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Substance Abuse and Young People

Substance abuse by young people remains problematic in our society. This article discusses the approaches used in School Drug Education and Prevention Programs, and why they may not be effective in their current form. An alternate model for drug prevention education is explored. The term 'substance abuse', here, relates to misuse of illicit and licit drugs, alcohol and tobacco.

Whilst the use of illicit drugs is increasing, it is alcohol and tobacco which are associated with the greatest harm in our young people. Morbidity and mortality is due to toxicity from the pharmaceutical action of the drug itself, the mode of drug administration, and environmental factors associated with drug use such as crime, violence and poor standards of living.[1]

Drug use by children and young people has the potential to adversely affect physical and emotional health. Australia's policy response to the drug problem is to reduce the supply of drugs, reduce the demand for drugs, and reduce the harm caused by drug use.[2] The National School Drug Education Strategy, under the National Illicit Drug Strategy, includes education about illicit drugs, alcohol, tobacco, performance and image enhancing drugs, and other substances such as inhalants. The National Drug Strategy promotes programs aimed at reducing drug-related harm, referred to as harm minimisation. This approach is still widely favoured for school drug education.[3]

However, the Public Health Association of Australia (PHAA) suggest that most of the adverse consequences of illicit drugs are the result of harm minimisation policies, in that they lead to marginalisation, increased crime to fund drug habits, prison, and violence.[4] On the other hand McConnell suggests that harm minimisation is a philosophy that is protecting all Australians from the excesses of prohibition policies.[5]

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Counsellors from Mary of the Cross Centre, Fitzroy, a Drug and Alcohol agency set up by the Catholic Archdiocese of Melbourne to support families affected by drug and alcohol use. The agency has recently been integrated into Centacare, Melbourne. Counselling is available free of charge by contacting the Centre (03) 9495 6144

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Drug use by children and young people has the potential to adversely affect physical and emotional health

Substance Abuse Statistics

In Australia, there were an estimated 22,700 drug-related deaths in 1997 - 18,200 related to tobacco, 3,700 to alcohol and 800 to illegal drugs.[6] There is evidence that primary school children are increasingly experimenting with smoking.[7] It is illegal to sell cigarettes to persons under age 18 in all Australian states and territories. Under-age and binge drinking is of concern. Licensed premises continue to serve alcohol to people who are legally under-age or intoxicated.[8]

Education Programs - What is Useful?

Children, at around eight years of age, form favourable opinions about drinking and smoking before they try them.[9] The school environment has long provided a captive audience for the many drug education programs that have proliferated over the years, despite lack of evidence that they achieve their stated aims. Macroenvironmental factors, such as economic, social, and physical environments are suggested to have an influence from birth on risks of later drug use, long before young people are exposed to school-based drug prevention programs.[10]

It is suggested that drug education delivered to primary school aged children can be effective both in reducing drug use and in changing those factors that ultimately lead to drug use. Resilience-based approaches, such as building cognitive and social competency, pro-social and life skills[11], as well as promotion of healthy attitudes and enhancement of self-esteem improve effectiveness in terms of making an impact.[12] The incentive to deliver unproven drug education programs seems to stem not so much from efficacy in reducing substance related harm, but more as a means to attract grant money to fund research.

Some School Drug Education Programs are not Effective

Programs need to be evaluated to prove or disprove efficacy. If the desired outcomes are not achieved then the value of a program is questionable. Cost benefit analysis may show that some programs, whilst well-funded, may not achieve the desired effect in the long-term. Generic mass-exposure programs may not reach the most at risk, eg, homeless youth and early school-leavers. It is undesirable, given financial constraints, that ineffective substance misuse prevention education continues in its current form. Children and young people have the right to be aware of issues that may impact on their future wellbeing. Whilst it is true, developmentally, that there is increased risk-taking behaviour in youth, it is also true that many youth do not persist with this risk-taking behaviour beyond their youth. Pushing a drug education agenda that presumes that youth are homogeneous in their learning may not be the most suitable way to reduce drug-related morbidity. Children and young people are exposed to many risks in some form, but have self or family or local community imposed restraints that influence them not to engage or persist in risk-taking behaviour.

Munro suggests that drug education has not been shown to lead to reductions in the use of alcohol or other drugs, but it has been successful in improving students' knowledge and awareness.[13] Hawthorne questions the value of some drug education programs, given that there are contradictions in approaches - those that promote abstinence among young people and those that are based on a harm minimisation approach. He suggests that 'The predictors of adolescent drug use are social and personal; schools can have little effect on these' and that 'there is almost no evidence that drug education fulfills its public health purpose'.[14]

There is evidence that primary school children are increasingly experimenting with smoking

Some programs show some adverse outcomes. An evaluation of the Victorian Life Education program found no evidence that it reduced the uptake and use of tobacco, alcohol or analgesics by students. Indeed, students of these programs were found to be slightly more likely to use these substances - contrary to the program's public health aims of preventing adolescent smoking, drinking and unnecessary analgesic use.[15] An evaluation of a NSW program designed to reduce binge drinking showed that some attitudes worsened after the program.[16]

Brown describes the school drug education situation in the US.[17] In many respects the promotion of unproven programs there is similar to what happens in Australia, with community and industry support for 'no-use' drug prevention education maintained despite evidence that it is ineffective. He questions the ethics and independence of tobacco industry funded researchers evaluating drug education programs. Brown supports the idea of promoting the concept of resilience, which focuses on developing the interests and strengths of young people to enhance their healthy development. He states, 'Resilience represents a fundamental shift from a youth problem remediation perspective toward a pro-active youth development perspective'[18]

Risk Factors for Engaging in Substance Abuse Behaviour

Evaluations of school-based drug education programs that rely on individual attitudinal and behavioural change show limited success. Spooner suggests that '.. drug abuse is one of a number of risk behaviours, including truancy, delinquency and mental health problems, which share common antecedents that begin in the early years of childhood...shaped by macroenvironmental influences.'[19] Some factors are known to increase the risk of misusing substances. Some of these risk factors will be discussed in the following paragraphs.

economic, social, and physical environments are suggested to have an influence from birth on risks of later drug use, long before young people are exposed to school-based drug prevention programs

Drugs: Children form opinions about drugs from an early age. Early influencing factors include the home environment and recreational drug use by family members.[20] Substance use can be a mask for underlying social or psychological distress or disorder, such as depression or psychosis, or to help cope with difficult situations.[21]
Increased levels of exposure to risk factors in the young person's environment are associated with an increased prevalence of substance use, and lower levels of exposure are associated with a lower prevalence of substance use. [22]

Tobacco: There is correlation between smoking by parents and siblings, and uptake of smoking among children. Other factors include the smoking behaviour of one's best friend and wider peer group, stated intention among non-smokers to become smokers, prior experimentation with tobacco or other drugs, having money to spend, ready access to cigarettes, poor academic performance, getting into trouble at school, emotional and behavioural difficulties, and having abused or deprived backgrounds.[23] The tobacco industry, whilst changing labelling and packaging of tobacco products to provide less influencing incentives to smoke, has found other ways to target young people, via film, dance parties, nightclubs, fashion shows, e-mail and the Internet[24].

Alcohol: A recent US study found that the greater the amount of time children spend with alcohol-using parents, the more likely the children are to use alcohol. However, with parental control of underage alcohol use in the household, children appeared to have less involvement in underage alcohol use.[25] Alcohol advertising is prominent in Australia, with manufacturers sponsoring sporting events. Alcohol advertising is subject to the self-regulatory arrangements set up under an advertising standards code. The Alcohol Beverages Advertising Code says alcohol advertisements must not have a strong or evident appeal to children or adolescents and only depict use by adults who are obviously over 25 years of age[26]. Health warning labels have been generally ineffective in changing consumer behaviour, especially in at risk groups.[27]

Media: Television and other media influence children's and adolescents' health habits and behaviour. A US report shows that alcohol, tobacco, or illicit drugs feature prominently in prime time network dramatic programs, top-grossing movies, and half of all music videos.[28] There appears to be a dose-response relationship between television viewing and youth smoking through indirect advertising (actors smoking)[29]. Access to the Internet also exposes young people to similar subversive yet enticing advertising, often in the comfort of their own home.

The Case for Building Social Capital

Wise discusses the development of 'child-friendly' communities to reclaim children from risk. She suggests that there is persuasive evidence of a link between societal or structural risk factors grounded in fundamental economic and social forces placing children and young people at risk of developing psychosocial problems. Social inclusion and social support for families are protective factors.[30]

religiosity has been found to be a protective factor

Harm reduction, including abstinence, is popular from a public health viewpoint, which characterises substance misuse as a disease, and amenable to intervention and prevention. However, harm minimisation and abstinence-based programs are not working, yet attract huge amounts of funding. Human beings have voluntarily used substances throughout the millennia not only to indulge the senses just because we can, but perhaps also to make the world seem better in times of adversity. It is therefore probably hypothetical to argue that the substance abuse culture so pervasive in our society today can be separated from the human predicament. This does not imply an ethical solution ought not be sought.

It is encouraging that researchers are looking beyond individual behaviour and generic victim blaming, and finding evidence that redemption is possible beyond a public health or a criminal approach to the substance misuse problem. While religiosity has been found to be a protec-

tive factor with regard to health status, there is also evidence that it buffers the impact of life stress on early adolescent substance use.[31]

There are those who can abstain from, or stop substance misuse behaviour, and overcome adversity due not only to inherent resilient characteristics, but also due to supportive and thriving socio-cultural environments. Intervention and education strategies that enhance the growth of 'social capital' may help stem the rising morbidity associated with substance misuse by young people. This view is shared by those who support the concept of promoting skills training and resilience building in all environments, but especially in schools, as an alternate way to reduce the harms associated with young people's substance use. Research is increasingly showing that investing effort in early childhood shows positive effects in later life.

Intervention and education strategies that enhance the growth of 'social capital' may help stem the rising morbidity associated with substance misuse by young people

We send mixed messages to our youth. On the one hand we adults say that tobacco and alcohol is bad, whilst continuing to drink and smoke ourselves. We know that drugs are easily obtained if one is willing to pay. Perhaps we inadvertently push our youth into such behaviours by our own attitudes. We can't easily stop youth doing what is part of youthful culture as it is a culture that has been inherited and passed on. Nor can we ignore its consequences. Change comes slowly. Resources seem misdirected and wasted. Our mistake may be that current drug policy aims to make changes to the individual, when what is really needed is an all-inclusive philosophical evolution that changes the attitude of the community as a whole.

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Anne Moates ✣

CONFLICTS OF INTEREST, HEALTHCARE AND SCIENTIFIC INTEGRITY

We take a closer look at the problems surrounding, and possible solutions to, increasingly troublesome financial conflicts of interests occurring throughout clinical research

When big business meets scientific endeavour and clinical practice, conflicts of interest inevitably ensue. Medical practice abounds with them. The interaction between medical research and corporations is not new but has expanded considerably in recent years with the explosion of the Biotechnology sector. Over the past 7 years, for instance, investment in research and development by the top 20 pharmaceutical companies has more than doubled worldwide.[1] Now, while competing interests may not be inherently evil, they do need serious consideration when undertaking research. The question at hand is whether financial and other incentives can promote innovation without corrupting academic and ethical values. The patient's welfare, along with scientific integrity, should never be compromised. Secondary interests must not trump these primary values. Yet patient primacy is being persistently undermined through various institutional and individual conflicts of interest, most of them financial in nature. This has led to inflated costs to healthcare services, misinformation and reduction in the quality and credibility of scientific research. Such serious consequences lead to declining quality in healthcare and scientific endeavour: it is thus incumbent on us all to either eliminate or effectively manage any conflict of interest.

Muddied Waters

Pharmaceutical companies operate within the law when they market their respective products. Free enterprise allows them to look for new products and niches, be profitable and thereby honour their responsibilities to shareholders. Set against this is the fact that although medications save many lives around the globe, they are now very expensive to research and develop to the clinical stage. It has been estimated that drug companies will need to generate more than $25 billion in sales to maintain current levels of profitability, which will require industry leaders to develop between 24 and 34 new drugs per year.[2] It is now common knowledge that 'although legal restraints have curtailed some excessive industry financial incentives to physicians, the financial power of the big pharmaceutical companies continues to make them far and away the dominant vendors of clinical research.'[3]

Pharmaceutical product development mostly occurs in government-funded institutions and is usually dependent to some extent on public funds. Pressure is being brought to bear on these funds, however, not only by budget restrictions but the exponentially increasing cost of healthcare.[4] As a consequence, most health organisations readily accept generous contributions from pharmaceutical companies, often for educational programmes, free samples for needy patients and the ubiquitous 'free lunch'.[5] Now, such practices might seem all very well on the surface but there are inherent problems that health practitioners, researchers and patients should be made aware of. Apart from some of the explicit issues, such as objectivity, data integrity, academic freedom and the right to publish regardless of outcome, there is also an implicit, but very powerful, caveat to such gift giving. By its very nature, generosity *implies* reciprocity, whether tacit or not. Even small gifts such as pens or paperweights have been shown to influence prescribing behaviour in doctors.[6] Whether well intentioned or not, anything interfering or compromising the primacy of patient welfare must be identified as a conflict of interest and eliminated or, if appropriate, minimised.

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Institutional Conflict of Interests

Academic centres throughout the world have partnered with industry so that useful discoveries can be rapidly and efficiently brought to market. Academic discoveries are often patented by universities and then licensed to industrial sponsors for commercialisation. This should translate into greater patient access to therapeutic advances, and thus ultimately serve the public good. Yet the nature and scope of this economic partnership have outpaced what was originally intended and have developed into a complex relationship extending to all levels of academia.[7] In addition to licensing agreements with private industry, academic institutions may own stock in the sponsors of research, establish start-up companies to develop inventions in which they and their faculty members are major shareholders, and in some cases even develop their own products to be sold on the market.[8]

While such entrepreneurship might have accelerated sci-

entific innovation, it 'has also marred academia's reputation as an impartial truth-seeker, reduced public trust in the research enterprise, and resulted in a burgeoning literature on conflicts of interest.'[9] Furthermore, 'there is growing concern within research communities that institutional financial conflicts of interest can affect professional judgment in the same way as personal financial interests.'[10]

So how can such competing interests be effectively managed whilst still reaping the rewards from partnerships? Institutions could be more transparent in their transactions with corporations. Institutional directors should fully disclose all industry-related financial interests and relationships both for individual employees and the institution as a whole. Being straightforward would be in the public's interest and should help restore damaged credibility. A more comprehensive step would require institutes to develop policies dealing with financial conflicts of interest. A number of academic institutions, mainly in the United States, have developed procedures to guide staff in developing relationships with the private sector, as have many UN organisations.[11]

a renewed commitment to high ethical standards is more necessary than ever to ensure that societal trust in research is not eroded

There are now calls for even further measures: '[Ethical] management of institutional partnerships also might entail the physical separation of certain facilities, the placement of restrictions on information shared between investment and research staffs, and provision of oversight by independent review panels made up of persons who have expertise in intellectual property, finance, and research, but who are not financially or otherwise dependent on the institution. Through these means, it is possible to restore balance to industry-academia relationships, thereby promoting progress while maintaining public trust in research.'[12]

Professional Conflict of Interests

The overall number of physicians involved in clinical research has increased exponentially over the last decade or so, reaching more than 30 000 in the US alone (a 600% rise).[13] Few clinicians would wilfully allow patient welfare to be compromised for the sake of financial gain or career advancement. Nevertheless, there are inadequate mechanisms to ensure the overarching priority, that of patient welfare and scientific objectivity, is not compromised by secondary personal interests.

Conflicts of interest are commonplace in medicine. Most doctors have had their lunch paid for by a pharmaceutical company and write their prescriptions with pens provided by the industry. The problem for individuals is twofold: being aware of such conflicts of interest, yet not disclosing them, and being unduly influenced by secondary interests.

Clinicians should recognise that they, like anyone else, are subject to such conflicts. Nobody likes to think they are influenced by marketing strategies, but we all are. Although most doctors probably do not believe that they are influenced by gifts to change their prescribing habits, studies show otherwise.[14] Double-blind randomised controlled trials are necessary for testing new treatments not because the researchers are dishonest but because bias is pervasive and acts on everyone unconsciously. People and doctors alike deceive themselves if they think they fully understand the reasons for their behaviour. Therefore transparency is needed and the nature and source of any funding or incentives offered to clinicians should be disclosed to a potential participant as part of the informed consent process.

Of particular importance in this matter is the difference between the *roles* of research scientist and clinical practitioner.[15] Investigators act to generate scientific knowledge that potentially will result in future therapeutic benefits. Practitioners, on the other hand, are focused on the present health and welfare of patients. Accordingly, research can be designed primarily to yield scientific knowledge (such as phase 1 clinical trials), or may offer some direct medical benefit to patients (such as some phase 3 clinical trials). In each, risks and potential benefits must be weighed and informed consent obtained from prospective participants, after disclosure of all material risks. This conflict of roles has received increased attention recently.

Since patients might misconceive the nature of a research project, particular attention must be paid when researchers offer some potential medical benefit that can be integrated easily into a course of treatment. Although patients in these trials are offered a treatment of unproven efficacy, many mistakenly believe that they are receiving cutting-edge treatment guaranteed to improve their condition. This 'therapeutic misconception'[16] may be reinforced when subjects receive the experimental treatment from the same physician who has administered all of their care in the past, in contrast to being referred to a clinical investigator located in a separate academic setting.[17] This may hold true despite the fact that research subjects have provided their informed consent to participate in a trial.

In order to overcome such ethical problems, the doctor who has treated a patient on an ongoing basis should ideally not be responsible for obtaining that patient's in-

formed consent to participate in a trial conducted by the doctor. Patients often feel indebted to their doctor or may hesitate to challenge their advice to participate in research. Instead, after the doctor has identified that a patient meets a protocol's eligibility and recommends that a patient consider enrolling in the trial, it would be better if someone other than the treating doctor, such as a research nurse, were to obtain the participant's consent.

Doubtful of the prospect of a balanced alternative, clinicians have been forced to adopt attitudes at either end of the regulatory spectrum, which is not a healthy state of affairs. Some physicians stress the value of enterprise in medical research while advocating a laissez-faire approach to financial conflicts of interest in research, while others highlight the dangers to research and institutional integrity while emphasising the need to significantly reduce or to eliminate industry-academia relationships.[18]

Journals

Of particular concern is the fact that important scientific issues, such as authorship and the publication of study results, have become negotiable elements of research projects. Such attitudes/behaviour endangers the very heart of science. For individual clinicians, publication in peer-reviewed journals is a mark of prestige in the medical community, whereas for sponsoring firms it is an important means of disseminating information. For example, publishing favourable results often translates to wider use of a new drug. However, of even greater significance to the sponsoring firm, positive results will help ensure that a new drug or device will be approved by the Therapeutic Goods Administration (TGA) for safe and efficacious use within Australia, and the same can be said for its counterpart in the US-the Food and Drug Administration. Unfavourable results, by contrast, can put an end to the profitability of a product or greatly reduce its penetration of the market. It is in the sponsoring firms' interest, then, to prevent or delay the publication of negative results. Overall, control over publication can lead to conflicts that impact on both the welfare of human participants and the integrity of the research.

Control can also be misused in a way that compromises a clinician's judgment for enrolling a patient in a trial. It can also compromise the integrity of the scientific enterprise when rank of authorship is not determined according to an investigator's scientific contribution or when important results are not published. Therefore, when entering into a contract to perform research, the chief investigator should ensure that the study is valid and scientifically sound, and that the presentation or publication of results will not be unduly delayed, manipulated or otherwise obstructed by the sponsoring company.

Since 1993, the International Committee of Medical Journal Editors has produced a policy on conflicts of interest,[19] but several studies have shown that such conflicts are rarely declared in most journals despite good evidence that most authors have them.[20] The international committee strengthened its policy in 2001 by stating that journals should declare the exact role of sponsors (often pharmaceutical companies) in studies and decline to publish studies where the sponsors controlled the decision on publication.[21] This policy too has yet to be widely implemented.[22]

Conclusion

Many of the concerns in medical research that were identified over a decade ago[23] have persisted and may have increased, according to recent commentators.[24] Clinicians currently involved in biomedical research, and the numbers are increasing, face an important challenge. High societal expectations that the burden of disease and disability can be reduced through research, combined with continued investment in research and development in the Biotechnology sector, creates an atmosphere deficient in forces that can moderate the research imperative.[25] Yet a renewed commitment to high ethical standards is more necessary than ever to ensure that societal trust in research is not eroded, and that patients enrolled in trials do not become merely a means to an end.

What is the remedy? Clinical investigators and other researchers need to be wary of confidential and restrictive contracts which may alter the conduct, and resulting conclusion, of the study. Human Research Ethics Committees should continue to ensure that any financial competing interests are minimised or appropriately disclosed before approving research projects. Scientific journals usually insist on full disclosure for any industry support. The details should include the sponsor's role in the design, analysis, and reporting of the study data. Such guidelines, already issued some years ago, need to be adopted with greater vigour across the board. Greater safeguards against conflicts of interest might be needed as financial ties proliferate. Perhaps a particular section dealing with Conflicts of Interest could be added to the National Health and Medical Research Council's National Statement (on Ethical Conduct in Research Involving Humans). Such initiatives could then be expanded internationally so that the patients' health is paramount and always remains so.

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Michael Herbert

Important Notice from the Director re the Bulletin "online"

Caroline Chisholm Centre for Health Ethics commenced operating in March 1995. The Healthcare Institutions in Victoria which support and fund the operations of the Centre are the following: Bethlehem Health Care Inc., Caritas Christi Hospice, Mercy Hospice Care, Mercy Hospital for Women , Mt Alvernia Mercy Hospital, St Frances Xavier Cabrini Hospital, St Vincent's Hospital, St Vincents & Mercy Private Hospital and Werribee Mercy Hospital. The Centre's Board of Management is composed of representatives of these Healthcare Institutions and three coopted members. From the beginning the Board decided the Centre should publish well researched articles in its journal - *Chisholm Health Ethics Bulletin*. The articles were to be reader friendly and generally no longer than 2,000 words. Apart from complementary copies of the Bulletin for the staff of member Healthcare Institutions, it was meant to be a subscription journal. From then until now the subscription rate has risen only risen from $20.00 to $25.00.

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Our Web address is : www.chisholm.healthethics.com.au Dr. Norman Ford SDB

Abortion and the Risk of Breast Cancer

The rate of breast cancer among American women is about one in eight. Texas has just passed a law requiring doctors to inform women seeking an abortion that it may increase the risk of breast cancer. This article discusses the evidence of this risk and the ethical need to be objective in reporting any causal link.

Risk Factors Associated with Breast Cancer

While there are many factors associated with increasing risk of breast cancer, only a few are established beyond doubt. One is age, with the risk increasing with age, especially for women over 55 years. Another undisputed factor is a family history of breast cancer, especially in the maternal line. Research shows that the BRCA1 and BRCA2 genes are not only implicated in the onset of ovarian and colon cancers but are also associated with breast cancer. A third factor is a higher incidence of breast cancer in nulliparous women.[1]

Women are at 150 times greater risk of invasive breast cancer then men. A statistically significant increased risk of breast cancer is associated with the early onset of menstruation prior to the age of 11 years, the late onset of menopause in women over 55 years and first full-term childbirth after the age of 30 years. Another correlate of increased risk derived from epidemiological studies is age at first pregnancy.[2]

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Factors that Increase Risk

Since the 1950s, there has been epidemiological evidence supporting a positive association between induced abortion and breast cancer in women.[3] During the ensuing decades the presumption favoured a positive link, but the debate continued since the evidence did not seem to be consistent across all studies, nor did it convince the scientists and clinicians involved. In 1996 an important article reviewing multiple research studies to see if there was, indeed, an increased risk for breast cancer attributable to induced abortion was published by Joel Brind and his colleagues.[4] It was based on a thorough meta-analysis of 28 reports of case-control studies published over the previous 40 years. The researchers believed their conclusions were valid and that bias in self-reporting was a not an issue. They suggested that the surging levels of estrogen in the first trimester could significantly increase the risk of breast cancer if the pregnancy is aborted.[5] They found that women who had an induced abortion were 1.3 times more likely to contract breast cancer than women who did not have an abortion.[6] They concluded that their results `support the inclusion of induced abortion among significant independent risk factors for breast cancer, regardless of timing of abortion relative to the first term pregnancy.' [7] This study boosted the presumption in the public perception that there was a significant link between induced abortion and breast cancer. As a result of this study and out of a sense of duty to warn women of this link between induced abortion and breast cancer, the Fact Sheet posted on web site of the US National Cancer Institute (NCI) mentioned this increased risk factor until March 2002.

Overall Link between Abortion and Breast Cancer Questioned

In 1997 Mads Melbye and his colleagues published their study of all Danish women born between 1 April 1935 to March 31 1978 with the relevant information on the number, dates and gestational age of each induced abortion obtained by linkage from the National Registry of Induced Abortions.[8] Likewise by linkage with the Danish Cancer Registry, all new cases of breast cancer were identified. From a total of 1.5 million women, they found there were 370,715 induced abortions among 280,965 women, of whom 10,246 were identified to have breast cancer. They found `the risk of breast cancer in women with a history of induced abortion was not different from that of women without such a history, after potential confounding by age, parity, age at delivery of first child, and calendar period was taken into account' -- the risk odds ratio being slightly less, 1 against 1.06.[9] A similar Swedish study on all women born in Sweden between 1 January 1973 and 31 December 1991 was published in 2003 by Gunnar Erlandsson and colleagues and it concluded in much the same vein: `our study strengthens the evidence that neither induced not spontaneous abortions increase the risk of breast cancer.' [10]

Quest for a Solution

An analysis was made of a case-control study of the association of induced abortion and breast cancer using pro-

spectively recorded exposure information of women born between 1973-1991 from the Swedish Medical Birth Register. Cases were identified by linkage with the Swedish Cancer Registry and controls were randomly chosen from the birth register. The study showed overreporting of induced abortion by the cases compared to extensive underreporting of abortion by controls.[11] Apparently women who know that they have breast cancer are more likely to reveal that they have had an induced abortion than controls who do not if they have breast cancer. Naturally self-reporting has been found to be less reliable. This is understandable, granted the likelihood of inaccuracies relative to the data of induced abortions due to the memories, emotions and social stigma involved. This same reporting bias has also been found in the case of abortion surveys.[12] This is the main criticism of Brind's meta-analysis: if reporter bias flawed the original studies, this bias would also flaw his results. Both the Melbye and Erlandsson studies relied on data from the relevant national registers and not on self-reporting and they included all women born in the time-frame of the studies. Prospective epidemiological studies are considered by many to be more accurate and robust than retrospective research. The view that induced abortion has little influence on breast cancer is confirmed by a study of Chinese women who have induced abortions without feeling stigmatised.[13]

Brind and Vernon Chinchilli countered by pointing out serious flaws in the above mentioned Swedish and Danish studies: their short follow-up period of younger women and misclassification errors due to the use of birth registers from 1935-1978, cancer registers only from 1968 and the abortion registry from 1973 whereas abortion had been legalised in Denmark since 1939, resulting in 60,000 elderly women who had abortions being classified as abortion negative. Brind and Chinchilli claim these faults account for the striking `underestimation of the real induced abortion association in Denmark.' [14]

Granted the uncertainty of the association of induced abortion with breast cancer, the National Cancer Institute convened a meeting of more than 100 world experts involved in this area to attend The Early Reproductive Events and Breast Cancer Workshop, 24-26 February 2003. Participants included breast cancer experts, epidemiologists, clinicians, basic scientists and breast cancer advocates. They evaluated the evidence of indications of pregnancy related to cancer, the biological changes resulting from pregnancy that may influence the risk of breast cancer and the biological mechanisms identified from animal studies.[15] As a result of this Workshop it was recognised that the following epidemiological findings were well established:

- Early age at first term birth is related to lifetime decrease in breast cancer.
- Increasing parity is associated with a long-term risk reduction, even when controlling for age at first birth.
- The additional long-term protective effect of young age at subsequent term pregnancies is not as strong as for the first term pregnancy.
- A nulliparous woman has approximately the same risk as a woman with a first term birth around age 30.
- Breast cancer is transiently increased after a term pregnancy.
- Induced abortion is not associated with an increase in breast cancer risk.
- Recognised spontaneous abortion is not associated with an increase in breast cancer risk.' [16]

After reviewing all the available evidence its concluding recommendation is that `available evidence on an association between induced abortion and breast cancer is inconclusive'

The NCI's Boards of Scientific Advisors and of Scientific Counsellors unanimously approved these findings on 3 March 2003. The Workshop admitted there were both epidemiological and clinical gaps yet to be researched and bridged. They also detailed directions for future research. The March 2003 NCI Fact Sheet was accordingly updated and stated that `having an abortion or miscarriage does not increase a women's subsequent risk of developing breast cancer.'

Brind was present at this Workshop but says no provision was made for open discussion of opposing views. He was disappointed and published a minority report which is highly critical of the procedures adopted at the Workshop. His theory is based on the fact that estrogen has a proliferative effect on breast tissue as it stimulates ductal growth. Most breast cancers are ductal carcinomas. Brind refers to the `role of estrogen as a stimulator of cellular proliferation, as well as the known genotoxic effects of certain estrogen metabolites'.[17] Since the levels of estrogen are very high during the first two trimesters of pregnancy, an induced abortion would deprive women of the protection derived from high levels of progesterone present at full-term pregnancy.[18]

Some elements of Brind's theory are confirmed by the conclusion of Isha Mustafa and Kirby Bland that `estrogen must be an influential and essential hormone to breast growth and tumorigenesis' and that women `who underwent induced abortions at 12 weeks or greater gestation had an increased risk for breast cancer development' compared to those who had an abortion at less than 7 weeks.[19] Mustafa and Bland cite studies which suggest a mechanism for reducing the risk of breast cancer: pro-

gestin, which is produced late in pregnancy, decreases estrogen-stimulated growth of breast cells and promotes differentiation which thereby lessens the risk of cancer.[20] It seems Brind is right to say `the great surge of the hormone estrogen could indeed be responsible for increased risk if the pregnancy is aborted. ... and that it is a matter of settled science ... that full-term pregnancies lowers a woman's long-term risk of breast cancer.' [21] His theory is also supported by the conclusion of an unrelated study on oral contraceptives (OCs) and breast cancer: `Our findings suggest that the increased risk of breast cancer related with [the] total duration of OC use is due mostly to [the] estrogen component.' [22]

Conclusion

The U.K. Royal College of Obstetrics and Gynaecology in March 2000 published evidence based guidelines on `Care of women requesting induced abortion', and is now preparing an opinion paper on abortion and breast cancer. After reviewing all the available evidence its concluding recommendation is that `available evidence on an association between induced abortion and breast cancer is inconclusive'.[23] The specific point was made that `Brind's paper had no methodological shortcomings and could not be disregarded.' [24]

The risk factors for breast cancer are many and varied; it is difficult to unravel all its intertwined causes. It seems more prudent to accept the opinion of the U.K. RCOG that the link between abortion and breast cancer is inconclusive. In the light of all the evidence, it would be true to say that women who have an induced abortion during their first and only pregnancy would certainly be at an increased risk of breast cancer. It is also true to say that if women who have had an abortion were to have one or more subsequent full-term pregnancies, they would benefit from a reduced risk of breast cancer. In short, while full-term pregnancies do decrease the risk of breast cancer, an induced abortion may well deprive a woman of some protection against breast cancer, but not significantly increase its risk.

Ethical Considerations

The fact that some in the community, myself included, morally disapprove abortion, while others approve it, does not alter the ethical imperative to provide accurate information on the increased risk of breast cancer, if any, due to induced abortion. If the evidence suggests there are reasonable grounds for an increased risk, this should be communicated to women seeking an abortion. It is, then, necessary to address and resolve the remaining differences found in studies on this matter. More flawless research should provide the answers. Women have a right to know the truth, and fears that induced abortion may not appear safe should not be allowed to obscure the facts.

END NOTES

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Norman Ford SDB ✣

BOOK REVIEW : *Culture of Life-Culture of Death*

Gormally, Luke (ed.) London: The Linacre Centre, 2002

Major contributing authors include Cardinal Thomas Winning, Archbishop George Pell, Bishop Donal Murray, Sister Miriam Duggan, Fr Dermot Fenlon, John Finnis, Fr Anthony Fisher OP, Jorge Garcia, Laura Garcia, Robert P George, Fr Richard Hogan, Mgr. Livio Melina, Fr Carlo Lorenzo Rossetti and Robert Walley.

This indepth book consists primarily of a collection of essays detailing the proceedings of an international conference on 'The Great Jubilee and the Culture of Life' held in July 2000 at Cambridge, U.K. Each essay contributes to the book's central thesis which attempts to delineate the contemporary struggle between two diametrically opposed philosophies: 'the orthodoxy of contemporary liberal secularism' and 'the orthodoxy of the Judaeo-Christian moral tradition.'(p.1) Throughout the chapters theories are developed which clearly portray the clash between these two conceptual cultures.

The arguments raised vary from a down-to-earth approach to the quite prosaic. Indeed, much of the work is highly academic and may perhaps be more suited to philosophical and theological scholars than the casual reader. Nevertheless, most essays are lucid accounts which convincingly expose the troubling tenets underpinning much of today's liberal society. An excellent exposition of this is found in John Finnis' essay, 'Secularism, the root of the culture of Death'. He contends that this pervasive subculture subsists on two dispositions: not regarding *all* human beings as people, deserving of dignity and equal treatment, and consequent public willingness to kill such an 'underclass'.(p.23) Emphatically opposed to this are the teachings found both in the *Catechism of the Catholic Church* and in *Evangelium Vitae* the **Culture of Life**. Its central principle, and consequences, are expounded from different angles by each author in turn. In Robert P George's paper, what is paramount is 'the equality in dignity of all human beings-without regard to age, size, stage of development, or condition of dependency.'(p.51)

Occasionally some essays do run the risk of being overly semantic, especially the contribution by Kateryna Fedoyka Cuddeback on Population Control, which fails to adequately address the vital global issue of sustainability. And Rossetti, in a later chapter, although making telling points, struggles to make them relevant to the central debate concerning the opposing cultures. Perhaps such exhaustive analyses would best suit academics. After all, as Richard Hogan reminds us in simple terms, from *Genesis* through to *Revelation*, the very heart of the gospel is one of life.

Michael Herbert

Caroline Chisholm Centre for Health Ethics
7th fl., 166 Gipps Street East Melbourne Vic 3002
Tel (03) 9270 2681 Fax (03) 9270 2682 email: ccche@mercy.com.au

www.chisholm.healthethics.com.au

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Director/Editor: *Rev. Norman Ford SDB STL PhD, Adjunct Professor, Australian Catholic University; Lecturer, Catholic Theological College / Melbourne College of Divinity; Senior Honorary Research Fellow, Monash University.*

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