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Adolescent mental health and risky sexual behaviour

Young people need health care that covers psychological, sexual, and social areas

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Risk taking among adolescents is of great concern to health professionals. Most of the morbidity among young people is related to behaviours that result in unintentional or intentional injuries, drug and alcohol misuse, tobacco use, sexual behaviour, diet, and physical inactivity.[1] Mental health problems in young people are common, with an overall prevalence of around 15%.[2]

Against this background, the observation in the paper by Ramrakha and colleagues (p 263) of the strong correlation between psychiatric disorders, substance misuse, and risky sexual behaviour in a birth cohort of 21 year olds is important.[3] This finding has been observed previously,[4] although in another study Bardone found risky sexual behaviour associated only with conduct disorders, and not with depression or anxiety, in a cohort of girls followed from ages 15 to 21.[5] Many studies have reported associations between mental health and the risk of HIV infection.[6]

Ramrakha et al's work is part of the Dunedin study, a multidisciplinary, population based study of a birth cohort that uses a diverse range of measures, including those for diagnosing mental health disorders. The study has reported comorbid psychiatric conditions in children and adolescents and has explored aspects of adolescent risk taking and delinquency.[7] Questions about mental health and behaviour were added initially at the assessment at age 11, and questions about sexual behaviour were added at the 18 year assessment. In this latter assessment 37% of the sample had one or more mental health disorders, while 58% of the men and 68% of the women reported having had sexual intercourse.

Risky sex may be an expression of anger

Ramrakha et al identified an increased probability of risky sex across a range of mental health diagnoses.[3] Even the most prevalent, clinical depression, was associated with increased rates of risky sex, sexually transmitted diseases, and early sexual experience. With regard to sexual initiation, other questions arise, such as the role of sexual abuse (also a major precursor to mental health disorder). With the addition of histories of sexual abuse at the recently completed assessment at 26 years of age in the Dunedin study, important new information is likely to emerge.

Many researchers have documented a high prevalence of risky sexual behaviour in association with substance misuse.[8] Stanton et al showed that increased use of alcohol and marijuana at younger ages was related to subsequent riskier sexual activity and increased drug misuse.[9] Alcohol and drug consumption may increase the likelihood that young people will engage in high risk sexual behaviour, as a result of impaired decision making, mood elevation, and the reduction of inhibitions.

Similar mechanisms may apply in the context of psychiatric impairment, a circumstance that can severely interfere with the ability to assess risk or to adopt risk reduction strategies. Risk taking, including risky sex, may also represent an indirect expression of anger or a mechanism, albeit dangerous, to exert some control over one's life. For a seriously disturbed young person, sexual activity might also be used for diversion, to relieve tension, and as a salve of affection seeking—a sort of self medication with sex.

Youths who drop out of school have complex needs

The public health and policy implications of this study relate to the identification of high risk groups and the need to understand the frequent clustering of risk among adolescents. Those with health risks often have multiple problems by the end of their high school education.[10] Youths who drop out of school have special and complex needs, with extremely high rates of sexual behaviour, mental health problems, and drug misuse.[11] The causal relations and direction remain to be elucidated, but the coexistence of drugs, risky sex, and mental health problems remains a consistent observation in epidemiological studies.[5 10]

In terms of prevention, we have learnt a great deal about adolescent risk and resilience and the importance of promoting healthy youth development and of fostering connections with family and school.[12] For clinicians, the challenge is to address the health issues of young people in a sensitive and comprehensive manner. One helpful intervention is the HEADSS exam, a mnemonic for home, education, peer activities, drugs, sexuality, and suicide.[13] This reminds clinicians of the importance of taking a "psychosocial biopsy" at each encounter with a young person and of focusing on concerns, feelings, and behaviours whatever the presenting complaint.

The determinants of mental health disorders and the associations between chronic conditions and risky behaviours in general are complex matters. Ramrakha's paper highlights the necessity of exploring sexual behaviour in young people with depression, anxiety, and other mental health disorders. The need for coordinated health care for adolescents and young

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people—covering psychological, sexual, and social aspects—is perhaps the most important point that should be made.[14]

David L Bennett *head*

Department of Adolescent Medicine, Royal Alexandra Hospital for Children, Sydney, Australia

Adrian Bauman *head*

Epidemiology Unit, Liverpool Hospital, Sydney, Australia

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Thiazolidinediones for type 2 diabetes

New agents reduce insulin resistance but need long term clinical trials

Insulin resistance, or more appropriately the reduced action of insulin, is a prominent defect in type 2 diabetes.[1] It is commonly present in people before diabetes has developed and has even been observed in euglycaemic relatives of patients with type 2 diabetes.[2] It has been proposed that the reduced action of insulin is fundamental to the cardiovascular risk factors that are part of the syndrome of insulin resistance.[3] Avoidance of obesity and adequate levels of physical activity are non-pharmacological cornerstones of the fight against insulin resistance. Before the introduction of troglitazone in 1997 metformin was the only drug able to sensitise target tissues (skeletal muscle, adipose tissue, and the liver) to insulin. Troglitazone was the first of a new class of drugs with direct insulin sensitising actions—the thiazolidinediones (also known as glitazones).[4] Troglitazone has now been superseded by more potent agents, rosiglitazone and pioglitazone.

Thiazolidinediones activate nuclear peroxisome proliferator activated receptor γ (PPAR-γ), which is expressed predominantly in adipose tissue.[4 5] Insulin action is improved through the increased transcription of genes in adipocyte differentiation and lipid and glucose metabolism. Insulin resistance is reduced when assessed with techniques such as the glucose clamp.[1] Blood glucose concentrations are reduced in concert with a fall in circulating insulin concentration. In addition, thiazolidinediones maintain the insulin content of β cells of the pancreas in animal models.[4] Improvements in glucose metabolism may be partly attributable to a reduction in the concentrations of circulating non-esterified fatty acids and reduced activity of the glucose-fatty acid (Randle) cycle.[4] Patients with insulin resistance often have elevated serum concentrations of triglyceride with low concentrations of high density lipoprotein cholesterol, and this dyslipidaemia contributes to their increased risk of atherosclerotic cardiovascular disease.[3] Thiazolidinediones increase the concentration of high density lipoprotein cholesterol, and rosiglitazone protects against endothelial dysfunction and lowers blood pressure in insulin resistant and hypertensive rats.[4] Although weight gain is common with thiazolidinediones, reports in humans of a redistribution away from visceral adiposity with troglitazone are of interest; this depot is closely linked with the syndrome of insulin resistance.[6] Thus, thiazolidinediones might reduce cardiovascular risk.

Troglitazone was available in Britain for a few weeks in 1997 before its distributor (GlaxoWellcome) withdrew the drug in response to reports from Japan and the United States of severe and unpredictable hepatoxicity. In the United States troglitazone was withdrawn in March 2000, when the Food and Drug Administration had received reports of 61 deaths from hepatic failure and seven liver transplants associated with the drug.[7] Troglitazone remains available in Japan and several other countries.

Last week saw the arrival of rosiglitazone in Europe. This drug, together with pioglitazone, has been available in the United States (and elsewhere) since 1999. Pioglitazone is expected to be launched in Europe at the end of the year. Both drugs have been granted limited indications in defined circumstances: in combination with metformin in obese patients with insufficient glycaemic control and in combination with sulphonylureas if metformin is either not tolerated or contraindicated (such as in renal impairment).[8] These stipulations contrast with the situation in the United States, where both drugs are licensed for use as monotherapy (when non-pharmacological measures have failed). Clinical trials show that combination therapy using a thiazolidinedione with metformin (the main action of which is to reduce glucose production by the liver) or a sulphonylurea (to increase endogenous insulin secretion) is particularly effective in lowering glucose concentrations.[4] Substantial reductions in insulin doses have been reported when thiazolidinediones are used in combination with insulin.[4] However, an increased incidence of cardiac failure was seen in

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