychoeducation, and found no benefit. Petersen et al⁵ used psychologists and Spence et al⁶ used teachers in classroom settings to deliver extensive psychoeducation and problem-solving, and both found no benefit. Beardslee et al⁷ used clinician-assisted advice to a target

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ABSTRACT

- The prevention of some mental disorders in young people appears to be possible.
- Several small and medium randomised controlled trials show that some anxiety, affective and substance-use disorders can be prevented.
- These trials show that the interventions are efficacious, but whether they will be effective in routine practice is not known.
- The evidence is sufficiently good to warrant a large community trial in which the roll-out is staged and school communities evaluated before and after the roll-out.

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group of children of depressed parents and found it not to be superior to brief information sessions.

The other five RCTs⁸⁻¹² used variants of cognitive therapy or cognitive behavioural therapy (CBT) delivered by clinical psychologists. All these interventions led to improvement compared with the control groups, sometimes confined to symptoms and sometimes resulting in a reduced incidence of major depressive disorder. Clarke et al⁹ found the incidence of major depression in their intervention group of children of depressed parents was a third of that in the control group (9.3% v 28.8% over two years). Shochet et al,¹² in a universal school-based intervention using a program designed by Clarke et al,⁸ found that the incidence of depression in the intervention group was halved over the 10-month follow-up.

The problem is not efficacy — the Clarke et al⁸ cognitive therapy program appears to work — but effectiveness in routine practice. There are too few clinical psychologists who are trained to deliver cognitive therapy and able to conduct either universal or targeted prevention programs in schools.

Preventing anxiety disorders

Two RCTs examined CBT programs for prevention in children at risk of developing an anxiety disorder.¹³⁻¹⁵ In the first of these, Dadds et al¹⁴ screened 1786 children aged 7–14 years, and identified 128 highly anxious children, who were then randomised either to the Barrett-Kendall^{16,17} 10-session CBT intervention or to a waitlist control group. At the two-year follow-up, compared with the control group, the intervention group had half the risk of meeting criteria for an anxiety disorder (20% v 39%).

There are eight RCTs using a similar program in children and adolescents referred for early treatment of symptoms or disorder. They all show similar or better results, with follow-

up periods as long as six years.¹⁶⁻²² There seems little doubt that the Kendall program, and its subsequent versions, is efficacious and can be effective in reducing symptoms and the appearance of disorder.

In the second of the RCTs of prevention, Lowry-Webster et al¹⁵ used the Barrett et al¹⁸ program in a universal intervention with 594 children (aged 10–13 years) randomly allocated to CBT or to assessment only. The program was conducted by classroom teachers in normal class time. Post-treatment data showed a result similar to that in the targeted intervention study by Dadds et al;¹³ that is, the rates of remaining at risk in the intervention group were half those in the control group. Follow-up data are not yet available.

As with the interventions for preventing depressive disorders, the problem is not efficacy (CBT works), but effectiveness in routine practice. We are in the follow-up phase of an RCT of the Barrett et al¹⁸ program, now using school counsellors and teachers as therapists. We are already aware that, although school staff are prepared to conduct the prevention programs on one occasion, there is a reluctance to see this as part of their routine duties.

Preventing substance misuse

A recent meta-analysis of 10 well-designed studies of prevention programs in schools, aimed at reducing the prevalence and onset of drug use, found a positive effect.²³ Botvin et al examined the effect at the six-year follow-up of a universal prevention program on tobacco, alcohol and marijuana use in 2800 early teens.²⁴ For those who completed more than 60% of the program, significant reductions in prevalence were found across all three drug classes. In a sample of 12 000 students, Donaldson et al reduced the proportion of early teens using alcohol by 7%–10%^{25,26} (this is particularly important, as evidence suggests that the earlier adolescents begin using alcohol and other substances the more likely they are to misuse drugs in young adulthood^{27,28}).

Both programs were designed to alter attitudes about the acceptability and prevalence of drug use and to teach skills to actively resist drug offers. Both included booster sessions in subsequent years, a factor that contributes to the general success of prevention interventions.²³ However, universal prevention programs are more effective among non-users and experimenters than among frequent users or those who misuse.

Regular drug use in adolescents is not uncommon. In an Australian survey of 12–17-year-olds, 10% had used marijuana more than 40 times in the past year.²⁹ For this subpopulation of regular users and misusers, a harm-reduction strategy is required. Such an approach seeks to reduce use and to minimise the risk of adverse consequences of use. Little formal evaluation of this approach has been conducted, but the few studies that exist show promise.^{30,31}

Moving from efficacy to effectiveness

In the analyses of interventions for depression, anxiety and substance misuse, there is evidence that strategies exist to reduce both symptoms and disorders.

The problem lies in the delivery of these interventions. Training healthcare professionals to become competent in the delivery of cognitive or behavioural strategies is difficult, and ensuring that they do what they know to do is even more of a problem. But turning away from what has been shown to work is dastardly. We have to find methods to implement these programs.

One method is MoodGYM, an Internet-based CBT program that can reduce symptoms of depression in young people.³² Another is a computerised cartoon-based patient education program <www.climate.tv> for use in general practice. This program includes modules to reduce depressive and anxiety disorders, and is being developed for use in the health education segment of the junior high school curriculum. Such approaches avoid the staff availability problem.

Bridging the gap between efficacy and effectiveness: a public health imperative

The RCT provides the best-quality evidence about the efficacy of health interventions, whether biological (eg, drugs and vaccines), or behavioural (eg, CBT). Trials typically involve highly controlled circumstances and tightly defined and limited populations. Consequently, the findings are typically not repeated when the intervention, although proven to be efficacious in the trial, is applied in the general community under normal program conditions. That is, effectiveness (the impact of an intervention when delivered through a program) is rarely as high as efficacy in a trial.³³

Is this important? The answer must be yes. After all, if — as is typical — the efficacy of an intervention in a trial is statistically significant, but of modest effect, then a reduction in the level of effect when the intervention is delivered through a program may lead to no effect, or to an effect that is hardly worth having. Furthermore, cost-effectiveness will almost inevitably be lower (because of lower effect and potentially higher hidden costs) when applied in a program setting. Thus, when any intervention is shown to help in a trial, great caution must be used in considering how useful it will be when applied more broadly.

How large is the gap between efficacy and effectiveness? It is hard to know, and almost certainly varies according to the intervention and setting. Furthermore, many interventions that are applied through large and expensive publicly funded programs in Australia and in other countries have not even been tested in a controlled-trial setting. There is a wide perception that trials of non-biological interventions are too hard or are inappropriate. Thus, some interventions are subjected to pre/postevaluations only (and many even lack external controls). Such study designs produce evidence of relatively low quality, and we can have limited confidence in the conclusions that follow.

Community “effectiveness” trials

One much-neglected solution is the use of large scale, simple, pragmatic, community randomised trials. These “effectiveness” trials can be seen as a step between the

1: An example of a community “effectiveness” trial³⁴

We carried out a large trial to test the effect of training healthcare workers to treat patients with sexually transmitted infections (STI) on the quality of STI treatment received (in the hope that this would reduce HIV incidence) in South Africa. Nobody would doubt that training clinic nurses to do this is a good thing, but before committing millions of dollars on a national program surely it is worth finding out the likely effect in the program setting?

To answer this question, we randomised 12 village clinics, their staff and their catchment population either to receive STI training plus an STI treatment pack or to continue current practice.

Baseline measures of STI treatment quality were obtained using field workers with sham STIs. Intervention clinics received the training program, and a few months later the measures were repeated.

The research (measuring effect) was quite separate from the program itself. We were able to show quite dramatic increases in the quality of STI treatment in intervention clinics, and to accurately cost the program.

The findings from this research are useful to policy makers and planners, as they can now consider, with substantial confidence, what effect the provision of this sort of training will have on quality of clinical care — information that was simply not available before.

tightly controlled randomised “efficacy” trial (that is used to prove effect in a highly controlled environment) and the uncontrolled implementation of an intervention in a program setting.³³ These trials aim to answer a simple question: *What will the effect be when we apply this (proven) intervention into our community as a program?*² The “community” in such trials is a geographically defined area such as a village, health district, or local council area, or a school, general practice, or healthcare service catchment area. Usually the intervention is applied at the level of the community — an entire town might receive a multifaceted intervention program against heart disease, or a school might receive a program designed to reduce depression or anxiety. The level of analysis is usually the level at which the intervention was applied, and so, although measures of effect are taken in individual people, the impact is aggregated at the community level and compared across communities to determine the effect. This makes intuitive sense, as what we are seeking to know is the effect at community level (we already know it works for individuals).

Community trials seek to have minimal influence on the community, other than through the intervention itself. The intent is to test the intervention in as “natural” a way as possible, and the research measurements themselves are designed to be as non-intrusive as possible (see Box).

Community randomised trials are not necessarily easy or cheap to do. Neither are they the only method available. Repeated time-series measures and before-and-after designs, with external controls, can also provide high quality evidence when designed and conducted with rigour. These are different to the more qualitative and process-type of evaluation that is typically done post-hoc. We would argue for the higher quality, pre-hoc, quantitative evaluation.

Few, if any, interventions that seek to promote mental health or prevent depression and anxiety have been subjected to large-scale community trials. They should be, and

governments should have such trials done before spending millions of dollars on a national rollout of this type of intervention. Indeed, governments might consider supporting such trials as part of a national rollout. Rollout rarely occurs everywhere at once. How are initial sites chosen? Why not random allocation of communities? It is perhaps the fairest way. Communities could be randomised to the order in which they would receive the intervention, and those receiving the intervention later would act as controls for the early implementers. Fanciful? Not really: in Pakistan the government randomised health districts to the time when they would implement a new approach for tuberculosis control. This allowed researchers to set up a community randomised trial to test the effect of the new model in a highly rigorous way.³⁵ The findings of the research raised several challenging issues that would otherwise have remained largely invisible. The result is, we hope, a better national program.

Australia has made a substantial contribution to the research evidence base regarding mental health prevention. Let us now be brave and smart enough to test some of these interventions in large-scale community trials, with funding support from the National Health and Medical Research Council (NHMRC) and the State and Commonwealth governments. Instead of insisting on, and funding post-hoc evaluations of, national programs, perhaps the funding could be provided up-front and used to support implementation through a community trial.

Such trials are not easy to do, but neither are they particularly hard. Done well, they need not be unaffordable, and obtaining high quality evidence for policy making is a sound investment.

Conclusions

It is possible to intervene to prevent the advent of the common mental disorders in children at risk. Such intervention may be cost effective (ie, better than waiting for the disorder and the disability to become manifest). It may be possible to improve the mental health of the nation by doing what seems sensible, but to date there is no evidence of a return on such an investment. In the meantime, we should invest in prevention and leave promotion to those who dream of a better world.

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