

On being treated as a person

A review of non-physical interventions
to improve outcomes for adolescents
and young adults with cancer

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January, 2006

The preparation of this report was supported by Canteen -
The Australian Organisation for Young People Living with
Cancer

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17 January 2006

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1 Introduction and general context

1.1 The purpose and scope of this review

This review has the aim of identifying non-physical interventions and psychological factors that are likely to influence outcomes for adolescents and young adults (AYA) who have cancer. While focusing on patients, it also considers adolescents and young adults who have a family member with cancer, i.e. all those who may be considered 'living with cancer'.

It has been conducted to assist identify and prioritise programs that could facilitate better health outcomes for this group.

In fact the literature focused on adolescents / young adults is relatively small, and much of what is discussed is based on studies of children and adults. As a result much of this review has relevance to people with cancer of all ages.

The review considers psychosocial treatment interventions, the healthcare environment within which treatment occurs (e.g. the organization of clinical care, the patient-doctor relationship), and psychological factors. It is not a systematic review in the sense of Gray (2001) - it is not confined to randomised controlled trials, nor does it include all relevant papers and systematically appraise the quality of all papers using explicit quality criteria. It does aim to identify the range of elements that could potentially and beneficially be targeted by a comprehensive and effective program, and single out interventions that would appear likely to be more effective.

Note: 'psychological' and 'psychosocial' can be used interchangeably in the literature, referring to either an external intervention or a mechanism within the targeted individuals.

1.2 The effects of cancer and its treatment for cancer sufferers in general

Physical effects

The patient's experience of the physical aspects of cancer progression and treatment include pain, nausea, emesis, and other treatment-related side effects (Owen et al 2001). Chronic pain may affect patients at all stages of cancer management, and is often poorly controlled - ninety percent of cancer patients are believed to be manageable with relatively simple medical interventions, while in practice less than 50% may experience effective pain relief. To account for this discrepancy in pain management, a number of psychosocial factors have been implicated. Low medication compliance, anxiety, depression, and beliefs about pain have been reported as predictive of patient pain levels (Thomas and Weiss 2000).

Fatigue symptoms are also often found in cancer patients (Schwarz, Krauss & Hinz 2003), and those who report fatigue may be more likely to have significant psychological symptoms (Bennett, Goldstein, Lloyd et al. 2004).

Cancer treatment can be as physically taxing as the disease itself (Maddox & Maddox 2005). The effects of cancer treatment include nausea, mouth ulcers and eating difficulties. Chemotherapy dries up bodily fluids including saliva, with the consequence that many patients have multiple cavities, increased plaque, and lose dental fillings. The lining of the mouth is also affected by medications, which can result in ulceration of the mouth and

tongue that can make eating, drinking, and swallowing almost impossible in the worst cases, and reducing appetite and comfort in others. Radiation of the upper torso can cause swelling of the esophagus which also creates problems with swallowing. Lack of appetite is a very serious and common problem - food often tastes like metal and the smell of food cooking can be nauseating. Dry skin is another common result. Chemotherapy and radiation can result in dryness of the skin all over the body, including the vagina and eyes, knee and elbow joints (Maddox & Maddox 2005).

Emotional and social effects

While the physical effects of cancer and its treatment can be extremely unpleasant, patients rate the emotional, functional, and social effects as having a greater impact on quality of life than the physical. The effects of cancer include distress, functional and social impairment. Distress generally refers to the patient's experience of the psychological impact of cancer and its treatment (includes depression and anxiety), while functional and social impairment concern the adverse impact of cancer on activities of daily living and self-care, ability to work, and ability to maintain social activities and relationships (Owen et al 2001).

Cancer patients have many unmet needs, including the need for psychological support, information, and physical and financial assistance. Families and friends also need to be able to access reliable information and emotional and psychological support (Jefford et al 2005).

Historically doctors have paid less attention to these areas. Maltzman (2005) quotes a Dr. Caggiano, an experienced oncologist whose wife contracted breast cancer: "I think patients expect to get a good doctor who knows the right treatment, but they also need physicians to pay more attention to quality of life. ... We as physicians do not pay enough attention to the quality of life of our patients, but for them it is the most important aspect. Fatigue, loss of hair, loss of taste, etc, these are all issues they must deal with when they leave our office. Going through this illness with Biba [his wife] certainly gave me a much greater appreciation for the importance of paying attention to such issues."

Patients experience many and diverse fears and concerns. These fears include fear about cancer spreading (Lintz, Moynihan et al. 2003). Dr. Caggiano was again quoted as follows: "I think another difficult part was [that] after the diagnosis was made, the feeling that every little ache, bump, and pimple was cancer. I still often have to reassure [her]" (Maltzman 2005).

Other concerns include: anxiety at having to go through further chemotherapy or radiation therapy, self consciousness about appearance (despite being aided by e.g. wigs, prostheses, reconstructive surgery), general loss of confidence, feelings of fragility and insecurity, feeling of being a burden to others (Verde et al 2004); and sexuality issues (Lintz et al.2003; Verde et al 2004).

Patients may experience distancing from friends/ family. Verde et al (2004) reported how support from family and friends was a source of great comfort and assistance to women with breast cancer. Those who did not receive it were greatly hurt and disappointed when friends who did not know how to offer support withdrew, or support from other family members was not forthcoming.

The diagnosis and treatment of cancer is also likely to be associated with significant financial costs. Verde et al (2004) reported that women with breast cancer experienced a significant

financial burden along with its diagnosis and treatment, which represented yet another stressor.

1.3 Cancer and adolescents/ young adults (AYA)

Many cancers in adolescents and young adults are more usually seen either in adult practice or represent rare cases of 'late onset' paediatric cancers. The natural history of the cancers can also be different, eg. from when occurring in adults (Michelagnoli, Pritchard, and Phillips 2003).

This mixed picture can in turn be associated with a lack of integrated treatment (see Section 3.1), which may be responsible for poor treatment outcomes. In introducing a special issue of the European Journal of Cancer, Michelagnoli et al (2003) described adolescents and young adults (AYA) as forming a 'lost tribe', a coherent group previously largely neglected but with a particular need for privacy and age-appropriate treatment facilities. They also noted that the problems of the 'young adult', up to her/his late 20s, are much the same as the adolescent, 'with an equal need for candour, tact, combined with respect by carers'.

In essence young people with cancer have the problems characteristic of adolescence as well as those of cancer (Harris & Zakowski 2003 reported finding the high level of distress of adolescents where a parent had cancer as being not that different to adolescents in families without cancer!). In the context of breast cancer, Shannon and Smith (2003) noted that while it was very rare in adolescents and very young women (less than 1% of all breast cancer cases occur before age 30 years), they were particularly vulnerable to emotional distress and psychosocial problems and should be provided with appropriate support.

The remainder of this report outlines the main ways in which support for adolescents living with cancer can be provided.

2 The effect of cancer on adolescents/ young adults and their families

2.1 Adolescent/ young adult (AYA) cancer patients

(a) Morbidity and mortality - increasing incidence, and improved survival, but lower-rate of improvement in survival than children or older-adults

Compared with children, adolescents have been reported to have a higher incidence, a lower mortality reduction, and a worse outcome in a number of cancers (including leukaemias, sarcomas and Hodgkin Lymphoma; Herbertson and Hancock 2005).

Regarding incidence Albritton and Bleyer (2003) concluded that cancer in adolescents 15–19 years of age occurred at nearly twice the rate observed in 5- to 14-year-olds, and the incidence has been increasing. Selby et al 2005 (cited Herbertson and Hancock 2005) analysed the trends in cancer incidence (and mortality rates) per 100,000 population in 15–24 year olds in Great Britain between 1971 and 2002, and found an increase in incidence from 16 per 100,000 per annum to 24 new cases per 100,000. In Victoria (Australia) cancer incidence increased by 30% in those aged 10–24 years between 1993 and 2001, a greater increase than in any other age group (Mitchell, Scarcella, Rigutto et al. 2004).

At the same time survival in young people with cancer in western countries has been improving. Selby et al 2005 (cited Herbertson and Hancock 2005) found mortality in Great Britain in this age group had fallen over the last 30 years, suggesting the outcome of young people with cancer is improving with time. Levi et al.(2003) also reported finding a 40% decrease in total cancer mortality in 15–24 year olds in Europe between 1965 and 1998, which they attributed to improved treatment and inclusion in multi-centre clinical trials (mortality reductions were not as marked in Eastern European countries, attributed to treatment delays and more limited enrollment in clinical trials).

Increasing survival for young adults was also found by Reedijk et al. (2005), who investigated incidence, treatment and survival of children (0–14 years) and young adults (15–24 years) with cancer in an area in the Netherlands between 1973 and 1999, followed up until July, 2003. As with others they found that world-standardised incidence rates for both children and young adults increased until 1997 (and then flattened: lymphomas in children and testicular malignancies and melanomas in young adults seemed to increase in particular), but for all cancers combined the 10-year survival rate for children improved from 53% in 1973–1982 to 75% in 1993–1999, while the 10-year survival rate for young adults improved from 57% to 81%.

On the other hand Bleyer et al (Bleyer, Budd and Montello 2005; Albritton and Bleyer 2003) reported U.S. data indicating that adolescents are lagging behind in survival gains made in recent decades by both children and those aged 45+ with cancer. Gatta et al (2003) also found that adolescents (15–19 year olds) had significantly worse survival than young adults (20–24 years) for all malignancies combined when data from 56 adult cancer registries across Europe was analysed in 2003.

Note that different cancers have different survival patterns, for example invasive breast cancer in women less than age 35 years (very rare in adolescents) is more aggressive and is associated with a worse prognosis than in older premenopausal women (see Shannon and Smith 2003). In contrast, with Hodgkin Lymphoma (one of the most common cancers in adolescents) survival tends to lessen with age: Gatta et al (2003) using the EURO CARE-3 database found that adolescents differed little in survival from young adults but had poorer

survival when compared to children, while Clarke et al (2001) found disease- specific survival was similar among patients aged 15–44 but worsened with increasing age over 45 years of age (although not adjusted for coexisting co-morbidity).

See Corazziari et al (2004), Brenner et al (2004), regarding determining age-standardised survival rates.

(b) Diverse physical effects of cancer and treatment

Adolescents receiving cancer treatment may experience a number of treatment related acute and late effects. For example, adolescents with Hodgkin lymphoma may be treated with chemotherapy agents that can cause a range of severe side lung and heart effects (eg. pulmonary fibrosis, cardiomyopathy), and radiotherapy has been associated with significant increased risk of secondary cancers, as well as heart disease, impaired lung function, and growth and thyroid abnormalities (Herbertson and Hancock, 2005). Those treated for osteosarcoma can experience reduced functional mobility (Marchese et al. 2004).

Bleyer (2002) observed that ‘the acute and delayed toxicities of cancer therapy are undeniably among the worst associated with the treatment of any chronic disease. The acute adversities of nausea, vomiting, mucositis, alopecia, weight gain (or excessive loss), acne, bleeding, and infection are generally harder for adolescents than either younger or older persons to cope with. Delayed complications may be less concerning to patients in this age group during treatment, but after therapy has been completed they can be fearful and real.’

Because of the risk of long term side effects for young patients, lifelong follow-up has been advocated (Herbertson and Hancock, 2005).

(c) Infertility

Infertility is a major possible consequence of cancer treatment in both males and females (eg. Herbertson and Hancock 2005, Zebrack et al 2004, Shannon and Smith 2003, Schover et al 1999, Maughan and Clarke 2001).

Both chemotherapy and radiotherapy can impair fertility, and treatment for certain cancers can be sterilising (Wallace and Brougham 2005).

The evidence to date is that many young people are at risk of receiving inadequate counselling regarding reproductive effects of treatment.

Zebrack et al (2004) note that while the effects of cancer and its treatment on reproduction and fertility are well-documented, knowledge of the psychosocial and behavioural ramifications of these outcomes for young adult survivors of childhood cancer is limited. They reported interviewing childhood cancer survivors and found fifty-nine percent reported uncertainty about their fertility status and only half recalled mention of potential reproductive problems associated with their cancer treatment.

Schover et al (1999) reported interviewing cancer survivors age 18 or older (mean age at diagnosis was 26 years and the mean time since diagnosis was 5 years), and administered a measure of health-related quality of life (SF36) as well as questions such as medical background, reproductive and fertility history, and concerns about having children after cancer. They found only 57% received information from their health care providers about

infertility after cancer, only 24% of childless men banked sperm before treatment, and many had significant anxieties and insufficient information about reproductive issues.

In the U.K. it was reported that only 34% of teenagers who answered a Teenage Cancer Trust (TCT) survey were provided with fertility counselling, and in only 29% of these was it provided before treatment started (Teenage Cancer Trust 2004, cited Herbertson and Hancock 2005).

Lockwood (2004) described how for most women less than 40 years old maintaining fertility is a vital issue. However while it was known that chemotherapy often induces menopause, there has been little research interest in premature menopause, probably because the bulk of women who have breast cancer are postmenopausal.

Herbertson and Hancock (2005) point out that it is the role of the treating physician to identify and discuss consequences for fertility in male and females, provide counselling and support where applicable, as well as exploring fertility-preservation options. It is vital that adolescents are made aware of the risk of infertility and counselled appropriately.

(d) Disruption of education

As observed by Herbertson and Hancock (2005), treatment can lead to serious disruption in education with adolescents missing coursework and exams at a time that is often crucial to future career development. Hence it is important that teenagers are supported in getting extra help with their coursework or arranging to postpone exams until the bulk of their treatment is over. This requires close liaison between their school and the healthcare personnel involved in their care.

At the same time Stern et al (1991) found that adolescents with cancer showed a greater career maturity than healthy adolescents, perhaps as a result of coping with and surviving a potentially life-threatening disease leading to an altered perspective on life. Stern et al advised those involved in the care of adolescents with cancer to encourage them to fully explore their career options.

(e) Quality of life and long term psychological effects

Discussing adolescents with Hodgkin lymphoma or HL, Herbertson and Hancock (2005) observed that a diagnosis of cancer is a life-changing event for a patient of any age, but that for adolescents a diagnosis of HL can have major implications for their psychological well being: at a time when friends are beginning to make future education and career plans, and when self esteem, identity, independence and social life are being developed, teenage cancer patients are faced with uncertainty, and possible isolation from their peers. Hence a diagnosis of cancer can have a significant impact on relationships with peers, family, and coping skills. Moreover treatment related hair-loss and Hickman lines (chemotherapy implants) can disrupt body image at a sensitive time of development and lead to low self esteem when compared to healthy friends (Herbertson and Hancock 2005).

However there is evidence to indicate that while in the first year following diagnosis many patients may present with anxiety or depression, this is often short-lived, and teenagers who are able to accept and cope with their disease can use the experience to gain a greater appreciation of life (Devlen et al 1987, Penson et al 2002). They may also mature faster than their peers (Daiter et al. 1988).

Boyes, Girgis, and Zucca (2004) in an Australian study found that five years after a cancer diagnosis survivors' levels of anxiety and depression were similar to that of the general population, with good quality of life relative to normal values.

However while many young survivors of cancer appear to adapt well complete recovery is unlikely. Degree of recovery is likely to vary with the type of cancer, severity and toxicity of treatment.

A study by Madan- Swain et al. (1994) compared adolescent cancer survivors with healthy controls. They found the cancer survivors reported no major difficulties in social competence, overall coping, and family communication, but did report body image disturbances and adjustment difficulties.

Carpentieri et al (2003) investigated a cohort of adolescents who had previously been treated for a brain tumour. They found that while self-report suggested no problems in psychosocial and behavioural functioning, parent and teacher reports suggested problems in attention, leadership, and learning problems.

Langeveld et al (2002) reviewed empirical studies published up to 2001 on the quality of life of young adult survivors of childhood cancer. They concluded that a number of clear trends could be identified, namely:

- (a) most survivors reported being in good health, with the exception of some bone tumour survivors;
- (b) most survivors function well psychologically;
- (c) survivors of CNS tumours and survivors of acute lymphoblastic leukaemia (ALL) are at risk for educational deficits;
- (d) job discrimination, difficulties in obtaining work and problems in obtaining health and life insurance were reported;
- (e) survivors have lower rates of marriage and parenthood;
- (f) survivors worry about their reproductive capacity and/or about future health problems their children might experience as a result of their cancer history.

Herbertson and Hancock (2005) argue that psychosocial support individualized to each patient's needs is vital if adolescents are to receive adequate support through their diagnosis and treatment, and this should continue to be available through long-term follow-up.

2.2 AYA children of cancer patients

Visser, Huizinga et al (2004) reported an extensive review of studies regarding psychosocial consequences for children who have a parent diagnosed with cancer, and on variables that influence these children's functioning. The majority of the studies were performed among families of breast cancer patients, the most common disease in parents with children.

While some studies found no difference between children of parents with cancer and controls (e.g. Harris and Zakowski 2003), the evidence overall was seen to support the following:

- adolescents had more emotional problems than found in the norm group.
- adolescents were not found to differ in social and behavioural functioning from control or norm group peers
- adolescents have more emotional problems than school-aged children

- adolescent daughters of mothers with cancer seemed particularly vulnerable, with more emotional problems than adolescent sons in general and adolescent daughters of fathers with cancer (perhaps due to identification with their mothers and increased role responsibilities)
- a positive relationship between the psychological functioning of the parent and the child
- open communication between the family members and greater marital satisfaction between the parents had a positive effect on child functioning.
- questionnaires used in quantitative studies were likely to be insensitive to the specific problems children encounter when a parent has cancer
- parents tended to show a higher level of agreement on their childrens' behavioural than emotional problems (perhaps because behavioural problems were easier to detect)
- the reviewed intervention studies all reported positive outcomes, but their effectiveness has not been examined in randomised controlled trials.

Future research was recommended to:

- include quantitative studies with large numbers of respondents (e.g. to investigate differences between children whose parent has a good prognosis vs. poor prognosis), and longitudinal studies to gain more insight into causal relationships and long-term consequences
- investigate the functioning of children of fathers diagnosed with cancer.
- develop and validate an instrument that specifically measures the psychosocial functioning of children whose parents were diagnosed with cancer.

In a related study, Huizinga, Visser et al. (2005) investigated stress response symptoms in children of parents diagnosed with cancer. Participants included 220 adolescents (aged 11–18 years) and 64 young adults (aged 19–23 years) from 169 families. They found that:

- 35% of the daughters and 21% of the sons reported clinically elevated stress response symptoms
- daughters, particularly those whose mothers were ill, reported significantly more intrusion ('persistent episodes of re-experiencing the stressful event through recurrent, intrusive and distressing thoughts and nightmares'); and avoidance ('withdrawal from friends and usual activities') than did sons
- daughters whose parents suffered from recurrent illness reported more symptoms than did daughters whose parents had a primary disease

Verde et al (2004) in an Australian report of families with breast cancer describes how young children and adolescent family members often felt traumatised by the change to their family life and the risk to their mother (see also Breast Cancer Network 2004). For an account of the impact of the death of a parent on a teenager see Christ (2002).

2.3 AYA siblings of cancer patients

Houtzager, Grootenhuis and Caron (2004) investigated psychosocial adaptation to cancer in a brother or sister. Nearly one third of the teenaged siblings (12-18) still reported problems such as depression, anxiety or social withdrawal two years after the diagnosis of their sibling's cancer. However impaired functioning in younger children (7-11) was expressed in social relationships, emotions and physical functioning, impaired functioning in the

adolescent group was expressed in emotions only: it was suggested this was due to adolescent siblings being more self-sufficient and able to seek support from peers.

Houtzager et al. suggested that adolescents might profit from meeting peers with whom they can ventilate feelings and find support. Internet chat-rooms were suggested as easily accessible and feasible for this purpose.

2.4 The family as a whole

While there is little evidence of research into the families of adolescents per se, there is ample evidence that the stresses of cancer in the family affect all members. Psychological stress is severe. Carers can experience high levels of stress and anxiety as well as restricted social relationships and practical problems related to disease management and finances (Ferario et al 2003). Indeed there is evidence that patients' and carers' psychological distress are comparable. In a meta-analysis of 21 independent samples of cancer patients and their carers, Hodges, Humphris and MacFarlane (2005) reported a positive association between patient and carer psychological distress, and that patients and carers did not experience significantly more or less psychological distress than one another. They suggested that early intervention with the patient and their carer could prevent later development of psychological distress in both members.

Edwards and Clarke (2004) suggested that there are common factors that impact on families' distress levels. In a study of levels of depression and anxiety in newly diagnosed adult patients and their adult relatives they concluded that families that were able to act openly, express feelings directly, and solve problems effectively had lower levels of depression - direct communication of information within the family was associated with lower levels of anxiety.

The results from the study were seen to suggest that researchers and clinicians need to be family-focused as cancer affects the whole family, not just the patient.

Kazak, Boeving et al. (2005) investigated the presence of post-traumatic stress symptoms (PTSS: such as intrusive thoughts, physiologic arousal, and avoidance) in parents of children currently in treatment for cancer. They found that all but one parent reported PTSS, mean scores indicating moderate PTSS for both mothers and fathers. In families with two participating parents, nearly 80% had at least one parent with moderate-to-severe PTSS. There was also little association between PTSS and length of time since diagnosis. Kazak et al. recommended that 'trauma-informed psychosocial interventions' be used to help patients and families.

For further discussion of the impact of cancer on the families of adolescents see Neville (2005).

Finally in the event of the death of a child from cancer, suffering can be intense. Goodenoughe, Drew et al (2004) in an Australian study stressed the need to address bereavement planning for the approximately 25% of parents for whom cure of their child is not possible.

2.5 The financial burden

Cohn, Goodenough et al 2003 reported an Australian cross-sectional survey of 100 parents of pediatric cancer patients to identify out-of-pocket expenses incurred. Eighty percent of the sample reported a minimum of five different out-of-pocket expenses (total mean value = AUS\$19,064), the majority reflecting travel, accommodation, and communication costs, use of work-related entitlements, and changes in paid employment.

Those families living furthest from the major cancer treatment center reported the greatest range of out-of-pocket expenses and subsequent lifestyle impact, despite increased government allowances.

Summary

Adolescent/ young adult (AYA) cancer patients

- require to be made aware of the risk of infertility and counselled appropriately
- need to be supported in getting extra help with their school work or postponing exams until the bulk of their treatment is over
- require individualized psychosocial support through their diagnosis, treatment, and through long-term follow-up, with degree of recovery and necessary support likely to vary with the type of cancer, severity and toxicity of treatment

Adolescent children of cancer patients

- adolescent children have more emotional problems than school-aged children of cancer patients
- adolescent girls, particularly those whose mothers have cancer, have more emotional problems compared to adolescent boys whose parent has cancer

AYA siblings of cancer patients

- have reported problems such as depression, anxiety or social withdrawal even two years after the diagnosis of their sibling's cancer
- may benefit from meeting with similar others, internet chat-rooms suggested as potentially suitable for this purpose

The family as a whole

- there is evidence of a general relationship between patients' and carers' psychological distress
- in families with two parents and children currently in treatment for cancer, nearly 80% had at least one parent with moderate-to-severe post traumatic stress disorder
- cancer affects the whole family, not just the patient - early intervention to support the family may relieve psychological distress in both patients and other family members
- there is a need to address bereavement planning for the approximately 25% of parents for whom cure of their child is not possible.

The financial burden

- families where a child has cancer experience substantial financial impact, with families living furthest from a major cancer treatment center reporting the greatest range of expenses and lifestyle impact despite government allowances

3 Role of healthcare organization, clinician, and client-patient factors in determining outcomes

3.1 Service type and access

(a) The need for specialised adolescent care

Current situation: fragmented and unsatisfactory

There is concern that the current situation of varied management of adolescents, some treated in adult hospitals, some in paediatric, and with treatment protocols to some extent determined by whether the cancer is more common in children or adults, has led to sub-optimal care for many teenagers.

This is an international situation, including UK, USA, Canada and Australia. Herbertson and Hancock (2005) observed that adolescents often fall between paediatric and adult centres in terms of where they are treated and what treatment they should receive, and no randomised trials were found to clarify this. Treatment regimens used vary greatly between centres making comparisons between trials difficult. Capra, Hargraves et al. (2003) described how adolescents with brain tumours in most cases are still haphazardly assigned to either 'paediatric' or 'adult'-based treatment centres, resulting in inconsistent treatment and inappropriate 'maturity-related' care. They stated that adolescents with brain tumours should be actively targeted for recruitment into clinical trials, and admission into dedicated neuro-oncology centres or programmes that can deliver the necessary and age appropriate multidisciplinary management. Jeha (2003) stated that although several cancers have a peak incidence during adolescence and young adulthood, the patients in this age group are arbitrarily referred to either paediatric or adult oncologists and, consequently, treated on different protocols.

Craft (2003) noted that adolescents have special needs, and there is a real danger that adolescents fall between adult services (designed to cope with large numbers of cases with far less professional staff per patient and less intensive treatment), while adolescent oncology is more akin to paediatric oncology in terms of service requirements. Craft argued it may be best for developments to be led by the paediatricians but in conjunction with specialists in adult oncology.

Better outcomes with paediatric protocols

It has been advocated that paediatric protocols (which tend to be more aggressive) are generally more appropriate and successful (e.g. see Herbertson and Hancock 2005).

Klein-Geltink, Shaw, Morrison, et al (2005, describing the Canadian experience), found that adolescents treated in an adult centre were older at diagnosis, more likely to have carcinoma or germ cell tumours, and the time between symptom onset and first treatment was longer for these adolescents primarily due to the time between initial health-care contact and assessment by an oncologist or surgeon. They were also less likely to be enrolled in a clinical trial. They concluded that care for adolescents with cancer in Canada is less satisfactory than for younger children.

Jeha (2003) reported that paediatric oncologists are more likely to enroll patients in clinical trials, and that adolescents who are treated on paediatric protocols have a better outcome than their counterparts who are managed by adult oncologists.

In Australia Cole (2004) noted evidence that adolescents with acute lymphoblastic leukaemia have better outcomes with paediatric-based, high-risk (intensive) therapy performed in large teaching hospitals with appropriate support and a commitment to multidisciplinary coordinated care, and that in Children's Cancer Group trials between 1989 and 1995 older adolescents had a 6-year event-free survival of 64%, compared with (only) 38% for similar patients on adult trials.

The call for adolescent-specific facilities

Albritton and Bleyer (2003) stated that adolescents with cancer must be recognised as a subgroup of oncology patients with specific characteristics and needs, requiring dedicated interest and management with explicit organisation for research and care.

Whelan (2003) described how the provision of the highly specialised medical and nursing care needed for cancer treatment must go alongside meeting the specific needs associated with this age group, an age of transition from childhood to adulthood. Care provision for teenagers must therefore address the treatment, information, educational, social and other support requirements of teenagers and their families. This must be done through the work of a highly specialised, experienced multidisciplinary team.

Geehan (2003) provides a first hand account of the experiences of a 17 year old with cancer when treated in a specialist Teenage Cancer Unit, with its emphasis on maintaining all aspects of a 'normal' teenager's life whilst simultaneously providing comprehensive care - this included specialist nurses who understand teenagers, reciprocal support and inspiration from other patients and families, parental involvement and support, activities co-ordination, education (avoiding repeating an academic year), and psychological support for the natural worries of adolescence as well as those of cancer both during treatment and years later.

Herbertson and Hancock (2005) reported that teenage friends/siblings that attended a 'Hodgkin Lymphoma in adolescents' conference in England highlighted the importance of age appropriate social facilities, with one of the most frequently raised issues being "why is treatment often given in an age-inappropriate setting?" They noted adolescents can fall between 'two equally unsuitable settings in which to receive treatment: those treated on paediatric wards can share a ward with babies and toddlers and feel they are not being treated as an adult; those in adult wards can be faced with the harsh reality of a busy oncology ward with many terminally ill adults, lacking the personal attention they are likely to need.' They described how adolescent/teenage cancer units aim to provide surroundings, facilities, a specialised multidisciplinary team focused on the special needs of these patients, and a peer support network that enables adolescents the chance to help and support each other.

Herbertson and Hancock maintained that in specialist units adolescents are more likely to be compliant with treatment, due to their being involved in decision making and able to gain some control over their disease and what is happening to them.

A strong call for such facilities has come within Australia. For example White, Ewing, Senner et al (2004) advocated establishing specialist facilities operating in partnership between (preferably collocated) adult and paediatric units, with subspecialisation of the multidisciplinary workforce, an age-appropriate environment and peer support from groups like Canteen, the Australian Organisation for Young People Living with Cancer.

Selby et al (2005) suggest expertise from adult and paediatric units might best be combined via an additional specialist teenager/young adult unit, while Morgan (2005) considers the vexing issues of how best to manage professional relationships between adult and paediatric specialists to allow such arrangements.

(b) Geographic barriers to service access

Families in rural and regional areas can face considerable hardship in accessing cancer treatment services. Hegney et al (2005) described the experiences of people from a regional city (Toowoomba), who had been diagnosed with cancer and required to travel to the state capital (Brisbane) for radiotherapy. The study described the burden of travel and /or relocation to receive treatment (including financial burden), having to live in an unfamiliar environment at a time of great stress, and with the need for support mechanisms at the healthcare facilities to deal with these stressors. (It may be noted that Green, Young et al 2005 reported improved recovery from acute illness when older patients received care close to the local community and family).

Verde et al (2004) observed that up to 30% of Australian women diagnosed with breast cancer live in rural or remote areas of Australia. In the Hume region the woman who felt best served were those living in or close to Albury-Wodonga which has radiation and chemotherapy treatment centres (the only centre in Hume region to offer both). For most of the women treatment for breast cancer required extensive travel and occasional accommodation. Public transport was either not available or very limited, and women spoke of having to set aside half to a whole day to attend an appointment (and sometimes appointments were scheduled on each weekday for six weeks, e.g. for radiation).

Research is needed to investigate the practical hardship and reduced treatment access (and/or reduced treatment compliance) that travel for cancer treatment may lead to (Payne et al. 2000).

It is likely that the benefits of centralised cancer services (more expert care) are in part offset by reduced access to family support, and increased financial cost (which may in turn discourage treatment access: cf. Ciemens 2004, Gleason et al 2005, Stevens et al 2003).

As Arbuckle et al (2005) observe, building big specialist units in major population centres is not a sufficient answer, other types of services such as regional support teams and outreach from hospitals into the community are also needed, possibly employing a mix of adult and paediatric approaches.

Investigation of the additional problems faced by *rural* adolescent cancer sufferers is necessary, including the need for support at healthcare facilities for their families.

(c) Cultural barriers to access

In the USA minority groups such as Native Americans, African American, and Filipinos have the lowest cancer survival rates, and service utilization (especially tertiary care), is thought to be low amongst minority ethnic groups in both the USA and the UK (Lees and Papadopoulos 2000). In general healthcare provision for ethnic minority groups is poorer than for the majority population (Lodge 2001). Reasons for these variations need research, including cultural beliefs about cancer, to inform cancer policy, education and practice (Lees and Papadopoulos 2000).

The Australian situation regarding access to and uptake of adolescent cancer services from minority groups needs investigation.

(d) Access to non-critical home care and palliative care

Many patients and families face an extended period of treatment, and home care can be a desirable option.

For example young people may require hospitalisation for the treatment of toxic complications due to chemotherapy. Fieramosca et al (2005) described a program of home care to improve the quality of life of children and families, to reduce costs, and to allow access to the hospital ward for more critical patients. Children considered eligible for the program were in non critical conditions needing eg. IV therapies, blood examinations, physiotherapy and psychological support, as well as terminally ill children needing palliative therapies. Home care was found to offer a way to take care of children with cancer that improved the quality of life of patients and families.

Other families need to confront the need for palliative care. Currently this may be accessed much later than desirable, or not accessed at all. Ford (2004) cites Girgis in that only about one third of patients in the advanced stage of cancer access palliative care, despite evidence that patients and their families profit from early involvement in such services.

Guidelines to encourage clinicians to make a much earlier referral for palliative care have been recommended. Home palliative care can also be highly desirable. Evered et al (2004) argued that palliative therapies for the relief of symptoms and for the provision of end-of-life care are commonly best provided in the home.

Hain (2005) discusses issues to consider in the palliative care of adolescents.

(e) Access to specialist nurses

The value of specialist cancer nurses is frequently reported in the literature, mainly relating to breast cancer.

Verde et al (2004) described how women appreciated the service they received from Breast Care Nurses (BCNs) in the rural Hume region, and were clear about needing increased access to the care, support and information offered by BCNs.

Redman, Turner and Davis (2003) describe evidence for the benefit of access to a specialist breast nurse, with specialist breast nurses improving satisfaction with care and continuity of care, identifying women with depression, and reducing psychological morbidity and anxiety.

Maltzman (2005) reported the oncologist Dr. Caggiano: “I now understand better the navigational support that patients need as they are going through this ordeal. One year before Biba [his wife] was diagnosed, I hired an RN who sees all the newly diagnosed breast cancer patients. She tells them everything: who they see, how the surgical drains work, what cream to use on a radiation burn, diet, bandages, physical therapy for lymphedema, everything. She helped us tremendously. I found that she knew things that I did not. She was invaluable to us, and we were already at an advantage, as I treat people with breast cancer. *I now understand how important this is for patients.*” [editor’s italics].

Maughan and Clarke (2001) described a RCT which evaluated specialist nurse intervention in gynaecological cancer. They found that the use of specialist nurses and associated specialist psychosexual counselling (including psychosexual intervention) lead to improved sexual functioning and quality of life.

Mills and Davidson (2002) surveyed Irish cancer patients, to identify sources of information being utilized, and found that specialist cancer nurses were considered by patients to be an excellent source of information. They noted that while there are specialist nurses available for patients with breast and colorectal cancer, there are very few specialist nurses for the other diagnostic groups, and this should be addressed.

Arbuckle et al (2005) point out that most care for teenagers and young adults with cancer is not provided by doctors but by nurses, parents, and social workers, and of course the patients themselves and their friends. Arbuckle et al argue that paediatric and mental health nurses may generally be better as they are more accustomed to focus on the family not just the patient and are more equipped to provide the psychological support that adolescents need when faced with a cancer diagnosis. They also point out that nurses of both sexes are needed. Empathy, a sense of humour, and knowledge of youth culture and interests are needed.

Specialist nurses for adolescent patients are needed for outreach and regional care as well as in specialist centralized units.

3.2 Clinical decision making

(a) Time to diagnosis

That early diagnosis is important and may not occur has been raised by a number of papers reviewing adolescent cancer.

Albritton and Bleyer (2003) urged the importance of early diagnosis, and offered the following suggestions to healthcare professionals: identify cancer early and refer the patient to a cancer center where clinical trials are a priority; realize that cancer does occur during early adulthood and that everyone is at risk; be aware that young adults often deny symptoms, are too embarrassed to report them, or attribute them to psychosomatic manifestations; convey that for cancer, what is done at the time of diagnosis is most important-the best outcome is determined by the initial evaluation and therapy: *do it right from the start!*

Herbertson and Hancock (2005) in the UK suggested that diagnosis may occur much later than seemingly necessary, and cited a Teenage Cancer Trust (TCT) 2004 report indicating delays in adolescents' diagnosis: when asked by the TCT "did you visit your GP and, if so, how many times before they referred you to hospital?", 28% of the adolescents that reported stated they had to visit their GP 3–5 times before being referred to hospital, and 29% had to see their GP more than 5 times. Herbertson and Hancock observed that the referral route from general practitioner to paediatric or adult oncologist/ haematologist is diverse and arbitrarily, but the decision will subsequently influence the treatment patients receive.

Herbertson and Hancock recommended referral guidelines for GPs regarding adolescents with possible cancer, both to whom and when to refer, to avoid delays in diagnosis and commencement of treatment. National guidelines were proposed to help speed up the referral process and streamline the diagnostic and care pathway of teenagers.

(b) Human error

It has been accepted that an adequate case load and consequent experience is necessary for a clinician to be able to provide appropriate care. This is part of a systems approach to medical errors, which has seen clinical errors non-demonised and shifted to becoming a major focus of healthcare research and quality assurance. "A systemic perspective on clinical errors proposes that behind each error there is often a chain of circumstances involving multiple actors within the organization as a whole", with the result that individual guilt is displaced to an institutional perspective (Borrell-Carrió and Epstein 2004).

Errors also result from biases (whether unconscious or otherwise) in attitudes and behaviours. Escher et al (2004) investigated doctors' decisions to admit patients to intensive care, and concluded that they were influenced by both patients' wishes and by ethically problematic non-medical factors such as a patient's personality.

Conscious approaches can be adopted to address sub-optimal decision processes (Borrell-Carrió and Epstein 2004; Croskerry 2005). In considering psychological mechanisms, Croskerry (2005) described two major forms of bias that may undermine objectivity and rational thinking as 'cognitive dispositions to respond' and 'affective dispositions to respond' toward the patient. Croskerry also identified a variety of de-biasing strategies that may mitigate their influence, such as: "consider alternatives" (establish forced consideration of alternative possibilities, 'what else might this be?') and "provide specific training" (e.g. instruction in fundamental rules of probability, distinguishing correlation from causation, basic Bayesian probability theory, etc).

Further examples of psychological approaches to reducing clinical error are given by Graber (2005), Shapiro et al (2002).

A related issue is that doctors with more years in practice will necessarily be more years post-training, and in the absence of regular professional development courses be likely to have forgotten much of what they may need to know. Support for this latter thesis was recently provided by Choudhry et al (2005), who reported a systematic review of studies relating medical knowledge and health care quality to years in practice and physician age. They found that doctors who had been in practice longer appeared at risk of providing *lower* quality care, and that this subgroup may be in need of quality improvement. Professional refresher courses seem indicated.

(c) Inclusion of patients in clinical trials

The inclusion of adolescents and young adults into clinical trials is much less than that of children (although greater than that for adults). In a retrospective review of all adolescents and young adults aged 10–24 years diagnosed with cancer between 1992 and 1996 in the Victorian Cancer Registry, Mitchell et al (2004) found that despite a similar incidence of cancer to that in younger children, adolescents and young adults with cancer were poorly recruited into clinical trials and the rate decreased with age. For example for lymphomas, 40% of those age 10-15 years were recruited, only 10% of those age 16-19 years, and 2% of age 20-24 years. The phenomena has been reported elsewhere (e.g. in Europe and USA, see Michelagnoli et al 2003, Bleyer 2002).

The lack of admission to clinical trials has been of considerable concern given evidence that inclusion improves outcomes for adolescents with cancer (for example, Stock, Sather et al 2000; Boissel, Auclerc et al. 2003; Paulussen, Ahrens et al. 2003 - for a review see Bleyer 2002). Why is not so clear, although possibilities include improved treatment compliance and better protocols (it has been noted that naturalistic studies show poorer results than clinical trials in all areas of medicine and this likely reflected poor compliance; Guscott and Taylor, 1994). The phenomena has also strengthened calls for specialist adolescent cancer units (Michelagnoli et al 2003), although it is has been suggested that entry into clinical trials appears to be a more important determinant of outcome than place of treatment (Mitchell et al 2004).

Albritton and Bleyer (2003) urged that once diagnosed with cancer young adults ask about clinical trials, and if not available on site, find centres that participate in clinical trials for their age; once enrolled, ensure the patient receives understanding and support so as to complete the trial.

Cole (2004) reported that the Children's Oncology Group (United States, Canada, Australia, New Zealand) and adult cooperative groups sponsored by the National Cancer Institute identified four initiatives to improve the accrual of adolescents and young adults with cancer into clinical trials:

- *Improving access to care through understanding barriers to participation.* While largely unstudied these might include the time, cost and effort of being involved in a clinical trial which may deter both physician and patient.
- *Developing a cancer resource network to provide information about clinical trials.* For patients, families, healthcare professionals and the public.

- *Enhancing adherence to protocol therapy among adolescents.* Adolescent and young adult patients are often perceived as having difficulty in complying with treatment while keeping up their normal lives, specific medical, psychological and educational support is required
- *Increasing adolescent and adult participation in sarcoma trials specifically designed for patients in this age group.* As paediatric oncologists have little experience with epithelial tumours, some adult oncologists have limited experience managing rare sarcomas.

Cole states that establishing cooperation between paediatric and adult groups is essential to encourage entry into clinical trials (as well as significant financial support for administration and data management).

Note: for discussion of issues in obtaining informed consent for participation in cancer trials, see Joffe et al (2001a,b).

3.3 The clinician-patient relationship

(a) Patients need information on the illness and its treatment

Patients need to be informed

Sutherland, Morand and Hill (2004) described a pilot study to survey the psychosocial and supportive care needs of newly diagnosed patients with cancer admitted to an Australian teaching hospital (both sexes, majority age over 40 years). Patients reported the biggest area of unmet need concerned information, including inadequate information regarding whether the cancer is in remission, information about test results, side effects of treatment, and managing the illness at home.

Verde et al (2004) reported mixed responses from women with breast cancer regarding their experience of communication with professionals and access to information. Some women experienced great difficulty and reported that their views were dismissed and procedures were not adequately explained. Other women were very satisfied with the communication between themselves and professionals, and felt great confidence in their specialist treatment. Communication between disciplines was also regarded with mixed views. Some women found this to be satisfactory whilst others reported enormous problems. Some stated they received quite conflicting information from various clinicians.

Maltzman (2005) described the needs of another woman with breast cancer, and the revelation this represented to her oncologist husband. He was quoted as saying: “Often, patients hear what they want to hear and not what you said, and this also happened to my wife. So I was available to explain things again and again when she needed it”.

Lockwood (2004; breast cancer survivor and consumer advocate) also described the importance of receiving information again and again, and also in personal terms. “at different times people are going to want to know different information . . . straight up when you’re diagnosed and you have to make decisions, you’re going to want to

know the scientific; but then, later on, it becomes more personal and you want to know other people's experiences and what they went through. It's good to know that other people have been through it before you." And: "Personal experiences I found much more useful than just bland brochures. Testimonials from people, face to face, or written. It just seems more personal. There are clinical books on the process, and you're just another individual in the process, which has happened to thousands and thousands of people, but it's happening to you."

Mills and Davidson (2002) surveyed Irish cancer patients to identify sources of information being utilized. They found that family and friends were crucial sources of information for many patients, indicating that *providing family with information* and support will ultimately benefit the patient.

Redman et al. (2003) cited evidence of the benefit of providing an audiotaped record of the consultation (citing Burton et al., 1995; Tattersall et al., 1994).

Hope et al 2000 described the preparation of a patient-centred information strategy based on the results of a local survey of cancer patients about the information they receive and their information needs. Respondents were asked to select items that they felt should be included in an information pack, with seven items selected by 50% or more of respondents:

- Information about your cancer.
- Information about your treatment plan.
- Information about the overall care you will receive.
- Information about radiotherapy treatment and side-effects.
- Key contact names and numbers within the Cancer Centre.
- Information about medication (e.g. anti-sickness drugs, etc.).
- Information about chemotherapy treatment and side-effects.

Other items of useful information were supplied by patients and covered social, practical and clinical aspects of cancer and care, such as information on how family and friends can help and care, financial advice, and updates on the latest treatments..

Herbertson and Hancock (2005): Ensuring that appropriate supportive family members are present and providing adequate informational and emotional support at this difficult time is invaluable. As well as being informed of their diagnosis early by an appropriate health care professional, it is important that adolescents feel involved in treatment decisions from the outset.

Last et al (1996) looked into the information about diagnosis and prognosis given to 8–16 year olds with cancer and how this related to anxiety and depression in these patients. Using self-report questionnaires on 56 children, they concluded that those who received open information about their diagnosis and prognosis at an early stage, showed significantly less anxiety and depression.

How to break bad news

Herbertson and Hancock (2005) observed that being diagnosed with a form of cancer is an extremely traumatic event for anyone. How a patient is told, who breaks the bad news, and their subsequent interaction and communication with those looking after them can be vital in helping them accept their diagnosis and cope with treatment.

Girgis, Sanson-Fisher & Schofield 1999 described the results of breast cancer patients, oncologists, and oncology nurses rating the importance of 15 general principles and 12 recommended steps to guide clinicians in breaking bad news to patients. All three groups agreed that patients have a legal and moral right to accurate and reliable information and that patients should be given the diagnosis and prognosis honestly and in simple language, though not bluntly. See also Girgis & Sanson-Fisher 1995, 1998.

On the other hand some patients may not want to know, as there is evidence that patients can 'ignore' unpalatable information to assist their adaptation. The issues relating to 'deception' by health care personnel are complex (e.g. see Sade 2001).

Scott, Harmsen et al 2003 reported the results of a systematic review of interventions for improving communication with children and adolescents about their cancer, examining randomised and non-randomised controlled trials and before and after studies that evaluated the effects of interventions. It was concluded that interventions to enhance communication involving children and adolescents with cancer have not been widely or rigorously assessed, but there was weak evidence that some children and adolescents with cancer derive some benefit from specific information-giving programs and from interventions that aim to facilitate their reintegration into school and social activities.

(b) Clinicians and patients/family differ in 'what is most important'

There are well-demonstrated differences between the areas which patients consider important and those that doctors do.

As described by O'Connor (2004), the assessments of patients and doctors can differ markedly. In one interesting report of a study examining the effects of anti-hypertensive therapy 100% of physicians thought the patients QoL had improved following the beginning of therapy, but only 44% of the patients themselves reported feeling improved, 44% felt no change, and 8% felt worse. At the same time assessment by relatives was that quality of life had decreased for more than 90% of the patients (Skeel 1989 citing a 1982 study by Jachuck et al).

Substantial differences between patients' appraisals and that of their doctors were also found by Hall et al (1989). When patients were asked to give global ratings of their own health, they drew on aspects relating to emotional, functional, and physiologic health. In contrast, their physicians ratings appeared to be primarily based on physiologic health, with relatively little regard for emotional health. Similarly Rothwell et al (1997) investigated which domains of health status were most important to multiple sclerosis patients, and found patients rated vitality, general health, and mental health more highly than their doctors, and physical disability less highly.

Janse et al (2005) investigated the differences in perception of quality of life between parents of chronically ill children and paediatricians. They found differences at diagnosis and after a period of follow up, with differences particularly clear in emotion (agreement 28-68%) and pain/discomfort (agreement 11-33%). In all patient

groups, at baseline and follow up, the paediatrician assessed the patient to have less pain/discomfort in comparison to the parents. They concluded that systematic assessment of quality of life may contribute to better understanding between physicians and parents.

Maltzman (2005) described how one oncologist changed his views about what was important to patients after experiencing his wife's struggle with breast cancer: 'I must say that I think patients expect to get a good doctor who knows the right treatment, but they also need physicians to pay more attention to quality of life.We as physicians do not pay enough attention to the quality of life of our patients, but for them it is the most important aspect..... Going through this illness with Biba certainly gave me a much greater appreciation for the importance of paying attention to such issues''.

(c) Patients benefit from discussing their concerns and treatment

Little, Everitt et al. (2001) described an observational study of patients' perceptions of patient centredness (e.g. a sympathetic doctor interested in patients' worries and expectations and who discusses and agrees the problem and treatment), and concluded that if doctors provide a positive, patient-centred approach patients will be more satisfied and may less symptom burden and less rates of referral.

Walker, Ristvedt & Haughey (2003) investigated satisfaction with clinic visits among recently diagnosed ENT and GI cancer patients seen at a multidisciplinary cancer clinic. They found that overall satisfaction was predicted by greater attention to how patients were coping with their illness, having a chance to discuss one's feelings about the diagnosis, and staff attention to other psychosocial issues.

Women with breast cancer who are given an opportunity to choose their surgical treatment have less hopelessness, avoidance, fatalism, and anxiety than women whose cancer necessitates having a mastectomy (Deadman et al., 2001). Women who prefer active involvement in treatment decision making have significantly higher psychological adjustment, than women who prefer passive involvement (Hack and Degner, 1999). Active involvement is also associated with less anxiety and more positive mood years later (Hack and Degner 2004).

Verde et al (2004) reported finding that most women diagnosed and treated for breast cancer felt that it had been important for them to actively participate in decisions regarding their health at the time of diagnosis and throughout subsequent treatment, but that they had to be assertive to have a voice in treatment decisions.

(d) The value of formally and routinely assessing patients' HQoL/ distress

While patients generally want involvement, this cannot be assumed. Walsh (2004) reported that in routine consultations 45% of patient's concerns are not elicited. Keller, Sommerfeldt et al (2004) investigated recognition of distress and psychiatric morbidity in cancer patients upon admission to surgical oncology wards, and concluded that a remarkable proportion of distressed patients remained unrecognised by the medical staff, and that only systematic screening of patients upon admission allows timely support to those who are most in need.

A review of cancer studies found that clinicians often failed to stress symptoms their patients were concerned with, and suggested that patient-report questionnaires needed to become standard practice in the assessment of cancer patient HQoL (Bottomley 2002).

Ensuring patient involvement by formally and routinely surveying and discussing their self-assessed quality of life is likely to be of considerable value. This is supported by McLachlan, Allenby, Matthews et al. (2001), who found using a randomized control trial that providing the care team with detailed patient-self assessed health status information lead to a significant reduction in patient depression.

Summary

Service type and access

The need for specialised adolescent care

- there is concern that the current situation where some adolescents are treated in adult hospitals and some in paediatric has lead to sub-optimal care for many teenagers
- it has been argued that paediatric protocols (which tend to be more aggressive) are generally more appropriate and successful
- there is emerging consensus that adolescents with cancer require specialised surroundings and facilities, a highly specialised multidisciplinary team, and a peer support network that enables adolescents the chance to help and support each other.

Geographic barriers to service access

- families in rural areas can face considerable hardship in accessing cancer treatment services and need support mechanisms (eg. at the healthcare facilities) to deal with stressors.
- investigation of the special problems faced by *rural* adolescent cancer sufferers is necessary, including possible support at the healthcare facilities for their families.

Cultural barriers to access

- overseas studies suggest minority ethnic groups have special problems accessing services
- the Australian situation regarding access to and uptake of adolescent cancer services from minority groups needs investigation.

Access to non-critical home care and palliative care

- many patients and families face an extended period of treatment and homecare may lead to improved quality of life for patients and families
- therapies for the relief of symptoms and for end-of-life care may also be best provided in the home, and guidelines to encourage clinicians to make a much earlier referral for palliative care have been recommended

Access to specialist nurses

- the value of specialist cancer nurses is frequently reported in the literature, and specialist adolescent cancer-care nurses are needed
- while most reports concern breast cancer nurses it has been argued that access to specialist nurses for other diagnostic groups (eg. adolescents) should be facilitated

Clinical decision making

Time to diagnosis

- early diagnosis of adolescent cancer is important and concern has been raised that this may not occur
- reasons may include young adults denying or not reporting symptoms and a cumbersome referral route from general practitioner to oncologist
- in the U.K. national guidelines to help speed up the referral process and streamline the diagnostic and care pathway of teenagers have been advocated

Human error

- clinical errors are recognised as resulting from both institutional and individual factors and generally considered within a systems approach
- recent evidence that doctors who had been in practice longer appeared at risk of providing lower quality care has suggested the need for quality improvement in this group, eg. professional refresher courses

Inclusion of patients in clinical trials

- The inclusion of adolescents and young adults into clinical trials is much less than that of children although greater than that for adults
- the lack of admission to clinical trials has been of concern given evidence that inclusion improves outcomes for adolescents with cancer
- research is needed into barriers to participation
- developing a cancer resource network to provide information about clinical trials has been advocated

The clinician-patient relationship

Patients need information on the illness and its treatment

- Patients need to be informed, both in terms of what is known scientifically, and what other people's experiences have been ('Personal experiences I found much more useful than just bland brochures')
- family and friends are crucial sources of information for many patients, hence providing family with information and support is likely to benefit the patient
- information to be available can be identified from a survey of patients about their information needs
- there is evidence that those who receive open information about their diagnosis and prognosis show significantly less anxiety and depression.

Clinicians and patients/family differ in 'what is most important'

- doctors emphasise physical aspects while patients are most concerned with emotional/ quality of life aspects

Patients benefit from discussing their concerns and treatment

- Patient satisfaction with care is increased where there is attention to how they are coping with their illness, the chance to discuss their feelings about the diagnosis, and attention to psychosocial issues generally
- active involvement of patients in decision making appears associated with less anxiety and more positive mood years later

The value of formally and routinely assessing patients' HQoL/ distress

- in routine consultations almost half of patient's concerns are not elicited
- clinicians often fail to stress symptoms patients are concerned with
- providing healthcare workers with detailed patient-self assessed health status information may lead to a significant reduction in patient depression.

Lewis (2005) sets out a single uniform pathway of care for adolescent cancer patients that aims to deal with many of the forgoing concerns.

4 Measuring effectiveness: principles of evidence-based healthcare

In recent years health programs have been required to operate within the framework of ‘evidence-based medicine’ or EBM, which has been referred to as “the integration of best research evidence with clinical expertise and patient values” (Sackett et al 2000).

The following outlines the basic principles of evidence within EBM and contemporary evidence-based healthcare, drawn from National Health and Medical Research Council publications on the development of clinical practice guidelines (NHMRC 2000a, b). Psychosocial programs are outlined in Section 5, and evidence of effectiveness in terms of EBM considered in Section 6.

(a) The first step: framing the question

To locate evidence a research question first needs to be framed, i.e. put into a searchable and answerable form (Craig et al 2001). This consists of four parts:

- a population with a healthcare problem (e.g. teenagers with cancer);
- an intervention (e.g. a weekend peer group camp);
- the comparator intervention or exposure (e.g. usual care); and
- the outcomes (e.g. measures of self-assessed quality of life).

Such questions should focus on patient-centred or clinically important outcomes rather than laboratory-based or surrogate outcomes, so they correspond with patient benefit (Craig et al 2001).

(b) The ‘highest’ level of evidence – effect shown in RCTs

The highest level of evidence, and the only level considered by many to allow allocation of causality, is that from a randomised controlled trial or RCT. An RCT is generally considered to offer the only acceptable means of demonstrating that a treatment has an effect (such as drug therapy, psychosocial support, public health vaccination, etc etc).

A randomised controlled trial is given this status as it is assumed to allow the action of other variables to be controlled for, and hence isolation and estimation of the intervention that is the focus of the trial.

An RCT is seen to allow this as it contains both a ‘control group’ and an ‘experimental group’ which share the same trial experience except for the ‘experimental treatment’ under examination. In the clearest form, such as a drug trial:

- ‘control group’ and ‘treatment group’ have similar subject composition achieved through random allocation;
- both experimenters and subjects are ‘blind’ as to which group any individual subject belongs;
- the same measurements are taken of both ‘control group’ and ‘treatment group’, with the ‘measurer’ blind as to which group any individual subject belongs.

Any differences that appear between treatment and control groups can then be calculated and assessed for statistical significance: if the latter is found, the effect can in principle be attributed to the experimental treatment.

It is recognised that the above features cannot be assumed, that the *quality* of an RCT is variable and requires assessment. Areas assessed are:

- treatment assignment (randomisation and treater-blinding)
- analysis bias (combated by 'intention to treat' analysis i.e. no exclusions after assignment, and follow-up all patients)
- outcome assessment-blinding, or standardised outcome assessment if assessor-blinding not possible

The effect then needs to be assessed for clinical significance and patient-valued significance.

(c) Systematic review

An extension of the above notion is that the highest level comes from a 'systematic review' of a number of randomised controlled trials. Currently there appears to be a difference of opinion as to whether a systematic review or a large clinical trial offers the highest level, although the probable answer is that 'it depends' (eg. a large RCT might fail to detect an effect and oppose the findings of a systematic review if it includes more low-risk patients: see Cappelleri et al 1996).

Related to systematic reviews are meta-analyses, where the quantitative results of trials are combined to generate an estimate of effect.

Quality of systematic reviews/ meta-analyses are assessed by examining:

- adequacy of search strategy (addressing publication bias by including unpublished studies and excluding duplicate publications)
- quality assessment of studies (and sensitivity analysis ?)
- summarisation of studies
- exploration of heterogeneity
- method of pooling data

(d) Efficacy – benefit in ideal circumstances

When a trial has been 'well-conducted' such that any difference between treatment and control groups is unlikely to reflect bias or error, it is said to have high 'internal validity'. The size of the treatment effect is then a measure of *efficacy*. Efficacy may be defined as 'the extent to which a therapy produces a benefit in a defined population in controlled or ideal circumstances' (AGDHA 2005).

(e) Effectiveness - benefit in routine circumstances

The demonstration of a treatment effect in a systematic review of RCTs or a large clinical trial does not mean the treatment will have an equivalent effect in the field. In real life settings the nature of the treatment is likely to differ both quantitatively and qualitatively, as will the patients who receive the treatment.

The degree to which the effect of the treatment is realised in everyday circumstances is termed its *effectiveness*, and indicates the ‘external validity’ or ‘generalisability’ of the original study. Effectiveness may be defined as ‘the extent to which a therapy produces a benefit in a defined population in uncontrolled or routine circumstances’ (AGDHA 2005).

Determining effectiveness requires observational studies (eg. cohort, case-control, cross-sectional, etc), which do not employ such a highly restricted population, or random allocation to treatment or control group, or very tight control over the treatment.

As a result bias is much more likely to be present in the results of observational studies, and great care needs to be taken to search for it. However observational studies are essential if it is to be shown that the treatment has the anticipated effect in practice and that there are no rare adverse outcomes (hard to detect in small-scale clinical trials).

The quality of observational studies is assessed by closely examining:

- Nature/ comparability of subject groups
- Nature/ differences in intervention
- Nature/ differences in outcome measures

Both benefits and any harmful effects need to be considered.

(f) Outcomes assessment

Outcomes may be categorised as laboratory/ surrogate, clinical, and now patient-centred (or patient-relevant).

The types of outcomes measured and reported in clinical trials can be those easy to measure and expected to show change in a relatively short period of time; these may not be those that are of high importance to the patients (NHMRC 2000b).

A further consideration, one yet to be routinely assessed, is efficiency or cost-effectiveness, that is the relative value of the treatment given its cost.

Summary

Health and human service programs now operate within a framework of ‘evidence-based medicine’ or EBM. EBM is “the integration of best research evidence with clinical expertise and patient values”

The basic principles of evidence (according to National Health and Medical Research Council publications) are as follows:

The first step is to frame the research question

- such questions should focus on patient-centred or clinically important outcomes so they correspond with patient benefit

The 'highest' level of evidence is derived from randomised controlled trials or RCTs

- an RCT is generally considered to offer the best (and to many only acceptable) means of demonstrating that a treatment/ intervention has an effect
- an RCT contains both a 'control group' and an 'experimental group' which share the same trial experience except for the 'experimental treatment' under examination.
- the quality of an RCT requires assessment of treatment assignment, analysis bias, outcome assessment-blinding or standardised outcome assessment
- a systematic review of multiple RCTs is superior to evidence from individual RCTs

Efficacy versus Effectiveness

- RCTs estimate efficacy, 'the extent to which a therapy produces a benefit in a defined population in controlled or ideal circumstances'
- the demonstration of a treatment effect in a systematic review/ RCT does not mean the treatment will have an equivalent effect in the field as the treatment and population is likely to differ both quantitatively and qualitatively
- 'effectiveness' is the degree to which the effect of the treatment is realised in the everyday setting, ie. 'the extent to which a therapy produces a benefit in a defined population in uncontrolled or routine circumstances'
- determining effectiveness requires naturalistic/ observational studies where bias is much more likely to be present

Outcomes assessment

- outcomes may be surrogate, clinical, or patient-centred (patient-relevant)
- the types of outcomes measured and reported in clinical trials may not be those that are of high importance to the patients
- efficiency or cost-effectiveness (the relative value of the treatment given its cost) should also be assessed

5 Programs targeting psychosocial factors

The following briefly outlines the range of interventions that have aimed to improve patient-centred cancer outcomes. It is not definitive, and aims to outline the broad form of programs. The typology used here is arbitrary and not totally satisfactory, partly a consequence of the diverse and over-lapping nature of psychosocial programs.

5.1 Programs for patients

(a) Cancer counselling

Individual counselling and individual psychotherapy both entail a one to one relationship between therapist/ adviser and client. Terminology is unclear but 'counselling' is likely to be less extended and entail specialised knowledge of a health condition such as occurs in cancer counseling.

Counselling has been described as a 'very effective strategy to deal with the emotional trauma' associated with the disease for women with breast cancer (Verde et al 2004). Boudioni, Mossman, Boulton et al. (2000) report an evaluation of a counselling service offering short-term face-to-face counselling to self-referred cancer patients and their relatives and friends, provided by experienced supervised counsellors. The service employed a survey form and received a relatively low response rate (of 309 clients 46% responded). It was concluded that a short course of counselling may be perceived by clients to be helpful.

(b) Psychoeducation (health education)

The term psychoeducation refers to a form of illness education where the aim is to develop a collaborative relationship between patient and healthcare workers so as to encourage active decision making, self-regulation, and increased self-efficacy (Stanton 2005, Corrigan 2002).

Likely to be most effective during the diagnosis/pre-treatment time period when patient information needs are high (Carlson and Bultz 2004), psychoeducation can entail providing information about the effects of illness, the benefits and side effects of medication, and strategies for managing side effects, to help patients increase control over recommended treatments and to manage resulting symptoms and disabilities.

As an example, Golant, Altman and Martin (2003) reported a community-based education program that aimed to address the prevention and management of the major side effects of cancer and its treatment according to a 'patient active empowerment model'. The program was implemented through a half-day patient education conference, which included clinical information concerning disease and treatment-related side effects, an overview of treatment methods, information to help improve communication between the patient and healthcare team, education materials and experiences to empower patients and caregivers, and integration of specific mind-

body techniques to strengthen educational messages and reinforce the importance of side effect management.

The pilot results were seen to show that patients experienced significant decreases in depressive symptoms and emotional distress, and that the program could be effective in educating patients about specific cancer side effects and empowering them to cope more effectively with their illness.

Thomas and Weiss (2000) examined the capacity of psychoeducation approaches to control pain, given evidence that a combination of pharmacological and nonpharmacological strategies provides the most effective pain management, and nonpharmacological interventions should be an adjunct to effective pain relief.

They proposed that family members need to be included as they play an integral role in patient care, frequently overseeing the administration of medication and any adjuvant therapies, and were also subject to lack of knowledge and misconceptions concerning cancer pain and its control. They concluded that psychoeducation can lead subjects to increase both their knowledge and usage of medication, decrease fear of addiction, reduce anxiety levels and pain severity, and that caregivers were more likely to provide adequate doses of medication on a consistent basis.

From a mental health perspective Hamann et al (2004) have suggested that effective psychoeducation requires therapists and participants to work together closely, with patients' needs and doubts addressed in group discussions.

(c) Symptom management

Symptom management programs tend to focus on physical symptoms such as pain and fatigue. A symptom-management program that aims to improve self-care in children and adolescents who have cancer is the PRO-SELF Program (Dodd and Miaskowski 2000; Larson et al 1998).

A somewhat related area is that of exercise (eg. see Wright, Halton et al 1998). Humpel and Iverson (2004) described an Australian physical activity intervention aiming to enhance the management of treatment symptoms in breast and prostate cancer. However Thorsun et al 2005 found an exercise program to improve cardiorespiratory fitness for young and middle aged cancer patients but not to reduce fatigue, mental distress, or health-related quality of life (HQoL).

(d) Self-advocacy / communication skills

Cancer patients place considerable importance on being able to communicate their needs to healthcare personnel and be involved in decision making (see earlier section 3.3), and the need for effective communication has been recognized in the development of self-advocacy training for cancer survivors.

Walsh-Burke and Marcusen (1999) reported that when cancer survivors first received a diagnosis of cancer fewer than half considered they were able to communicate their needs effectively, had the skills necessary to make decisions, or were able to negotiate with healthcare providers, insurers, and employers. A survey of professional

oncology nurses and social workers supported the need for self-advocacy training. Walsh-Burke and Marcusen reported the development of programs to address self-advocacy skills, targeting communication, information seeking, problem solving, decision making, and negotiating, provided via audiotape, the internet, and interactive groups. The likely effectiveness of such programs is unclear.

(e) Coping skills and Cognitive-Behavioral Therapy or CBT

The two most identifiable forms of group therapy are cognitive-behavioral therapy and supportive-expressive psychotherapy. Both can also be practiced individually.

Cognitive-behavioral therapy (CBT) assumes that a person's distressing physical and mental symptoms are partially a consequence of maladaptive thoughts, feelings, or behaviors, and focuses on recognizing and modifying the thoughts, feelings, and behaviors that contribute to physical and emotional distress. In practice there can be a package of interventions, e.g. including relaxation training (Thomas and Weiss 2000).

CBT has been used to improve subjective well-being and improve management of pain and other symptoms resulting from cancer or chemotherapy (Thomas and Weiss 2000, Hack and Degner 2004, Barlow and Ellard 2004, Doorenbos et al 2005).

In an influential Australian study Kissane et al (2003) described a randomised, controlled trial of cognitive-existential group therapy (CEGT) for women with early stage breast cancer receiving adjuvant chemotherapy with the aim of improving mood and mental attitude to cancer. Women were randomised to 20 sessions of weekly group therapy plus 3 relaxation classes or to a control arm receiving 3 relaxation classes. Group therapy had 6 goals: promoting a supportive environment; facilitating grief over losses; reframing negative thoughts; enhancing problem solving and coping; fostering hope; and examining priorities for the future. Groups comprised 6–8 patients and 2 therapists met for 20 weekly sessions of 90 min, 303 patients participating. Preintervention 10% of participants were diagnosed as suffering from major depression, 27% from minor depression and 9% from anxiety disorders.

Using intention-to-treat analysis there was a trend for those allocated to group therapy to have reduced anxiety ($p=0.05$, 2-sided) compared to controls and exhibit improved family functioning compared to controls ($p=0.07$, 2-sided). The women in the groups reported greater satisfaction with their therapy, and cited better coping, self-growth and increased knowledge about cancer and its treatment.

An unexpected finding was evidence of a discipline effect, with psychologists outperforming other therapists, presumably reflecting greater prior experience with cognitive-behavioural therapy, and raising the question of the generalisability of the model to disciplines less well trained in cognitive therapy.

It was concluded that CEGT is a useful adjuvant psychological therapy for women with early stage breast cancer, and that interaction effects between group members and therapists are relevant to outcome. While group-as-a-whole effects are powerful, the training and experience of the therapist is especially critical to an efficacious outcome.

Kissane et al observed that while overlap between the supportive–expressive and cognitive-existential models is considerable, the overt emphasis on coping in the cognitively oriented model seems more appropriate for newly diagnosed primary patients where preparation for survivorship is one goal. Both group therapy forms were seen to play a role in assisting patients live with uncertainty and fear of recurrence by attending to both emotional and cognitive dimensions.

(f) Supportive-expressive therapy (most commonly group therapy)

Thomas and Weiss (2000) note that supportive psychotherapy with cancer patients is performed within several formats, including individual, family, couples, and group, and that ‘supportive psychotherapy’ generally refers to the use of a supportive expressive model in which a therapist provides emotional support, encourages expression of feelings and thoughts, and ‘assists with strengthening and developing coping skills’ (specific techniques are more the province of cognitive behaviour therapy or CBT). Supportive psychotherapy also tends to be less structured in that no specific techniques are regularly employed, with the major focus on improving affective distress and quality of life.

Goodwin, Leszcz et al. (2001) reported assignment of women with metastatic breast cancer to an intervention group that participated in weekly supportive-expressive group therapy or to a control group that received no such intervention. All the women received educational materials and any medical or psychosocial care that was deemed necessary. They reported that women assigned to supportive-expressive therapy had greater improvement in psychological symptoms and reported less pain than women in the control group, and concluded that supportive-expressive group therapy improved mood and the perception of pain, particularly in women who are initially more distressed.

Bordeleau, Szalai, Ennis et al. (2003) also evaluated the effect of supportive-expressive therapy on health-related quality of life (HQoL) in women with metastatic breast cancer, but concluded that supportive-expressive group therapy did not influence quality of life as measured by the EORTC QLQ-C30. (In this respect it should be noted that this quality of life measure may be criticized on the grounds that it was formed based on the views of healthcare professionals, ie. patient concerns were not central to its development focus.)

Kissane et al (2004) have argued for supportive-expressive group therapy on the basis that it may promote compliance with chemotherapy (and so potentially lead to longer survival), and may be consulted for a qualitative description of a SEGT program. See also Hack & Degner (2004).

(g) Other support forms

General peer support

In a rare report of a peer group activity for young people, Schwartz et al. (1999) described a weekend retreat sponsored by the American Cancer Society for young adult survivors of childhood cancer, which included both structured and unstructured group activities. An uncontrolled pre- and post- test analysis suggested that

participants experienced improved global QOL at the end of treatment but poorer QOL at 3-month follow-up (which the authors proposed as resulting from response shift, i.e. a change in the way patients subjectively evaluated QoL).

Studies of informal groups (such as led by peers) seem not to be common. In a rare example Ussher et al (2005) described an investigation of a 173 active groups involved in cancer support in New South Wales. Ussher explored the major reasons for joining support groups ('Knowing that I am not alone'; 'Hearing about current medical research'; 'Becoming more informed about the drugs used in cancer treatment and their side'), the features of support groups rated by respondents as important or very important ('The group facilitator giving each person who wants to, enough opportunity to talk'; 'Welcoming new members and helping them settle in the group'; 'Having enough humour in the group'). They also identified differences between those who stayed and those who left the groups, with those who left more likely to have cancer that was no longer detectable, more satisfied in their communications with health professionals, and had spent less time in the group. The study also investigated 29 people with cancer who were not attending a cancer support group.

Ussher et al acknowledged the limitations of the study (e.g. people in groups self-selected), and concluded the following:

- attendees reported consistently positive outcomes in the domains of quality of life, anxiety and depression, self-efficacy and satisfaction with their group.
- people attending heterogeneous groups(not cancer-site specific) appeared to do better, particularly if led by non-health professionals (..... found the opposite)
- marked improvements in level of anxiety were reported between baseline and follow-up assessments.
- while there were differences at baseline, by the 12 month assessment there were no statistical or clinical differences between people with cancer and carers on psychological outcomes
- while support group non-attendees reported higher levels of anxiety and depression than attendees, the difference was not statistically significant.

See also Penson, Talsania, Chabner et al. (2004); Schwartz , Feinberg et al (1999).

Internet-based support

Lieberman, Golant, Giese-Davis et al. (2003) described an electronic support groups for breast carcinoma. While the study lacked randomization and/or a control group, results suggested that group members significantly reduced depression and reactions to pain, and that 67% of patients found the group to be beneficial. In addition, because a large percentage of the women were from rural locations the intervention was seen to hold promise for those who have limited access to support groups.

More recently Golant, Owen, Katz,et al. (2005) described the establishment of 'Group Loop' (www.grouploop.org), a web site for 'Teens with Cancer and Their Parents'. Developed from a series of focus groups with teen survivors of childhood cancer, results are yet to be presented, but an evaluation of the use of the web site, qualitative themes of group discussion, therapists' perceptions of group functioning, and change over time in quality of life, is planned.

'Continuing support'

The disconnection felt by cancer sufferers on departing from intensive cancer treatment has been reported in a number of studies. Lethborg (2000) describes the experience of completing treatment among women with early stage breast cancer. Tutton (2003) describes how for many cancer patients the experience of treatment, although difficult and stressful, is in some way reassuring (something is actively being done to 'cure' their illness), and describes a program to address these concerns.

(h) Complementary therapies

In a review Myers, Stuber et al. (2005) found that the use of complementary/alternative therapies by children with cancer is common, with up to 84% of children having used complementary therapies along with conventional medical treatment. In most cases, the child's treating physician had not been informed of the child's use of complementary and alternative therapies. They concluded that scientific evidence is limited regarding the effects and mechanisms of action of complementary or alternative therapies.

As examples of complementary therapies Bower and Woolery (2005) reported on literature on yoga and cancer, seen to provide preliminary support for the feasibility and efficacy of yoga interventions for cancer patients although controlled trials were lacking. Corbin (2005) reviewed literature on massage and cancer, concluding that patients with cancer can safely incorporate massage therapy (although cancer patients may be at higher risk of rare adverse events) with the strongest evidence for benefits being in stress and anxiety reduction.

5.2 Programs for the family

There is evidence that support programs directed at the family rather than the patient can have added benefits.

Scott, Prictor et al (2003) noted that a diagnosis of cancer creates multiple problems for affected families, and there was increasing recognition that children and adolescents might benefit by being more included in communication with the family or healthcare personnel when there is cancer in the family. While finding limited evidence of interventions, they concluded that structured group interventions and camping programs for healthy siblings improved knowledge and understanding about their sibling's cancer, and improved coping, adjustment and wellbeing.

Kazak, Alderfer et al (2004) have demonstrated the benefits of family therapy in reducing stress symptoms in adolescent survivors of childhood cancer. They observed that posttraumatic stress symptoms such as intrusive thoughts, avoidance, and arousal, are among the most common psychological aftereffects of childhood cancer for survivors and their parents.

Kazak, Alderfer et al described 1-day intervention aimed at reducing posttraumatic stress symptoms, composed of cognitive– behavioral and family therapy approaches

(the 'surviving cancer competently intervention program' or SCCIP), aimed at reducing symptoms of distress and to improve family functioning and development. In a randomized control trial where adolescent survivors, mothers, fathers, and adolescent siblings participated they reported finding significant reductions in intrusive thoughts among fathers and in arousal among survivors, while mothers of survivors did not show a significant effect from the treatment. See also Kazak, Simms et al (1999).

Scott, Halford and Ward (2004) described a randomized control evaluation of the effectiveness of a couple-based psychological intervention (CanCOPE) relative to either patient only therapy or standard care for women with early stage breast or gynaecological cancer and their partners. They concluded that the program was superior to individual treatment, producing significant improvements in couples' supportive communication, reduced psychological distress and coping effort, and improved sexual adjustment.

The findings that brief psychological interventions can be effective in relieving traumatic stress symptoms in family members has strengthened the case for conducting programs for multiple members of the family. Parent-child or joint-sibling programs may also merit investigation.

5.3 Programs for clinicians in communication skills

As described earlier, psychological distress is common in cancer patients, but it is often unrecognized and untreated by clinicians.

Dunn and co-workers (Dunn, Patterson et al 1993; and see Ford 2004) addressed the possibility that it would be 'unethical' to ask patients directly about their cancer as it would distress them. In contrast they found that patients actually wished to talk about how they felt, but that health professionals could be unwilling to ask questions because they found the subject too difficult

Ryan, Schofield et al (2005) conducted a review of articles relating to the expression of emotional distress in patients and strategies for clinicians to detect and manage it. They found that patients can provide verbal and non-verbal information about their emotional state, but that many may not reveal emotional issues as they believe it is not a doctor's role to help with their emotional concerns. They may also 'somatize' their feelings (express as physical symptoms) and consequently emotional distress may not be detected. Ryan et al advocated that clinicians engage in active listening, use open questions and emotional words, and adopt a patient-centred consulting style. They also suggested administering screening questionnaires (to identify psychological distress) prior to the consultation, and training oncologists in these techniques to improve psychosocial care of cancer patients.

Fallowfield and co-workers have worked extensively in communication training for clinicians. Fallowfield, Jenkins, Farewell, et al. (2002) described an evaluation of a 3-day training course on communications skills, using a randomised controlled trial. Outcome measures included objective and subjective ratings made by researchers, doctors, and patients.

They found that course attendance significantly improved key outcomes, with higher rates of use of focused and open questions, expressions of empathy, and appropriate responses to patients' cues. They concluded that whereas the communication problems of senior doctors working in cancer medicine are not resolved by time and clinical experience, training courses can significantly improve key communication skills. See also Jenkins and Fallowfield (2002).

5.4 In general

Sherman, Mosier et al. (2004) noted a movement toward integrative, multimodal approaches in cancer (as was occurring in psychotherapy generally), typified by supportive-expressive group therapy (Spiegel & Spira, 1991) and cognitive-behavioral stress management (Antoni 2000; Antoni et al., 2001).

They also found that conceptual models have generally distinguished between more highly structured interventions which focus on psychoeducational strategies and coping skills training, and less structured approaches, which emphasize emotional expression and group interaction, and in which the content of discussion arises organically from the group (such as peer discussion groups, and supportive-expressive group therapy).

Patient psychoeducation has empowered patients to actively participate in pain control strategies. Cognitive-behavioral therapy helps patients to recognize and modify the factors that contribute to physical and emotional distress, and supportive psychotherapy can assist patients in managing the stressors associated with cancer (Thomas and Weiss 2000)

Summary

Programs include the following:

Counselling and individual psychotherapy

- both entail a one to one relationship between therapist/ adviser and client

Psychoeducation (and health education)

- information is provided to the patient regarding the condition and its treatment, while in psychoeducation the emphasis is on encouraging active decision making, and increasing control over recommended treatments and managing resulting symptoms and disabilities
- psychoeducation approaches have a particular role in pain control due to the role of psychosocial factors in pain

Symptom management

- programs that focus on physical symptoms such as pain and fatigue

Self-advocacy / communication skills

- programs aiming to increase effective communication with healthcare professionals and others

Cognitive-Behavioral Therapy or CBT (usually group)

- therapies focuses on recognizing and modifying the thoughts, feelings, and behaviors that contribute to physical and emotional distress
- often entail a package of interventions, e.g. including relaxation training
- Kissane et al described a randomised, controlled group therapy trial for women with early stage breast cancer and reported a trend for group therapy members to have less anxiety and improved family functioning compared to controls

Supportive-expressive group therapy or SEGTT

- where a therapist provides general emotional support, encourages expression of feelings and thoughts, and 'assists with strengthening and developing coping skills' (not specific techniques which are the province of CBT)
- Goodwin, Leszcz et al. found women with metastatic breast cancer assigned to SEGTT had improved psychological symptoms and less pain than women in a control group, particularly for women more distressed.

General peer support

- studies of informal groups, eg. where led by peers, are uncommon
- one study (Ussher et al) described an investigation of a 100+ active groups involved in cancer support in New South Wales and found attendees reported consistently positive outcomes, eg. improvements in level of anxiety between baseline and follow-up, but examination of a control group of support group non-attendees found no statistical difference in levels of anxiety and depression.

Internet-based support

- reports suggest internet-based support may be effective

Continuing support

- support programs for survivors have been described

Complementary therapies

- support programs using complementary therapies have been described

Programs for the family

- support programs directed at the family have reported improved coping and reduced stress in both patients and family members
- evidence that brief psychological interventions can relieve traumatic stress symptoms in family members has strengthened the case for conducting programs for multiple members of the family

Programs for clinicians in communication skills

- programs to increase communication skills in clinicians have been conducted and described
- course evaluations have reported increased use of focused and open questions, expressions of empathy, and appropriate responses to patients' cues

6 Effect of psychological factors and psychosocial interventions on cancer outcomes

6.1 Psychological/ psychosocial factors and cancer-related quality of life

(a) Psychological factors associated with health-related QoL

It would seem that there is an association between dynamic psychological mechanisms and subjective well-being (SWB).

Adaptation

There are a broad range of results suggesting the presence of general psychological mechanisms that act to increase subjective well-being (SWB; i.e. a person's global report of happiness and/or life satisfaction) for people with severe or chronic illness.

Adaptation can be so great as to apparently eliminate SWB differences between people chronically ill and controls, or even those who have recently had very positive experiences: lottery winners and quadriplegics have been found to differ little from normal controls in subjective well-being, and patients with advanced incurable cancer have rated their quality of life (QoL) as good (see O'Connor 2004).

Adaptation works to minimise the emotional/psychological impact of adverse changes. For example Cella, Hahn et al (2002) assessed cancer patients with the Functional Assessment of Cancer Therapy (FACT), and then later gathered retrospective global ratings of change. They found that the relationship between actual change scores and retrospective ratings was modest but usually statistically significant, however those who reported global worsening had considerably larger change scores than those reporting comparable global improvements. In other words, patients minimised declines and exaggerated improvements.

A related phenomena is that observers often rate patients quality of life lower than do the patients. For example, Eiser, Vance et al (2003) investigated ratings of quality of life for survivors of childhood cancer, and found mothers reported their children's QoL to be worse than did the survivors.

Variables influencing adaptation? Affective disposition and coping style

There is evidence that emotional disposition is related to other aspects of quality of life. For example Hughes (1985) found that depression following lung cancer radiotherapy may exacerbate symptom distress (tiredness, anorexia, pain), while Yu et al (2003) investigated eating difficulties after radiotherapy for Nasopharyngeal carcinoma, and concluded that optimism significantly assisted eating ability and overall HQoL (See also Wrosch & Scheier 2003; Schneiderman et al 2001; Zaza and Baine 2002).

A considerable amount of investigation has concerned the degree to which coping style influences reported QoL and later psychological adjustment (emotional disposition and coping style are likely to be related). A more elaborate model has also

been put forward according to which the degree of adjustment depends on the combined effect of coping responses, social support, and cognitive appraisal of the cancer experience (the 'social- cognitive transition model' of adjustment to cancer: Brennan 2001, see Hack and Degner 2004).

Hack and Degner (2004) reviewed relevant studies and identified a range of variables related to positive psychological adjustment to cancer. These include:

- perceived control
- confronting the disease
- problem-focused engagement coping
- hopefulness
- dispositional optimism
- fighting spirit
- emotional expression
- active acceptance at diagnosis
- humor

On the other hand variables found to be significantly associated with poor adjustment included:

- emotion-focused coping
- emotional suppression
- social withdrawal
- fatalism
- anxious preoccupation
- helplessness

Others have also concluded that avoidance-based coping responses seem associated with increased psychological distress, and they have been found to predict fear of cancer recurrence (Stanton et al., 2002). Hack and Degner (2004) studied the relationship between coping responses and psychological adjustment to breast cancer six months and three years after diagnosis. The results were seen to show that women who were depressed at time of treatment planning, and who responded to their cancer diagnosis with cognitive avoidance (acceptance/resignation), had significantly worse psychological adjustment three years later. The findings suggested that women who respond to their breast cancer diagnosis with passive acceptance and resignation may be at significant risk of poor long term psychological adjustment.

(b) Effect of psychological/psychosocial interventions on QoL

The following briefly describes (in chronological order) several systematic reviews, meta-analyses, and one recent large RCT that have considered the efficacy of psychological/psychosocial interventions in cancer. The list of studies is not exhaustive.

In a rare review of psychological interventions for children and adolescents, *Kibby, Tyc and Mulhern (1998)* reported a meta-analysis of the efficacy of psychological interventions for children and adolescents with chronic medical illness. There were 42 studies in total, with cancer the most common medical condition (26%). Studies consisted of controlled studies and before-and-after studies (within-participant designs). The meta-analysis involved calculating a standardised effect size (ES) for

each study and taking a mean across all studies, deriving a standardised effect size for psychological interventions of 1.12.

The author's concluded there was strong evidence that the interventions were effective. However a DARE commentary (Database of Abstracts of Reviews of Effects 2005 Issue 3) assessed the results as providing poor evidence in support of psychological interventions due to methodological weaknesses, such as lack of distinction between before-and-after studies and the (superior) studies that employed randomization.

Newell et al (2002a,b) reported a systematic review of psychological/ psychosocial therapies used by cancer patients, based on a comprehensive search for all identifiable publications; unpublished studies were not sought. For inclusion in the effectiveness review, papers (155 in all) had to discuss the results of a randomized, controlled trial that evaluated the effectiveness of a psychological intervention in improving cancer patients' psychosocial, side-effect, immune, or survival outcomes, and be categorized as having either fair or good methodological quality.

Quality assessment was achieved by rating each randomised trial against 10 indicators of internal validity (covering the issues such as described in 4.1 (b)). An overall methodology quality-rating (1-3) was allocated to each indicator so each trial could achieve a maximum total score of 30 points. The quality of a trial was considered to be good if its total score was greater than 20 points, fair if 11–20 points, and poor if less than 11 points.

'Tentative recommendations' for or against an intervention strategy were made when consistent evidence (at least 75% of trials with statistically significant results) from fair-quality trials was obtained, while inconsistent evidence produced no recommendation. A conservative approach was taken in allocating 'statistical significance' to trial results. Where the reviewed trials employed multiple measures of the same outcome(common), an overall statistically significant result was only 'allocated' if more than half of the measures for that outcome were statistically significant (e.g. if a trial reported two measures of patients' anxiety, one reported as statistically significant improvement and one as not, the trial was coded as nonsignificant).

An improved means of this could be achieved by rating the development quality/ validity of the outcome measures, themselves frequently multi-item scales of diverse origins.

Newell et al found that despite an increased use of randomized, controlled trial designs over time, the methodology quality of most of the trials reviewed was 'poor' (note that many of the trials did not provide sufficient information for their performance to be assessed on many of the methodology indicators). The majority of the trials were excluded for being of poor methodological quality, with only one trial achieved a 'good-quality' rating. They concluded there were 'genuine weaknesses' in the design and reporting of trials of psychological therapies for cancer patients.

It was also observed that the reviewed trials tended to employ very small samples, with the vast majority having fewer than 50 patients per experimental group and so an

increased likelihood of error. The reviewed trials also had relatively short follow-up periods, few greater than 6 months, preventing judgement on the long-term effectiveness of many interventions. Newell et al (2002a) concluded they could offer only tentative recommendations for or against most intervention strategies, with most recommendations based on results from only one or two fair-quality trials.

Despite their reservations and caution, Newell et al found that:

- some psychosocial intervention strategies appeared to provide potential benefits
- group therapy, education, structured and unstructured counseling, and cognitive behavioral therapy offered the most promise for their medium- and long-term benefits for many of the psychosocial outcomes explored
- very few intervention strategies could be recommended for reducing patients' *physical side effects*, despite the fact that more trials explored these outcomes, but of these relaxation training and guided imagery appeared to provide benefits
- no intervention strategies could be recommended for improving patients' *lengths of survival*
- tentative recommendations were possible in relation to *immune outcomes*, with all the strategies for which trials were performed indicating medium- or long-term immune benefits.

A further systematic review was reported by Ross, Boesen et al (2002), who reviewed the scientific evidence for an effect of psychosocial intervention on survival from cancer and well-being and in particular on anxiety and depression. The literature search yielded 43 randomised studies of psychosocial intervention. Four of the eight studies in which survival was assessed showed a significant effect, and the effect on anxiety and depression was judged inconsistent. The results were considered consistent with three possible explanations:

- (i) only some of the intervention strategies affect prognosis and/or well-being and in only certain patient groups;
- (ii) the effect was weak, so that inconsistent results were found in the generally small study populations; or
- (iii) the effect was diluted by the inclusion of unselected patient groups rather than being restricted to patients in need of psychosocial support.

Ross, Boesen et al proposed that large-scale studies with sound methods were needed in which eligible patients are screened for distress, but in the meantime the question of whether psychosocial intervention among cancer patients has a beneficial effect remains unresolved. They also observed that if the effect of psychosocial intervention on endpoints such as survival, anxiety and depression is found to be weak, it may have other, more subtle benefits, which are difficult to measure, but which might justify implementation of psychosocial programmes in the clinical treatment of cancer patients.

Edwards, Hailey et al (2004) conducted a Cochrane Systematic review (RCTs, includes search of published and unpublished literature by hand, regularly checked and updated) to answer the question 'Do psychological interventions (education, individual cognitive behavioural or psychotherapeutic programmes, or group support) improve survival and psychological outcomes in women with metastatic breast

cancer?' The quality of individual trials were assessed using two measures (the Jadad scale and a method considered more relevant for trials of psychological interventions). Outcomes considered were survival, psychological outcomes (anxiety, mood, self esteem, and emotional control), quality of life, functional living, and pain.

Only five RCTs met the selection criteria: two cognitive behavioural group interventions, and three supportive-expressive group therapy interventions.

Based on the meta-analysis it was concluded that:

- cognitive behavioural therapy did not differ from usual care for anxiety, mood, self esteem, or functional living
- supportive-expressive group therapy lead to improved scores on an emotional control scale (1 trial) and reduced reported pain (meta-analysis of 2 trials) compared with usual care, but with no effect on measures of mood or quality of life
- no group psychological interventions influenced *survival*.

Rehse and Pukrop (2003) reported a meta analysis of 37 published outcome studies that had a control group, assessing the effectiveness of psychosocial interventions on subjective quality of life (QoL) in adult patients with cancer. Patients with breast cancer were the most frequently presented, and the categories of intervention studied were patient education, social support, coping skills training, and psychotherapeutic interventions. The effect sizes from each included study were weighted by the sample size and included if they were statistically significant. Publication bias was assessed.

The author's concluded that psychosocial interventions of at least 12 weeks' duration can improve the QoL in adult patients with cancer. A DARE (Database of Abstracts of Reviews of Effects 2005 Issue 3) commentary accepted that the quality of the included studies was assessed systematically (and used to explore differences in the effect sizes)and that the authors' conclusion was justified.

Sherman, Mosier et al. (2004) who detailed a very useful review by the 'American Group Psychotherapy Association Task Force on Group Interventions for Medical Patients', comprehensively reviewed the effectiveness of group interventions, group services being 'formal meetings involving interactions among members (not simply didactic lectures) which had convened to pursue specific therapeutic goals under the guidance of trained group leaders'. Despite identified shortcomings, the overall conclusion was that there was now considerable evidence to support the value of group interventions for individuals facing cancer, with a wide range of benefits.

Explicitly comparing structured interventions (such as psychoeducational and CBT) with less structured ones (e.g. SEGT), they concluded that studies comparing the two approaches have tended to point to stronger effects for structured psychoeducational interventions, however these have involved only brief interventions largely directed toward patients with less disseminated disease (and the 'less structured' groups generally involved peer discussion rather than a more sophisticated form). Overall, there findings were as follows.

- *for patients with early-stage cancer* the evidence favoured brief, skills-oriented services for enhancing adjustment (psychoeducation and cognitive

CBT). Sherman et al concluded that considerable evidence pointed to short-term benefits associated with brief psycho-educational groups for patients with limited disease, while evidence for brief, less structured groups was more mixed;

- *for individuals with advanced cancer*, the evidence was more compelling for longer-term less highly prescriptive interventions, in particular the supportive-expressive treatment model of Spiegel et al (1981), although Sherman et al also found that there was evidence from well-designed studies to support the value of brief structured interventions too.

Finally, in a single large, comprehensively-assessed randomized clinical trial Andersen, Farrar et al (2004) tested the hypothesis that a psychological intervention can reduce emotional distress, improve health behaviors and enhance immune responses. Participants were 227 women who were surgically treated for breast cancer. Before adjuvant chemotherapy women completed interviews and questionnaires assessing emotional distress (e.g. profile of mood states or POMS), social adjustment, and health behaviors, and blood samples were drawn for immune assays. Patients were randomly assigned to either the intervention group or assessment only group. The intervention of one session per week for 4 months was conducted in small patient groups, consisting of strategies to reduce stress, improve mood, alter health behaviors, and maintain adherence to cancer treatment and care.

Patients receiving the intervention were found to show significant lowering of anxiety, improvements in perceived social support, improved dietary habits, and reduction in smoking. Immune responses for the intervention patients paralleled their psychological and behavioral improvements, with T-cell proliferation in response to chemotherapy remaining stable or increasing for intervention patients, while declining for assessment-only patients. It was concluded that the data showed a convergence of significant psychological, health behavior, and biologic effects after a psychological intervention.

In conclusion, while the systematic reviews, meta-analyses, and studies have been as varied as the conclusions, there remained a persistent reporting of effects.

6.2 Psychosocial interventions and reduced usage of other services

There is evidence that psychosocial interventions may lead to a reduced utilisation of other healthcare services.

Simpson, Carlson and Trew (2001) reported a Canadian study to determine whether participation in a group psychosocial intervention by patients with breast cancer would result in an improvement in psychological measures and in reduced billings in general medical expenses. Women who had completed treatment for stage 0, I, or II primary breast cancer were randomly assigned to either the an intervention or control group. Both groups received the usual care, while the intervention group also participated in six weekly cognitive/behavioral psychosocial meetings. Healthcare billing records were obtained during a 2-year follow-up period, with the result that women in the intervention group had less depression, less overall mood disturbance, better overall quality of life, and fewer psychiatric symptoms than those in the control

group, while billing in the intervention group was an average of C\$147 less (23.5% reduction) than in the control group. In other words the psychosocial intervention reduced direct healthcare billings in patients with cancer.

In a further Canadian study Ashbury et al (1998) interviewed cancer patients (n = 913) who had received treatment within the previous 2 years and interviewed them regarding symptoms, impact of symptoms on lifestyles, experiences with accessing information and treatment, and attitudes about the level of care received. Almost all respondents (94%) reported experiencing one or more symptoms such as fatigue and anxiety, with fatigue (78%) most likely to be self-rated as moderate to severe and likely to interfere in normal daily activities. Respondents who experienced fatigue reported a more frequent use of healthcare services such as more visits to general practitioners, community or public health nurses, pharmacists, hospital emergency departments and walk-in clinics (as well as complementary therapies). Moreover half of these tried to find information on fatigue but failing to obtain it. Respondents were more likely to be dissatisfied with their treatments for their symptoms than for their cancer. Carlson and Bultz (2004) observed that although no monetary cost was calculated in this study, the untreated symptom of fatigue (which has psychosocial components) was likely to cause significant costs in terms of increased healthcare utilization.

Rosenberg et al. (2002) in a controlled study of a psychosocial intervention in men with prostate cancer ('expressive emotional disclosure' versus 'treatment as usual') found that men in the treatment group showed improvements in healthcare utilization over a 6-month follow-up. Carlson and Bultz (2004) have argued strongly that psychosocial interventions are likely to be cost-effective. Sikora (2004) also argued that while only a few studies have so far examined cost-savings the cost of such psychosocial interventions is tiny compared to the cost of drug treatments hence cost-effectiveness could be easily realised. For a more cautionary response see Baum (2004).

While limited the literature supports the notion that psychosocial interventions may be effective in decreasing healthcare utilization.

6.3 Psychological/ psychosocial factors and cancer survival

(a) Psychological factors associated with survival

Australian researchers have figured prominently in reports that psychological factors are predictive of cancer survival. Research on the psychological adjustment of patients with advanced melanoma found that patients who reported their treatment would either cure them or add years to their life survived over six months more on average compared with the less optimistic group. (Butow, Coates & Dunn, 1999; see also Ford 2004), and survival was later reported to be related to perceiving the cancer as merely part of life (rather than dominating it: Butow, Coates & Dunn, 2000).

Later investigations have been less optimistic regarding the strength of the association. Studies have found no increased risk of developing cancer due to either

personality or stressful life events (Dalton et al., 2002; Ross et al., 2003; Oksbjerg et al., 2002, 2003).

Petticrew, Bell and Hunter (2002) in a systematic review of the influence of psychological coping (including fighting spirit, helplessness/ hopelessness, denial, and avoidance) on survival and recurrence in people with cancer, concluded that most of the studies that investigated fighting spirit (10 studies) or helplessness/hopelessness (12 studies) found no significant associations with survival or recurrence, and that the evidence that other coping styles play an important part was also weak. They found that positive findings tended to be confined to small or methodologically flawed studies, indicating potential publication bias. Lack of adjustment for potential confounding variables was common. Overall they concluded there was little consistent evidence that psychological coping styles play an important part in survival from or recurrence of cancer.

Schofield et al (2004) investigated the relation between pretreatment levels of optimism and survival in patients with non small cell lung carcinoma (NSCLC). They found no association noted between pretreatment optimism and progression-free or overall survival.

More positively, Collette et al (2004) examined whether baseline health-related quality of life parameters assessed by the European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire C30 (EORTC QLQ-C30) were independent prognostic factors of survival for patients with hormone-refractory prostate cancer. They concluded that certain scores at baseline seemed to be predictors for duration of survival, although not adding to the predictive ability of models based on clinical and biochemical factors only.

(b) Effect of psychological/psychosocial interventions on survival

As already described, there has been scant evidence of psychosocial interventions prolonging life with cancer. For example, Goodwin et al. (2001) found that psychosocial interventions do not change survival. As already described, Newell et al (2002a,b) in a systematic review of psychological/ psychosocial therapies concluded no intervention strategies could be recommended for improving patients' lengths of cancer survival, Ross, Boesen et al (2002) concluded that the evidence of an effect of psychosocial intervention on cancer survival was weak, and Edwards, Hailey et al (2004) in a Cochrane Systematic review concluded there was no evidence that group psychological interventions influenced cancer survival.

On the other hand Smedslund and Ringdal (2004) reported a meta-analysis of the effects of psychosocial interventions on survival time in cancer patients in 14 controlled intervention studies. They concluded that interventions using individual treatment (n=3) appeared effective but interventions using group treatment (n=9) did not.

They concluded that 'a definite conclusion about whether psychosocial interventions prolong cancer survival seems premature', and that in the interests of gaining better evidence they recommended that accounts of interventions focus on a single

diagnosis, take known risk factors into account, and described the intervention thoroughly.

(c) Mechanisms that could influence survival

While evidence of prolonged survival due to psychosocial interventions is lacking, the mechanisms for such survival seem present, namely an improved immune system and increased treatment compliance.

Immune system

Investigating the link between mind and body has long been the focus of psychosomatic medicine (Fava and Sonino 2000, Sivik 2000). There is now growing evidence of a relationship between psychosocial support / psychological distress, and the activity of the lymphocyte cells (white blood cells) of the immune system.

It is known that several members of the lymphocyte family (B cells, T cells, and natural killer or NK cells) work together to attack cancer cells. As reported earlier, Andersen et al (2004) found evidence that psychological intervention aimed at reducing emotional distress and improve health behaviors resulted in an increased immune response in breast cancer patients receiving adjuvant therapy. In patients receiving the psychological intervention, T-cell proliferation remained stable or increased, whereas both responses declined for assessment-only patients.

In a recent study Lutgendorf et al (2005) investigated the extent to which psychosocial support and distress was related to impaired immunity in cancer patients, in particular in immune cells in the tumor microenvironment. Patients awaiting surgery for suspected ovarian cancer completed psychological questionnaires and provided a presurgical sample of peripheral blood as well as tissue cells during surgery. Lutgendorf et al. found independent associations of both distress and social support with NK or natural killer cell activity, NK cells being a type of lymphocyte (white blood cell) that are a component of innate immune defense which attach themselves to and destroy abnormal cells such as cancer cells. They concluded that psychosocial factors, such as social support and distress are associated with changes in the cellular immune response at the tumor level, supporting the presence of stress influences in the tumor microenvironment.

These reports add to the growing discoveries in the new field of psychoneuro-immunology (PNI), supporting a psychological link to cancer development and progression through the mediation of the immune system (eg. O'Leary 1990; Snyder et al. 1993, Wade et al. 2001; Rosenkranz et al. 2003). Glaser and Kiecolt-Glaser (2005) provide a discussion of psychoneuroimmunology and the evidence it is providing about the ways in which stressors / negative emotions may be translated into physiological changes as the immune system communicates bidirectionally with the central nervous and endocrine systems.

Medication/ treatment adherence

Increasing attention is being paid to the role that medication adherence may play in cancer survival, particularly with adolescents.

A number of studies have suggested that adolescents are less adherent than adults or younger children. Tebbi et al. (1986) looked at the compliance of paediatric and adolescent cancer patients with self-administered oral chemotherapy at home, and reported a significant correlation between the age of patient and compliance with chemotherapy, adolescents being less compliant. Kyngas and Rissanen (2001) found that the compliance of adolescents with a chronic disease was predictable on the basis of support from parents, nurses, physicians and friends.

Sabate (2003) noted that adolescents struggle with self-esteem, body image, social role definition and peer-related issues, and poor adherence may reflect rebellion against the regimen's control over their lives, arguing that sustaining parental involvement and minimizing conflict between adolescents and their parents are valuable in encouraging adherence to treatment regimens (see also Osterberg & Blashke 2005).

Herbertson and Hancock (2005) also suggested that one of the possible explanations regarding the difference in outcome of adolescents compared with children with cancer is the issue of compliance, arguing that even where chemotherapy is given intravenously noncompliance could impact on outcome via non-attendance, as well as failure to comply with home medication (such as is given to assist bone marrow recovery and help prevent infections).

It is a short step to suggest that healthcare programs may increase compliance. Kissane et al (2004) have argued for supportive-expressive group therapy (SEGT) on the basis that it may promote compliance with chemotherapy and so potentially lead to longer survival. Herbertson and Hancock (2005) used a similar reasoning when arguing for adolescent cancer units.

6.4 The weakness of effects and methodological issues

While psychosocial programs have frequently been reported as effective, detailed scrutiny by others has tended to lead to a questioning of the strength or even existence of the effects. This somewhat dispiriting state of affairs seems to have at least three possible explanations:

1. there is no effect (positive findings reflect publication bias, ie. the positive results have occurred by chance alone)
2. the effect is present but very weak
3. the effect is strong but 'methodological shortcomings' hinder its demonstration.

This section reports evidence favouring the third explanation.

(a) Lack of program specificity

Sherman, Mosier et al. (2004) examined the evidence for interventions directed toward different patient subgroups. They found there was evidence that group interventions were most effective for patients with the highest levels of distress (acknowledging some of the effect may reflect 'regression to the mean' and floor

effects), as well as those with the fewest social and personal resources (e.g., lack of partner support, poor self-esteem, pessimism, perceptions of limited control and predictability) experience greater gains on some outcomes (Antoni et al., 2001; Helgeson et al., 2000).

Sheard and Maguire (1999) conducted meta-analyses of the effect of psychological interventions on anxiety and depression in cancer patients. They found that preventative psychological interventions in cancer patients may have a moderate clinical effect upon anxiety (but not depression), and also concluded that interventions targeted at those at risk of or suffering significant psychological distress are likely to have stronger clinical effects.

Hack and Degner (2004) found that it was possible to identify distinct groups of women among those with breast cancer at particular risk of poor psychological adjustment to their cancer, indicating the potential for targeted coping skills programs and cognitive-behavioral interventions.

As observed by Stanton (2005) in a recent editorial in the *Journal of Clinical Oncology*, the productive way to pursue studies in the area is likely to be to recognise the variation in results, to systematically distinguish the factors determining this variation, and recognise that psychological interventions may be more effective for specific sub-groups (e.g. individuals who are in greater distress or who have fewer psychosocial resources).

Owens et al (2001) has argued that interventions targeted to well-defined cancer populations appear to have greater power to detect benefits in outcome than interventions with broader inclusion criteria, namely diagnosis of *any* type of cancer (the seeming opposite of the finding by Ussher et al 2005).

The key task may be to identify people who will benefit, and suitability criteria may vary depending on the type of psychosocial intervention. For example, those likely to benefit from SEGT may be the socially isolated or those with avoidance-fatalistic approaches.

On the other hand while maximum effectiveness may require patient specification, programs may ultimately be provided broadly based on other grounds. Sherman, Mosier et al. (2004) noted that the breadth of effects, including the potential for reducing healthcare utilization, argues against proposals that services be limited to those with elevated distress, as does evidence of delayed treatment effects (interventions that yield modest gains in the short run may demonstrate more robust effects over time).

(b) The problem of 'unstandardised interventions'

Identifying how best to target psychosocial interventions would be assisted by a clearer specification of what they consist of. Owen et al (2001) noted that many psychosocial interventions incorporate components of educational strategies, relaxation training and/or hypnosis, cognitive-behavioral techniques, and social support, and that "this 'kitchen-sink' approach to clinical intervention makes

exceedingly difficult the determination of which components of interventions contribute to improved patient outcomes”.

While it can be difficult to standardise treatments in this area (Stephenson and Imrie 1998), specification of the most central facets of treatment content and demonstration that the intervention is delivered as intended are crucial elements in psychosocial intervention research (Stanton 2005).

Carroll (1997) in discussing pharmacotherapy trials observed that careful selection and standardization of the psychosocial context in which medications are delivered will improve the validity, precision, and power of pharmacotherapy efficacy research, and should be considered a virtual requirement in research design.

The lack of clarity of exactly what is being delivered may be one reason why systematic reviews/ meta-analyses have often had trouble in demonstrating the effectiveness of psychosocial interventions.

Non-standardisation of control and psychosocial treatment is a problem, and a general one. Carroll (1997) observed that while randomized clinical trials to evaluate the efficacy of pharmacotherapies is guided by research standards that govern most design elements, including randomization of subjects, use of placebo controls, formulation and dosage of the therapeutic agent, and monitoring of serum levels, no such widely accepted guidelines are recognized for standardization [or at least measurement] of an essential if unacknowledged element of all such studies: the concomitant provision of at least a minimal form of (de-facto) psychosocial treatment.

In responding to this legitimate concern care needs to be taken that premature standardisation does not stifle identification of how to mix and match therapy elements for optimal effect with particular patients (i.e. the recipe may need to match the ingredients). The first step is likely to be to specify intervention elements and measure them carefully as part of program evaluation. These considerations apply to both formal and informal psychosocial interventions.

Preventing uncontrolled interaction between patient and therapist may also be unproductive, as it may be this very interaction that is largely responsible for positive effects, as suggested in the following.

(c) Lessons from placebo effects – the ubiquity of effects

In considering the potential effectiveness of psychosocial interventions, both in terms of evidence for effect and potential difficulties in demonstrating that effect, potentially useful insights arise from a consideration of placebo effects. For the purposes of this discussion a ‘placebo effect’ will be defined as “a change in a patient’s state that arises from a ‘treatment’ that does not convey a physical/physiological action”.

Kaptchuk (2002) noted that the term placebo effect can be applied to not only the narrow effect of an intended ‘dummy intervention’ but also the broad array of non-specific effects in the patient-physician relationship, including attention; compassionate care; and the modulation of expectations, anxiety, and self-awareness.

In fact most if not all ‘physical’ interventions are accompanied by an additional and generally unacknowledged ‘psychosocial treatment’. As pointed out by Temple (2003), physical/physiological interventions generally include psychosocial ‘treatments’, i.e. are administered within a particular psychosocial/health-delivery setting. See also Wang (2003).

(d) Lessons from placebo effects – the importance of knowing/ believing

Knowing a treatment is being performed can have a powerful effect, as revealed by studies investigating hidden versus open drug administration.

Benedetti et al (2003) found that the hidden administrations of therapies were less effective than open ones. In one experiment 42 patients following chest surgery were administered open and hidden morphine in the postoperative phase. Half the patients received open administration performed at the bedside by a doctor, who told the patients that the medication was a potent painkiller, according to routine clinical practice. By contrast the hidden administration was given by pre-programmed machine and the patients were unaware that a painkilling medication was being given. The results were that the pain baseline was the same in the two groups, but after the injection of morphine the pain decrease in the open condition was larger than in the hidden condition. Interruption of the morphine also lead to greater pain in the open than hidden group.

In another experiment diazepam was used and anxiety assessed. In this case hidden administration had no effect, either at administration or cessation, while open administration lead to decrease on administration and increase on interruption.

In other words, open administration potentiated the effect in one case and ‘created’ it in the other.

Kihlstrom (2003) observed that such studies on “open” versus “hidden” medical treatments reveal that patients’ knowledge, beliefs, and expectations can make a difference to outcome. See also Ader (2003), Greenberg (2002), Temple (2003), Wang (2003).

(e) Lessons from placebo effects – individual differences

Evidence of placebo effects in cancer treatment were reported by Chvetzoff and Tannock (2003), who reviewed reports of cancer randomized controlled trials in which there was a placebo arm (37 trials) or a best supportive care (BSC) arm (10 trials). They found evidence of improvement for patients in the placebo arm in pain (two of six trials) and in appetite (one of seven trials). They concluded that in randomized double-blinded, placebo-controlled trials, and hence presumably with minimum sources of bias, placebos are sometimes associated with improved control of symptoms such as pain and appetite (although rarely with positive tumor response). Of particular interest (as pointed out by commentators on this study) were *individual* as opposed to group responses to placebos, in symptoms such as pain and appetite.

Indeed in trials that looked at individual response to placebos, up to 21% of patients showed improvement in pain or decreased intake of pain medications and up to 27% of patients showed an improvement in appetite (Temple 2003, Wang 2003).

Kwekkeboom (quoted by Wang 2003) noted that such effects do not need to come from [formal] placebos, they can come from simple actions like saying the right things to build a patient's confidence in the treatment: "We can tell the patient about the research that's been done and all the support that there is for [the treatment] and encourage them and give them every reason to believe that [the treatment] should help them". The mechanism for how placebo effects occur is unknown, with the release of endorphins suggested as one possible mechanism (Wang 2003).

It is likely that placebo/psychosocial effects are ever-present, and will continue so, unless care is administered by machine (or therapists become machine-like).

(f) Conclusions

1. For treatments addressing a psychological level it may need to be known that the treatment is occurring for there to be a substantial effect. (This is a considerable impediment to the RCT need to 'blind' subjects.)
2. The psychological treatment' dimension is likely to be broader than just 'formal intervention' versus 'usual care'. In physical interventions the placebo is a non-physical, psychosocial-only treatment. However there is no such clear counterpart in psychosocial trials, given there is always a psychosocial intervention when the person is being treated within the healthcare system: any interaction with the healthcare system may be considered a unique form of psychosocial treatment, such that it is only when people have left active care that the (unacknowledged) 'psychosocial' treatment ceases.
3. A counterpart 'placebo' may need an outside-healthcare condition. That is, increasing levels of psychosocial treatment may be:
 - a. no one to whom the person with cancer can 'talk' (i.e. social isolation)
 - b. someone to whom the person with cancer can 'talk'
 - c. expert cancer therapist(s) to whom the person with cancer can 'talk'(See also Bent 2000 who suggested the need for multiple control groups in investigating the effects of aromatherapy).
4. Individual differences may have a major effect, both in terms of the patient, and the therapist
5. Kissane et al (2003) found some groups of therapists were better than others in causing positive effects from CBT. Any one form of intervention/ specific therapist may or may not suit a particular patient. The 'personality of the therapist/ group leader/ other group members, may be among the most important variables determining effectiveness. In other words, 'relationships are notoriously difficult'.
6. The role of individual differences is apparent in other areas, eg. evidence that for some people 'debriefing' in cases of trauma can give rise to negative effects that are still evident years later (eg. see McNally 2005).

Others have criticized psychosocial research on more traditional grounds. For example Sherman, Mosier et al. (2004) identified various areas of 'need for improvement' in the methodology of the studies they reviewed, identifying need for:

- more explicit use of treatment manuals (to ensure service consistency)
- information about whether participants differed on important variables from those who dropped out
- greater use of 'intention to treat' analyses.
- adjustment for multiple statistical comparisons, particularly in studies that included a great many statistical tests.
- greater clarity as to whether the instruments selected were sensitive to change
- greater use of disease-specific measures of health-related quality of life
- more consideration of the potential impact of "response shift" phenomena (a conceptualization of adaptation).

6.5 Issues in developing more effective interventions in psychosocial care

(a) Difficulties with current EBM

The EBM framework has to date concerned itself largely with trial design (a stress on RCTs) and 'aggregating up' (systematic reviews). Experimenters are exhorted to assess the quality of trial design very carefully (as inferential statistics were once emphasised).

On the other hand, an associated move in contemporary healthcare research has been the pursuit of patient-centred care, treating 'patients as people', the individualisation of care. Yet there EBM has shown little interest in subjecting outcome measurement to the same scrutiny as experimental design - there has been a de-facto neglect of the value of patient-centred outcome measurement within EBM, ie. measuring inputs and outcomes as patients perceive and value them.

The discomfort this gives rise to in the EBM model is explicit when interventions and effects become less physiological, and the full complexity of human interactions/relationships come into play as the key generators and assessors of effects.

Similar criticisms of EBM's emphasis on RCTs have been made from the perspective of other areas of healthcare research, for example Berwick (2005) has argued that naturalistic designs employing multivariate statistics are needed to understand what is occurring in complex interventions.

(b) The need to emphasise patient-centred measurement

As argued, accurate process (nature of the treatment) measures seem to be largely absent, and patient-centred outcome measures are most commonly not tailored to the intervention but 'off the shelf' and hence more likely to be coarse and insensitive to key features.

This is of particular importance because the answer to progressing psychosocial interventions may not be to highly constrain the therapist-patient interaction but to

assess inputs and outcomes with greater precision and care. Measures of both ‘treatment’ and response may need to be much more sophisticated than they are now.

For example, basic work on ‘what goes on’ within a group is needed. This requires the development of instruments to measure and categorise both group dynamics and individual responses (section 7 considers measurement issues further).

More accurate process and outcome measures may also address some of the difficulties for assessing psychosocial interventions based on RCTs. The necessarily overt nature of psychosocial care renders pursuing blindedness to the intervention as virtually impossible (Stephenson and Imrie 1998). Patient and treater blindedness would be less critical elements of trial design if treatment, interaction and response were more accurately measured and understood.

A primary emphasis on following the formal prescriptions of drug trials may be ultimately sterile. Pursuing sensitive and comprehensive process and outcome assessment so as to understand the nature of psychosocial interventions and interactions may ultimately be more valuable.

Summary

There is evidence that psychological/ psychosocial factors influence cancer-related quality of life

- general psychological mechanisms act to increase subjective well-being for people with severe or chronic illness
- adaptation seems to work to minimise the emotional/psychological impact of adverse changes
- coping style/ emotional disposition influence reported QoL and later psychological adjustment
- positive psychological adjustment to cancer is related to an active problem-focused approach and dispositional optimism avoidance-based coping responses seem associated with increased psychological distress
- women who respond to a breast cancer diagnosis with passive acceptance and resignation seem to be at greater risk of poor long term psychological adjustment.

There is evidence that psychological/psychosocial programs interventions improve distress/ QoL, but the effects if present seem inconsistent and weak

- Kibby, Tyc and Mulhern reviewed psychological interventions for children and adolescents with chronic illness and concluded there was strong evidence that the interventions were effective, however the study has been criticized as providing poor evidence due to methodological weaknesses
- Newell et al reported a systematic review of psychological/ psychosocial therapies used by cancer patients, and concluded the methodology quality of most of the trials reviewed was ‘poor’ but found that some psychosocial intervention strategies appeared to provide potential benefits, in particular: group therapy, education, structured and unstructured counseling, and cognitive behavioral therapy offered

medium- and long-term benefits relaxation training and guided imagery appeared to provide benefits for reducing patients' physical side effects

- Ross, Boesen et al reviewed evidence for psychosocial intervention and concluded the issue was unresolved but some of the intervention strategies could affect well-being in certain patient groups (eg. those with high distress)
- Rehse and Pukrop concluded that psychosocial interventions of at least 12 weeks' duration can improve the QoL in adult patients with cancer
- Edwards, Hailey et al conducted a Cochrane Systematic review and concluded that cognitive behavioural therapy did not differ from usual care for anxiety, mood, self esteem, or functional living, but there was some evidence that supportive-expressive group therapy lead to improved emotional control and reduced reported pain compared with usual care
- Sherman, Mosier et al. found for patients with early-stage cancer the evidence favoured brief, skills-oriented services for enhancing adjustment (psychoeducation and cognitive CBT), while for individuals with advanced cancer, the evidence was more compelling for longer-term less highly prescriptive interventions, in particular the supportive-expressive treatment model
- Andersen, Farrar et al investigated women who were surgically treated for breast cancer and found a group intervention lead to significant lowering of anxiety, improvements in perceived social support, improved dietary habits, and reduction in smoking, with improved immune responses paralleling these improvements

There may be effects on healthcare utilisation

- the literature supports the notion that psychosocial interventions may decrease healthcare utilization.

There is little consistent evidence that psychological/ psychosocial factors influence cancer survival

- there is little consistent evidence that psychological coping styles play an important part in survival from, or recurrence of, cancer
- little consistent evidence of psychosocial interventions prolonging life with cancer
- yet reviews are mixed and 'a definite conclusion about whether psychosocial interventions prolong cancer survival seems premature'

There is evidence of mechanisms that could facilitate increased survival via the immune system and/or medication compliance

- increasing evidence of a psychological link to cancer development and progression via the immune system eg. associations of both distress and social support with NK or natural killer cell activity (Lutgendorf et al 2005)
- The compliance of adolescents predictable on the basis of support from parents, nurses, physicians and friends (Kyngas and Rissanen 2001)

Methodological weaknesses seem at least partly responsible for failures to demonstrate the effectiveness of psychosocial interventions

- psychological interventions may be more effective for individuals who are in greater distress or who have fewer psychosocial resources
- many psychosocial interventions incorporate a very broad range of components, and such a ‘kitchen-sink’ approach makes identifying the most effective components very difficult
- identifying how best to target psychosocial interventions may require clearer specification of what they consist of
- studies of placebo effects reveal the ubiquity of psychosocial effects, ie. most if not all ‘physical’ interventions are accompanied by an additional and generally unacknowledged ‘psychosocial treatment’
- knowing a treatment is being performed can have a powerful effect, as revealed by studies investigating hidden versus open drug administration, and it may need to be known that the treatment is occurring for there to be a substantial effect (so influencing the interpretation of RCT results)
- individual differences in terms of response to placebos seem to be substantial
- individual differences in patient and therapist may have a major effect on treatment effectiveness

Hence developing more effective interventions in psychosocial care may require a different focus

- The EBM framework has concerned itself largely with trial design and a stress on RCTs
- There are difficulties for the current EBM model when the key generators and assessors of effects are human operators, requiring the development and application of sensitive measures of action and outcome
- currently accurate process (nature of the treatment) measures seem to be largely absent, and patient-centred outcome measures are most commonly not tailored to the intervention but ‘off the shelf’ hence more likely to be coarse and insensitive
- the answer to progressing psychosocial interventions may not be to highly constrain the therapist-patient interaction but to assess inputs and outcomes with greater precision and care with measures of both ‘treatment’ and response required to be much more sophisticated than they are now.
- patient and treater blindedness would be less critical elements of trial design if treatment, interaction and response were accurately measured and understood.

7 The critical role of appropriate measures

7.1 Applications for measures

(a) Measures to identify those in need and/or most likely to benefit

Holland (2004) reported that 35% patients appearing for their initial visit at a major cancer centre may have significant distress, while less than 10% are actually referred for psychosocial evaluation and counseling. See also Redman et al. (2003)

Stanton (2005) observed that inclusion criteria for programs can be crafted to select individuals or caregivers who are in distress or who possess few psychosocial resources. The approach of offering intervention to those in most need also potentially maximizes the efficient use of scarce resources.

Holland (2004) reported that in the United States a multidisciplinary panel established by the National Comprehensive Cancer Network (NCCN) to establish standards of care recommended that distress trigger referral by oncology staff to a supportive service (similar to pain management guidelines). The panel recommended use of a rapid screen in the waiting room to identify distressed patients coupled with a Problem List to identify the source(s) of distress (psychological, family, social, spiritual, practical, physical).

Edwards and Clarke (2005) have described a 'family relationships inventory' (FRI) to identify families at risk of family dysfunction, members with clinical depression and/or clinical levels of anxiety.

(b) Process measures

Measures are needed to signal the degree to which treatment is appropriate (e.g. follow clinical guidelines where such exist), or identify treatment elements to allow later determination of their relationship to outcomes (see Section 6.4). Identifying the necessary treatment elements and ensuring these are included will ultimately be fundamental to the operation of effective psychosocial programs, both in terms of quality assurance and periodic program evaluation.

(c) Outcome measures

Osoba, Bezjak et al (2005), reporting from the Clinical Trials Group of the National Cancer Institute of Canada, described how clinicians are being confronted with increasing amounts of health-related quality of life (HQoL) data, with a need for a greater understanding of the analysis and interpretation of HQoL data so it can be reported in an appropriate manner, and described an approach that aimed to emphasise the clinical meaning of the results and avoid complex statistical modelling.

Bottomley et al (2003) on behalf of the European Organization for Research and Treatment of Cancer (EORTC; one of the largest cancer clinical trial organisations in Europe) noted that quality of life (QoL) research has become an important aspect of

cancer clinical trials as QoL results impact on both future research and treatment decisions for clinicians.

As described by Owen et al (2001), ‘global health outcomes’ most relevant to treatment decisions by physicians and health-care organizations are mortality/survival, resource utilization, and health-related quality of life or HQoL (the primary patient-centred measures of outcome: see O’Connor 2004). Owen et al observed that while most studies of psychosocial cancer interventions assessed patients’ symptoms and distress, but disregarded measurements of resource utilization and other aspects of HQoL (e.g. interpersonal QoL was under-reported).

A greater emphasis on understanding quality of life measurement issues and mediating/moderating processes associated with improvement in outcomes is necessary, as well as studies of treatment costs and offsets (such as decreased healthcare utilization).

(d) Measures in clinical practice

O’Connor (2004) noted that clinicians are increasingly considering the importance of HQoL in the care of cancer patients. The impact of computer-administered quality of life measurements in oncology clinics was examined by Velikova et al (2002), who found that it led clinicians to enquire more often about daily activities, emotional problems and work related issues, with an overall increase in the number of issues discussed. Patients felt that the questionnaires were a useful tool to tell the doctors about their problems, while clinicians perceived that the quality of life data helped to identify issues for discussion and to detect change over time.

As described by O’Connor (2004), the potential benefits of the use of HQoL measures in clinical practice are:

- to direct attention at appropriate areas
- more accurate status assessment
- more effective consultations
- greater informed choice regarding treatments

Other important measures include pain (see Thomas and Weiss 2000; Zaza and Baine 2002) and fatigue (see Schwarz, Krauss and Hinz 2003).

For further discussion of HQoL measures in clinical practice see Higginson & Carr (2001), Efficace et al (2003), and Velikova et al (2001).

7.2 Some outcome/ quality of life measures in common use

The following lists a sample of the HQoL measures reported in the literature. No analysis of the suitability of the tests has been conducted, and appearance in this list does not mean the test is considered suitable for its declared purpose.

For a general discussion on issues in measuring HQoL, common limitations of instruments, and a method for assessing the validity and appropriateness of measures, see O’Connor (2004).

(a) HQoL measures targeting child/ adolescent cancer

A range of questionnaires is currently in use for assessing and reporting on quality of life data for young people with cancer. A sample is as follows.

PCQL-32, Pediatric Cancer Quality of Life Inventory-32 - a standardized assessment instrument to assess pediatric cancer patient's health-related quality of life (HRQOL) outcomes, for monitoring outcomes for children and adolescents with cancer. See e.g. Varni, Rode et al (1999).

PedsQL, Pediatric Quality of Life Inventory - a modular instrument designed to measure health-related quality of life (HRQOL) in children and adolescents ages 2-18 years. The PedsQL consists of a 15-item core measure of global HRQOL and eight supplemental modules assessing specific symptom or treatment domains. The PedsQL 4.0 Generic Core Scales are multidimensional child self-report and parent proxy-report scales developed as the generic core measure to be integrated with the PedsQL disease specific modules. The PedsQL Multidimensional Fatigue Scale was designed to measure fatigue in pediatric patients. The PedsQL 3.0 Cancer Module was designed to measure pediatric cancer specific HRQOL. Also PedsQL Emotional Functioning and Pain Scales. See e.g. Varni, Seid and Rode (1999), Varni, Burwinkle et al (2002), Felder-Puig, Frey et al (2004), Varni, Burwinkle and Katz (2004).

PedsQLTM - a measure for assessing quality of life in survivors of childhood cancer. See e.g. Eiser, Vance et al (2003).

PEDQOL - a self-rating QoL questionnaire for children between 8 and 18 years developed for pediatric oncology. See e.g. Calaminus et al (2000).

QOLCC, Quality of life for cancer children in Taiwan –a quality-of-life (QOL) assessment specifically designed for Taiwanese pediatric cancer patients (7-18 years) and their parents/caregivers. See Yeh, Chao and Hung (2004).

QOL-CS, Quality of Life-Cancer Survivors - a 41-item visual analog scale composed of four multi-item sub-scales (physical well-being, psychological well-being, social well-being, spiritual well-being) and two sub-components (fears, distress). See eg. Zebrak and Chesler (2001).

SOIS, Severity of Illness Scale - a measure that focuses on the medical severity of illness of children with cancer from the point of view of medical personnel. Physicians and nurses rated the SOIS positively for brevity, ease of completion, and usefulness in depicting medical severity of disease. See e.g. Young-Saleme and Prevatt (2001).

(b) HQoL Cancer measures - General

EORTC QLQ-30, European Organisation for Research and Treatment of Cancer QOL Core Questionnaire 30 - measure of Quality Of Life (QOL) used in cancer clinical trials. See e.g. Rodarya et al (2004), Schwarz, Hinz et al (2001).

FACIT, Functional Assessment of Chronic Illness Therapy - - measure of Quality Of Life (QOL) used in cancer clinical trials. See e.g. Rodarya et al (2004).

FACIT-Sp, Functional assessment of chronic illness therapy--Spiritual Well-being Scale – a measure of spiritual well-being for people with cancer and other chronic illnesses. See e.g. Peterman et al (2002).

FACT-BMT, bone marrow transplant subscale (BMTS) for the general Functional Assessment of Cancer Therapy (FACT) - measures five dimensions of quality of life in bone marrow transplant patients. See e.g. McQuellon et al (1997), Kopp et al (2000), Heinonen et al (2001), Helder et al (2004).

FACT-G, Functional Assessment of Cancer Therapy-General – a clinically-useful health-related quality of life (HRQOL) instrument for cancer. See e.g. Brucker et al 2005, Ratanatharathorn et al (2001).

QOL-BMT-ST - a measure of quality of life (QOL) post-bone marrow transplant (post-BMT). See e.g. Saleh et al (2001).

SIRO, Stress Index RadioOncology --a questionnaire measuring quality of life/ psychosocial distress of cancer patients, including radiotherapy-induced distress. See e.g. Sehlen et al (2003).

(c) Other non-cancer measures

Multiple Affect Adjective Check List (e.g. see Lubin, Van Whitlock et al 2001), and *Profile of Mood States or POMS* (e.g. see Shacham 1983), for measuring depression and anxiety.

SEIQoLDW, Schedule for the Evaluation of Individual Quality of Life}Direct Weighting. See e.g. Montgomery et al (2002).

SBI-15R, Systems of Belief Inventory – for use in measuring religious and spiritual beliefs as a potentially mediating variable in coping with life-threatening illness and in the measurement of QOL. See e.g. Holland et al (1998).

7.3 A note on assessing and/or developing patient-centred measures such as HQoL

It is essential to stress that the prior use of an instrument does not mean it is appropriate for the desired purpose. It is wise to assume that patient-centred measures are of questionable validity until an extensive examination has proven otherwise.

A central point is that validity refers to the appropriateness of the instrument for the purpose intended by the user, i.e. *no instruments are valid per se*. There are numerous considerations, major ones being whether the measures contain the questions of importance to the patients involved, and the method for aggregating responses.

As a shorthand method, the following is recommended.

Firstly, assess the adequacy of the process of construction. In other words was the instrument constructed in such a way that one would 'prima facie' expect it to accurately measure what it is proposed to measure - was validity built into a test from the outset? This entails considering the following:

- Were the purpose of the test and the concept (construct) to be measured clearly defined?
- Were an adequate range of content areas assessed? (For example were interpersonal relationships included - see Owens et al 2001, Sherman et al 2004).
- Were clear and unambiguous items prepared to represent each domain and were analyses conducted to select the most valid items?
- If an overall score was provided, were items/ sub-scales/domains combined weighted in such a way as to ensure the overall score was valid ?

Secondly, was there evidence of correspondence between test scores and direct measures of the construct being estimated? The ultimate means of determining if an instrument is adequately assessing HQOL/ health status, is its ability to predict (or otherwise correspond to) a criterion or criteria. This could be the patient's report or an alternative measure that is close to what the test is intended to assess.

For a full discussion of this area see O'Connor (2004).

7.4 Conclusions regarding measures

As argued earlier (see Section 6.4, 6.5), the measurement of outcomes in psychological intervention trials needs much more careful attention.

Cancer-specific assessments, such as treatment-related fatigue, cancer-specific distress, and sexual functioning, have been reported to demonstrate larger intervention effects than do more general psychological and quality of life indices (see Stanton 2005; Goodwin, Black et al 2003, Holland 2004, Owen et al 2001). This may reflect the insensitivity that can occur when more generic, less focused instruments are used.

Gerharz, Eiser and Woodhouse (2003) observed that measuring QoL is difficult in children and adolescents, and this is reflected in the few suitable instruments available. In examining the EORTC QLQ-C30, Schwarz, Hinz et al (2001) stressed the finding that age and sex differences must be taken into consideration when different groups of cancer patients are compared.

Goodwin et al (2003) examined randomized trials in breast cancer that included self-reported HRQOL or psychosocial outcomes. They found a need for the development of targeted HQoL instruments that contain items or scales that measure areas likely to be affected by the particular cancer or its treatment, which are not captured by general or even cancer specific measures of HQoL. They gave the example of breast cancer, where menopausal symptoms, cognitive functioning in trials of adjuvant therapy, and body-image symptoms are relevant. Goodwin et al also observed the absence of identified treatment effects on social functioning in clinical trials and suggested this may be because this domain is poorly measured using available HQoL instruments.

Eiser and Morse (2001) surveyed HQoL measures in children with chronic diseases and stressed the need for basic research to understand how children interpret questions in QoL measures, as well as to explore the differences in meaning of items between children and adults and between children of different ages. It was recommended that those developing new measures work more closely with clinicians and families in order to ensure both the quality of the measures and their appropriateness in different settings.

Mitchell et al (2004) stated that there is a paucity of information on quality-of-life in adolescents and young adults with cancer. As clinical trials increasingly incorporate measures of quality-of-life, quality instruments will become an important requirement and focus.

Bleyer (2002) observed that the quality-of-life issues during and after cancer therapy that have been considered in studies of children have not received the same attention in adolescents and young adults. Very few studies have been performed on the quality of life in adolescent and young adult cancer patients and survivors.

Summary

Applications for measures

- measures to identify those in need and/or most likely to benefit, eg. individuals or caregivers who are in distress or who possess few psychosocial resources.
- process measures to signal the degree to which treatment is appropriate or identify treatment elements
- outcome measures to comprehensively assess results in a meaningful way to track outcomes of importance to patients as well as studies of treatment costs and offsets such as decreased healthcare utilization
- measures in clinical practice to direct attention at areas of importance to patients and allow greater informed choice regarding treatments

Outcome/ quality of life measures in common use

- HQoL measures targeting child/ adolescent cancer
- HQoL Cancer measures
- measures non-specific to cancer

On assessing, selecting and/or developing patient-centred measures

- It cannot be assumed that the prior use of an instrument renders it appropriate for the desired purpose
- validity refers to the appropriateness of the instrument for the purpose intended by the user
- no instruments are valid per se – all need to be assessed for suitability for their intended purpose.

Conclusions regarding measures

- the measurement of outcomes in psychological intervention trials needs much more careful attention.
- there appear to be few suitable instruments for measuring QoL in children and adolescents
- there is a general need for the development of targeted HQoL instruments that contain items or scales that measure areas likely to be affected by the particular cancer or its treatment – it is frequently observed in the literature that the available instruments did not assess areas of importance to patients (eg. body-image, social functioning)
- there is a paucity of information on quality-of-life in adolescents and young adults with cancer, and measures of quality-of-life will become increasingly important.

8 Overall conclusions

Firstly, it is apparent that there are a broad range of program elements that have a place in a comprehensive program of appropriate healthcare setting and psychosocial treatment interventions. Program elements have been outlined in Chapters 2., 3., 5., and 6.

While the current state of research and research evidence does not allow dogmatic assertions, a structure that allows an initial role for the majority of the elements surveyed seems desirable, coupled with a clear and detailed program of evaluation and refinement.

Adolescent cancer program elements would include:

- access to the broad range of psychosocial interventions identified as of potential value – accessible and reliable information for patients and their families, individual counseling, education/ psycho-education, peer support, CBT, and SEGT.
- advocacy and support of shared decision making between patients/families and clinicians
- promotion of the use of health status /quality of life measures in clinical settings to encourage the identification and addressing of patient concerns
- access to specialised care and support for specific groups of patients—e.g. minority groups, the socially disadvantaged, and those with little family support
- support for patients to self-manage problems associated with cancer
- continuing support for patients living with or without disease following treatment
- psychosocial support for families, parents and siblings
- availability of palliative care and end-of-life support (ideally within the domestic environment).

Advocacy for the development of appropriate psychosocial services outside the organization would do worse than to follow the priorities as outlined by Redman (2003) in the case of breast cancer services:

- development of clinical guidelines, to outline agreement about what constitutes best supportive care based on the most recent research.
- systemic change in healthcare - including the development of specialist teenager units as part of health service delivery, clinician training, continuing education and quality assurance programs.
- development of clinician communication skills through interactive training
- a demonstration project for changing policy in supportive care (eg. a national demonstration project was conducted to explore the feasibility, acceptability, cost and impact of specialist breast nurses across Australia).
- modifying local service delivery, with closer integration between support services and hospitals
- monitoring of clinical supportive care – from initial referral, advice (including infertility), admission to clinical trials, etc.

Of equal if not greater importance is the initiation of a research program into the development of maximally effective psychosocial interventions based on the careful and detailed measurement of processes and outcomes. Such a program is a logical

extension of the recognition of the importance of patient-focussed care, ie. promoting and evaluating interventions that are valued by patients.

As argued in Section 6., such a research program would recognize the following:

1. Routine physical treatments include additional ‘psychosocial’ treatments, that can affect patients in various ways
2. Patients may respond strongly in different ways to psychosocial treatments – where one patient will favour the approach, another may not (hence what constitutes ‘usual care’ may be better psychosocial care for some).
3. Effective psychosocial interventions may require an amount of interplay between therapist and patient, and this dynamic aspect may be largely responsible for positive effects. Identification of the most effective features may require recognition of this interactive nature. The value of the ‘treatment’ may depend on how it is presented, perceived, and responded to (ie. based on the ‘chemistry’ between the therapist and individual patients).
4. Accurate intervention, process, and outcome measures seem largely absent in many studies to date, and need to be introduced. New instruments to measure and categorise group dynamics and individual responses are likely to be required (see O’Connor 2004 for how to form such).
5. Patient-centred outcome measures need to be tailored to the intervention, not just ‘off the shelf’. It is a misconception of validity to consider established instruments have been ‘validated’ (see Section 7.)
6. Outcome measures may currently be more important than ‘level of evidence’ in assessing the effectiveness of psychosocial care. Disregarding appropriate measurement of treatment and response allows the risk of ‘garbage in, garbage out’, where the experimental design process is followed, but the content is deficient.
7. The most important requirement for productive research is likely to be a stress on understanding the nature and dynamics of:
 - ❖ patient/client
 - ❖ therapist/experimenter
 - ❖ the situation they are inand aim to predict it.

The research content may further include:

- identification and measurement of the areas of concern to adolescents, be they processes or outcomes, and related to illness, clinical treatment, or general healthcare practices
- development of new outcome measures based on an understanding of what is valued and what offsets there may be - such as health behaviors, treatment adherence, hospital days, physical symptoms, family functioning, personal growth
- the role of individual characteristics of participants and the intervention (patient personality, social context, treatment duration, leader characteristics) in influencing intervention outcomes

- identification of the individuals most likely to benefit from particular psychosocial interventions
- data on group processes or dynamics in psychosocial interventions, there being a lack of systematic studies of how group processes change or how they relate to outcomes
- which process variables are most important for which types of interventions (e.g., cognitive-behavioral versus SEG versus educational).
- the frequency and nature of the psychosocial problems of survivors living with or without cancer
- the situation of ethnic minorities and rural patient populations
- the roles and activities of self-help groups to shape 'best practice'
- measures of cost-effectiveness and resource utilization

Sherman, Mosier et al (2004), and Evered et al (2004), may be consulted for additional areas.

Appendix: Measures

Services Quality: perceived and/ or versus standards

By service type:

Hospital services (OP, Inp)

GP services

Specialist services

School/ education services

Cancer council services

Communications with patients/ families:

Information provided

Question answering

Involvement in treatment decisions

Communications between agencies

Between health services

Between health and other services

Sub-group problems:

Problems with particular diseases

Problems with particular age groups

Problems with particular ethnic groups

Males versus females

Health/ QoL

Measures for different cancers

Family functioning

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