

Research Is Everybody's Business! Seminar Series

Dr Joseph Rey

Adolescents, Antidepressants and ECT *January 22 2004*

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Professor Rey is the Professor of child and adolescent psychiatry at Sydney University, and the director of the child and adolescent mental health services for the Northern Area Health Service in Sydney. He has published a large number of research papers about adolescents and children. Some researchers spend a great deal of time, in fact their entire lives, focused on just one very small topic in one very small field of study. This is certainly not the case for Professor Rey who has published journal articles on anxiety disorders, school refusal, conduct disorder, attention deficit disorder, bed-wetting, personality disorder, cannabis, and, of course, depression, including antidepressants and ECT use in young people. I was reading a review that somebody wrote about a lecture that Professor Rey presented in Malaysia, and it said, "Professor Rey's rendition of depression in children and teenagers was a revelation". So who better then to present our public lecture on the topic. Without further ado I'd like to hand it over to Professor Rey.

Professor Rey's Lecture

It is an honour and a privilege to be [here](#) tonight talking on a topic dear to my heart, which is adolescent mental health. I will start briefly by mentioning something that I found surprising. A colleague of [mine](#) decided to spend about a year reading teenage books; she read ninety-four of the notable books in the older children category of the Children's Book Council of Australia awards, between 1996 and 1998. She wanted to find out what young people were reading, or were being recommended to read, and how mental disorders were portrayed in those books and how often they occurred. She was shocked (she was a mother) to find out that those problems were all pervasive in the literature. For example, forty percent of the characters in these books

had symptoms of a psychiatric disorder. Ten of the characters in these books had committed suicide. This is in great contrast with what the same notable texts were like twenty years ago. Then the topics were life in outback Australia and the characters were often animals like in *Karrawingi the Emu*. Now you have many characters who have been traumatised, who have been the victims of torture. That is what our children are currently reading. Perhaps that reflects what writers and authors and the community at large think about young people. We see that every day in the newspapers: how common depression is or other similar topics. The contrast is that although western society, Australia among others, has never been as wealthy or has healthy as we are now, one of the areas of health that seems to be getting worse is the mental health of young people. We know that depression, suicide, conduct problems, drug abuse are on the increase. That should worry all of us. John Howard (and I don't want to get into politics, particularly in Canberra) is talking about schools and that teachers should just focus on teaching the basics. However, lots of school teachers come to me and say, "I'd love to teach the basics, but I have a classroom that is out of control. All these people have all these problems".

Are teenagers these days different? We all tend to unrealistically think that the past was better, that there were no problems. However, we know that teenagers today are under more stress than they used to be. On the one hand there is the increased need for knowledge and skills that keep young people dependent on their families for much longer. I have read in the newspapers that some parents cannot get rid of their kids, they are twenty-six and still at home. There is also an earlier physical maturation. Young people these days mature earlier than people of fifty to one hundred years ago. Young people are confronted earlier by biological drives that they had to face much later one hundred years ago; for example, their first love, first sexual encounter, and first break-up of a relationship by the age of 13 in many cases. There is increased access to information and media-related social pressures and expectations, societal changes, and changes in the family. The traditional family does not exist any more –in the sense that there are many more families that are either broken families, single parent families, or blended families. Therefore there has been an enormous change and that has had an impact on young people. Parents feel like it is a maze and wonder how they will find their way out of it. I know young people probably feel the same to some extent.

Another important aspect that I would like to cover this evening is that people always think of mental disorders as something that affects thirty and forty year olds, people who are put into psychiatric hospitals. I am going to summarise very briefly, a study that was conducted in Dunedin, New Zealand, in which they have been following up one-thousand three-hundred children from birth up until now (currently about twenty-eight years of age). They have interviewed them every year or every two years over this period and they have produced an

enormous wealth of research. They have looked at what are the problems the participants had at the age of twenty-six and how many of them had problems earlier on. They found that, of all the twenty-six year olds in that study with a mental illness at the age of 26, seventy-four percent had a mental disorder before the age of eighteen, and fifty percent before the age of fifteen. Then they examined those participants that actually used an intensive mental health service: hospitals, psychiatrists, community treatment and psychologists. They found that almost 80 percent had a psychiatric diagnosis before the age of eighteen, and sixty percent before the age of fifteen. That means the conceptualisation of psychiatric disorder or a mental health disorder as an adult illness is false. In fact, we need to reconceptualise it as a continuation of a condition that starts in childhood or adolescence.

Until very recently, people tended to minimize the existence of mental disorders in young people. Young people were [described as](#) 'naughty', or they were 'going through a phase', or they were 'bad'. We were very reluctant to acknowledge that young people had mental health problems, among them depression, and depression is a very common problem. Although rates [vary among studies](#) because of the criteria used, about two to eight percent of all young people will have had a depressive episode in the previous twelve months. These conditions are much less prevalent during childhood, about one percent, but they become much more common during adolescence.

Data from the Australian National Survey (putting together the data for [adolescents and](#) adults) illustrate that there is a clear increase in the prevalence of depression among females as they get older. The data for men is less clear cut. There is also some suggestion that depressive disorders may be increasing among young people. The people who were born later in the last century have a higher rate of depressive illness than people who were born earlier in that century, although proving that is extremely difficult. Another parallel is the increase in youth suicide that you are all familiar with. Suicide rates in men have not increased too much [overall](#), but the rate of suicide in young males has increased considerably during the twentieth century.

People think of depression as a period of being down, but on the whole everything is going well. This is far from the truth. [In](#) one of the largest studies on the psychological treatment of depression in young people that comes from a group in the United States, they treated a bit more than one hundred young people with cognitive therapy, interpersonal psychotherapy and other treatments. Then they followed the adolescents for two years to see what happened to them. What they found was that over eighty percent of these teenagers actually recovered from their depressive episode, but twenty percent remained depressed after two years. However,

what was more dramatic is that of the people who recovered (and they took about eight months to achieve recovery on average), about half had a recurrence of their depressive episode, and the recurrence occurred about four months after they had recovered from depression. That means that depression is not something that one overcomes and it does not reoccur. The study found that the recurrence rate was forty percent after two years, and seventy percent after five years. This means a very large number of young people who have a depressive episode are likely to have another depressive episode during the following three or five years. This means that in reality depression is something that comes and goes. It is a recurrent illness. This has important implications on how to treat the depressive episode to prevent the recurrence of the illness, because it is not just how to treat this depressive episode and get this person better, but more importantly how to prevent the recurrence. This is happening with many chronic illnesses, such as asthma or diabetes. A major aspect of the treatment is preventing the illness from recurring.

Depression is also a condition that causes severe impairment. This is from another study of a group of patients that were treated for depression when they were on average sixteen years old; they had severe depression because most of them were [admitted](#) to hospital, and they were followed up ten years later. They were compared with a group that did not have depression. After ten years, eight percent of the group with depression [had](#) killed themselves, versus zero people in the control group (the group with no depression). Half of the depressed group had attempted suicide, as opposed to five percent in the group that were not depressed. These [depressed](#) young people had more psychiatric problems but also more medical problems than the control group. They had [lower](#) educational attainments, had a lower social class, more time out of work, and were more impaired than those who did not have depression. Depression is not something that one just forgets and does not have long-term implications – it does have. Therefore, one needs to take it seriously.

[Depression](#) is also associated with health-risk behaviours. The Australian National Survey shows that fifty percent of depressed young people at some stage have planned to commit suicide, compared to 5-8% of the non-depressed group. Thirty-five percent of the depressed group smoked (10 days in the previous month), compared to fifteen percent of the non-depressed group. The people in the depressed group drank (5 or more drinks at least once) in the previous month and smoked marijuana significantly more than the non-depressed group. Therefore, depression is also associated with many health risk behaviours, which can have long-term implications. If depression doesn't kill you smoking probably [will](#).

I would like to mention briefly the issue of marijuana and depression because there are several studies from Australia and New Zealand showing an association between marijuana use and depression. Studies done in Melbourne and Christchurch have shown that young people who smoke marijuana (at least once a week) are more likely to develop depression than people who do not smoke it. Some people say that perhaps these adolescents used marijuana as a self-treatment, to feel good, but the evidence is that this is not the case.

The Australian National Survey shows that of the 122 people who had depression out of the 4,500 participants, only five percent saw a paediatrician or a GP. Eight percent sought mental health services, and nine percent saw both mental health services and their GP. Only twenty-percent of people who were depressed received some kind of professional treatment. That means, by-and-large, that depression is not identified or treated.

Can we do something about this? Do we have effective treatments? We do have effective treatments. Cognitive behaviour therapy and interpersonal psychotherapy are the better researched ones. They show that about 70-80 percent of young people with mild to moderate depression get better with these treatments. However, about half of the people who were treated relapsed. That means that just giving ten or twelve weeks treatment and then forgetting about it is not enough. Something else is necessary to prevent people relapsing. In the group who were treated with psychotherapy, twenty-one percent ended up taking medications as well. This means that psychotherapy is effective, but the issue of how to prevent recurrences is still unresolved.

What about anti-depressants? Do we have 'happy pills'. A few weeks ago on the front page of the Sydney Morning Herald it was mentioned that children's 'happy pills' are going to be dumped. In the first place I challenge the statement that all the young people are taking pills, although these data are about 5 years old and perhaps things have changed since then. In the survey mentioned earlier, of the 122 adolescents who were depressed, only three percent were taking anti-depressants. Interestingly enough 4 percent were taking methylphenidate (Ritalin) which is a treatment for ADHD. We are not sure why, maybe they had both disorders or were not properly diagnosed, but certainly one thing that is clear is that in 1998 the use of anti-depressants in young people was not a very common occurrence in Australia.

Is medication effective? There are two main groups of anti-depressants. One, the older ones that have been around since the 1940's and are called tricyclic antidepressants, and there is a new group which has appeared in the last twenty years. Although the old antidepressants were

widely used amongst young people, now we know that they are no more effective than placebo treatments. The other problem is that **tricyclic antidepressants** are quite toxic; they are cardiotoxic and tend to cause the heart to arrest, particularly on overdose. This is a very bad combination because young people who are depressed are very prone to taking overdoses; if they take an overdose of a drug of this kind, the likelihood of them harming themselves seriously is much greater. As a result these days tricyclic antidepressants are not recommended for use in young people.

Another point that I'd like to make here is that in the process of testing and marketing medications, what people do is test them in controlled trials in adults. But once they are approved for use, and have been shown to be safe and effective for adults and available in a pharmacy near you, then every doctor can prescribe the medication for a whole range of people, although they may not have been shown to be effective for young people. A typical example of this is the tricyclic antidepressants; they do work in adults but they don't work in young people. It has taken a number of years to find that out, in the meantime we were prescribing them and taking the risks that this medication presented.

The other group of antidepressants are the so called **Selective Serotonin Reuptake Inhibitors** or SSRI's I'll just mention three here, Prozac, Zoloft, Aropax (there are about half a dozen more). These drugs have been introduced more recently and they have the advantage of being much safer. It is very difficult for someone to kill themselves taking an overdose of these medications, and very few people have in fact died as a result. But are they effective? We have some evidence that Prozac (**fluoxetine**) is effective. Not hugely effective. As you can see in the trials that we have available, forty-six percent of people improved with placebos, while sixty-six percent improved with medication. The difference is less than twenty percent. It is not something to really get carried away about. Why so many people respond to placebo is not clear. One reason may be that a natural history of a depressive episode lasts about eight months, therefore when you go to your doctor you have already been depressed for some months and some people may not seek a doctor's assistance until well into the episode, and things may well already be on the mend. And perhaps that is a reason why the difference is not too great. But we do not have any evidence that the other SSRI's are effective.

You may have been startled by the news in the press a few weeks ago, about the fact that some of these anti-depressants have been banned because they can cause an increase in suicidal behaviour. This was triggered by a warning by the Committee on Safety of Medicines in the

UK, that [paroxetine](#), one of these anti-depressants, should not be used in people under the age of eighteen because:

- 1) there is no evidence that it is more effective than placebo, and
- 2) the trials that were carried out showed that young people who were taking the medication had an increase in suicidal behaviour.

You may have also heard that some kids involved in the Columbine shoot out, were on these kind of antidepressants. Some people blame these antidepressants for these things.

So, what does this mean? If you examine the studies you find that of the children (three or four hundred of them) who reported suicidal thoughts, 2.8% were in the placebo group, and 5.8% in the [paroxetine](#) group. I should mention that in none of the studies did a child actually commit suicide or die as a result.

Of the depressed kids that I treat, 80 percent have suicidal thoughts. It is very unusual if only 2.8 percent of depressed adolescents have suicidal thoughts in these studies. In fact, in the Australian National Survey, we have higher rates of children with suicidal behaviour in the general population, let alone among those who are depressed. One of the problems that we face when conducting treatment research is that if adolescents say they have suicidal thoughts, they are excluded from participating in the trial for ethical reasons. If you do this, you will end up treating a very unusual sample; most young people with depression feel that 'life sucks', and that they would be 'better off dead'. Therefore, what is the validity of these controlled trials? Can we generalise the results to the "garden variety" depressed adolescent that we see in the clinic?

To make things more confusing I want to give you some information on another study. This study looks at the rates of suicide of young people in the United States and rates of prescription of these newer antidepressants. The study concluded that (looking at overall numbers of suicide and scripts for antidepressants), after many years where the rates of suicide had been going up, the rates of suicide have begun to decline in the late the 1990's. The reasons for this are not understood, but this group has come up with the theory that perhaps this may be due to the fact that antidepressants – particularly in the US, have been prescribed much more widely. They found that a one percent increase in SSRI prescriptions resulted in a decrease of 0.233 suicides per one hundred thousand per year.

I cannot make much sense of these conflicting findings. We need more research to reach a clear conclusion. What is clear is that the lot of the people who are depressed, is not an easy

one –particularly those with severe depression, who very often end up with a whole lot of different tablets and treatments. That allows me to move on to talk about Electro-convulsive Therapy (ECT) which was one of the original aims of the presentation this afternoon. I would like to thank Dr Gary Walter, a researcher who works with me, who has put a lot of time and effort into this work.

I will start with a case that happens reasonably often in clinical practice. You have a seventeen year old girl that has a depressive illness which has not responded to treatment. Midway through a session, her parents lean forward in their chairs listening to what the psychiatrist says about the treatment options. The psychiatrist goes on to say:

- Diana has taken several antidepressants, we have tried anti-psychotics, we have combined them, we have provided psychotherapy, but she has not got better. As she has been depressed for many months and her condition is getting worse, maybe we should consider ECT.
- ECT? (Parents ask).
- Yes, Electroconvulsive Therapy.
- You mean shock treatment?
- Yes, that's a common name for the procedure.

The parents become pale, slump in their chairs and finally the mother utters

- Diana? Shock treatment? But she's only a child!

We return to the issue that children do have serious mental health problems. And that many people become worried and fearful as soon as one mentions ECT. Misconceptions about ECT and particularly about its use in young people are a rule, regrettably, even among professionals.

ECT is a treatment that involves the production of seizures, or a fit, through the brief passage of an electric current through the brain via electrodes placed on the scalp. ECT in most western countries is considered a treatment of last resort in the young. It is used much more commonly in elderly people for example, but in young people is considered to be a treatment of last resort used only when everything else has failed. It has been around for a while. It was first used in 1942 by a French psychiatrist who described two cases. In the year after that (at the end of the German occupation in Paris) he described 40 children that had been treated with ECT and they reported that ECT was a most useful treatment for melancholy, which means depression, less effective in other conditions, and not very effective in schizophrenia. Things haven't changed much since then. This was described as a safe treatment in this age group at the time.

ECT is generally administered two or three times a week, under a general anaesthetic. The reason for that is to avoid dislocation of joints or fractures produced by the fit. Fractures are uncommon in young people, but can occur in older people because of osteoporosis. Anaesthesia also makes the procedure less unpleasant. The electrodes can be placed on both sides of the head, which is bilateral ECT, or on one side, unilateral ECT. The course of ECT usually comprises eight to twelve treatments, only takes three to four weeks. It is a treatment that requires informed consent and it is recommended that (because it is a treatment of last resort and people are very concerned about using it) a second opinion is sought, if possible by a child psychiatrist. ECT can be given involuntarily (at least in NSW); in this case it has to go through the process of involuntary treatment. It doesn't happen very often but sometimes it is required.

We know very little about ECT in young people. Dr Gary Walter and I conducted several studies to learn more about how often it is used, how effective it is, and so on. We identified all the young people in NSW who have been treated with ECT in a 10 year period between 1990 and 1999. We could do that because all people who receive ECT have their names entered into a register which is monitored and supervised. After ethics review approval, we were allowed to consult those registers and find out which young people had been treated, we were able to look in detail at the treatment files, and we interviewed the treating doctors to see what had happened to these young people after ECT. Finally, we spoke with a group of patients and parents to ask them about the treatment.

There were a number of ECT courses given in this 10 year period; as you can see they went from 3 in 1990 to a maximum of 18 in 1994. On average there were 9 ECT courses per year in NSW. This shows the age of the patients. As you can see there were 2 that were 14 years old, 10 at 15 years, becoming more common as people get older because depression becomes more severe and more frequent. There were a similar number of boys and girls, although in the 18 year olds group the females seem to be increasing. Overall, 72 adolescents received 84 courses of ECT; 84 courses because some adolescents had 2 on two different years. On average, 9 were treated each year, that represents 1.5 per hundred thousand adolescents treated with ECT per year in NSW. The young people treated are a very small proportion of all the people who are treated with ECT. ECT is fairly commonly used, particularly in older patients.

ECT is a short term treatment. People get better for a few weeks but they often relapse if other treatment is not put in place to prevent that happening. Overall, of all the adolescents who have a mood disorder (that means depression or bipolar disorder), about 75% showed a marked

improvement. Of the adolescents who had bipolar disorder, that's mania or bipolar depression, about 90% showed a marked improvement. That means that ECT is a particularly effective treatment for bipolar disorder and it is very effective for the treatment of mania. ECT is not often required because mania tends to last a few days, usually it doesn't go on for a long time. But ECT is not very effective in the treatment of schizophrenia-spectrum disorders, as about 23% did not show any immediate improvement.

We compared these results with those in all the cases published since 1940. We counted them and found out what were the rates of improvement, which were similar: about 70% in mood disorders, 80% in bipolar disorder. However, this is not a controlled study. It would be extremely difficult to carry out controlled studies where we give ECT to some people who have depression and we give 'sham ECT' to others. We do have adult data, a couple of trials where they actually did this, which showed that ECT is effective in mood disorders.

What about the side effects? ECT is shock therapy. Is that bad? There are a lot of myths about it. People say "you will not do this to me" yet we do much worse things to ourselves. We drink too much alcohol, smoke cigarettes... What are the side effects that we find? Well, headaches, 60% of all the people treated did report having some headaches after the treatment. Some of them were slightly confused for a few hours, some people report memory problems: this is one of the areas of concern. ECT does seem so have some effect on memory although the evidence in children (and there are some studies) is that after a few weeks or months those effects seem to disappear completely. Nevertheless, it is of some concern. About 15% of children complain of nausea and vomiting and muscle aches. Some of them become manic, but this is very rare and is a problem with antidepressants also. Ringing in the ears is very rarely reported. That means that apart from headaches and perhaps memory problems, the side effects of ECT are fairly limited.

You have to realise that, like with any treatment, one has to weigh the advantages and the disadvantages. Even taking aspirin can kill you. My tennis partner was taking aspirin, 6 months ago he began feeling unwell and having headaches. One day he was driving home and found himself going through the lights and couldn't feel his legs. His wife took him to hospital and a brain scan found he had a brain haemorrhage because he had been taking aspirin. Aspirin reduces the ability of the blood to clot and for some reason he began bleeding in his head, couldn't stop the clotting and ended up in hospital with a huge haemorrhage. The point that I am trying to make is that all treatments have potential side effects. One would not start taking aspirin just for the sake of it because there are potential risks. On the other hand, if you have a

family history of heart disease and you have had a coronary and the doctor says that you should take aspirin because that will reduce your risk of a heart attack, you will undoubtedly take it. That is the trade off; the risk is that you may have a brain haemorrhage or some other complication. Therefore, every treatment should not be judged in general. Treatments are neither good nor bad: it depends on what the alternatives are. What is the benefit of treatment against the cost in this particular patient?

We asked the young people and their parents about it. We asked them what was worse the illness/the depression itself, the medication they were taking (because medications/combinations of medications also have significant side effects) or the ECT? And this was the response. 75% of the patients said that the worst thing was the illness; a further 12% said that the worst thing was the medication, and about 8% said the worst thing was the ECT. The parents said very much the same. We also asked them “now that you have gone through it would you have ECT again?” The majority of them said “yes, if it was necessary”. I wouldn’t have it just for fun, but if it was necessary I would certainly have it again, or I would recommend it to a friend or relative to have ECT if they were in a similar situation.

I would like to conclude with another vignette. Of course this is the best case scenario and not all patients are as successful as this one. On January 14, 1999 ECT was administered for the first time to Mary a fifteen year old youth who had been profoundly depressed and had attempted suicide on no fewer than 8 occasions over the previous twelve months. Nothing could alleviate her distress. Psychotherapy, various antidepressants, used alone and in combination with antipsychotics, had made no impact. In the past few days she had refused food and fluids. For her, death could not come soon enough. To her devastated parents she was barely recognisable as the once happy and outgoing only daughter. She was prescribed ECT and the improvement began after the second treatment. By the eighth treatment she was smiling, chatting freely with friends and looked forward to returning to school. Three years later she had commenced university and was reportedly enjoying the academic and social life there. ECT can produce dramatic results in these very severe cases, it can be lifesaving.

To conclude, ECT appears to be an effective short term treatment in the young, particularly for mood disorders, although there is no controlled study data. Side effects are common, but minor. There is no evidence that ECT has negative impact on long term functioning. And certainly the impact of the treatment is by far much less than the impact of the illness itself. One important aspect is that maintenance or relapse prevention treatment is required once the ECT is finished.

The impact of mental disorders in young people themselves, their families and society has not been recognised by the public and government. Research, particularly research on treatment is badly needed, specifically for young people because it is not good enough to test all these treatments in adults –white middle aged, middle west American adults, and generalise the results to elderly people, to women, to young people. Many of the drugs, not just drug use in psychiatry, used in medicine in general have not been tested in children.

Thank you very much.