# Chapter 14
# Overcoming Psychological Responses in Cancer Management

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**Abstract** Mental health in sub-Saharan Africa remains poorly funded. Mental health policies are not well formulated, and there is a shortage of human resources and infrastructure compared to high income countries. Tools for screening, diagnosis and monitoring of symptoms are also poorly developed. This review discusses the current state in sub-Saharan Africa with an emphasis on cancer. The second section is a brief introduction to psycho-oncology, the psychological responses to the different stages of cancer. Pre-diagnosis to post treatment are discussed based on current practice in the West. Other mental health conditions that are linked to cancer are discussed, and there is brief introduction to relevant therapeutic interventions.

**Keywords** Mental health • Psycho-oncology • Sub-Saharan Africa • Cancer

## 14.1 Mental Health in Sub-Saharan African

The budget for mental health is about 0.5% of total health budgets in low income countries compared with more than 5% in high income countries (Jack et al. 2014). The median mental health expenditure per capita is 0.20 USD in low income counties compared to 44.84 USD in high income countries (World Health Organisation 2011). This financial inadequacy manifests itself in multiple ways including a rate of 0.06 mental health outpatient facilities per 100,000 people in Africa compared to

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a world average of 0.61 and 1.47 in Europe (World Health Organisation 2011). This contributes to the annual rate of 80 outpatients per 100,000 in Africa compared with a world average of 384 and with 1926 in Europe. Only 49% of low income countries have mental health policy with a 62% population coverage compared with the world average of 61% and 72% respectively (World Health Organisation 2011).

Despite clinical depression being the main cause of disability, fewer than 10% of individuals in low-resource countries have access to treatment (Sweetland et al. 2014). In Africa, the median expenditure on anti-depressants is $210 per 100,000 population compared with a median of $258,120 and $795,560 in the world and Europe respectively (World Health Organisation 2011). Despite the universality in the experience of depression and anxiety in sub-Saharan Africa (SSA), there are differences in the salience, manifestation and expression of symptoms (Sweetland et al. 2014).

### *14.1.1 Screening Tools*

Apart from financial considerations, there are barriers to adequate mental health care which include shortage of mental health specialists, poor access and availability of treatment and a lack of appropriate screening tools to aid assessment. In a systematic review by Sweetland et al. (2014) of possible screening instruments, they concluded that the majority were developed in Western countries and may be of questionable relevance in diverse social and cultural settings. However, rapid ethnographic methods have evolved as an efficient and low cost strategy through which instruments can be locally adapted to be maximally effective across diverse settings as well as being useful as tools to deliver care and evidence suggest that non-specialist health workers are capable of providing effective counselling as well as case management for depression in low and middle income countries (Sweetland et al. 2014).

Olagunju et al. (2013) compared the diagnostic validity of CES-DR (Centre for Epidemiological Studies Depression Scale Revised) to SCAN (Schedule for Clinical Assessment in Neuropsychiatry) in 200 cancer patients in Nigeria. CES-DR was found to be a useful tool for depression but with diagnostic limitation when compared to SCAN. 49% of patients were found to have significant depressive symptoms with CES-DR compared to 27.5% when SCAN was used. The positive and negative predictive values of CES-DR were 0.54 and 0.98 respectively (Olagunju et al. 2013). Patient Health Questionnare-9 (PHQ-9) was validated as a depression screening tool in 397 HIV patients in Johannesburg, South Africa and was found to be useful (Cholera et al. 2014). PHQ-9 has been found useful in other sub-Saharan countries including Ethiopia (Galaye et al. 2013) and Cameroon (Pence et al. 2012) although the study from Cameroon showed a high specificity and a low sensitivity. A Swahili translation of PHQ-9 was validated in Kenyan head and neck cancer patients and it was found to be reliable with a good internal consistency and construct validity. It also correlated strongly with TNM stage (Omoro et al. 2006).

Recognising patients who will cope effectively, or not, with the existential plight in cancer is essential and the first 100 days after diagnosis is important (Weissman and Worden 1976–1977). Olagunju and Aina (2011) using SCAN (Schedule to Clinical Assessment Neuropsychiatry) and Centre for Epidemiological Studies Depression Scale Revised (CES-DR), a socio-demographic profile questionnaires identified depression in 27.5% of cancer patients compared to 9.5% ($p < 0.001$) in control in an oncology clinic in West Africa. Of the cancer patients, 7.2% and 65.5% had severe and moderate depression respectively. Using the Hospital Anxiety and Depression Scale (HADS), Beck Depression Inventory and structured psychiatric interview, Berard et al. (1998) found only 14% prevalence of depression in 456 cancer patients in a hospital in South Africa, a lower incidence than reported. More importantly however, only 14% of the depressed patients had been identified and treated prior to the study.

In a study from Nigeria, using the Mini International Neuropsychiatric Interview (MINI), 17% and 23.4% of patients were found to have major and minor depressive disorders and these correlated with being single (odds Ratio (OR) 3.09, 95% CI 1.30–7.42), perceived poor support (OR 5.38, 95%CI 1.88–16.63) and advanced stage of cancer (OR 3.22, 95%CI 1.32–8.26), (Popoola and Adewuya 2012). Similarly, the presence of pain with a prevalence of 73.8% of cancer patients in Ibadan, Nigeria was significantly associated with depressive and anxiety symptoms, suicidal ideation, poor sleep and poor overall quality of life (Nuhu et al. 2009).

### *14.1.2 Burden*

The effect of these psychological problems on the economy was assessed in the general population in Ghana. Cross-sectional analysis using data from the Ghana Socioeconomic Panel Survey of 5009 households with a total of 6360 adults (after exclusions from a total of 19,167 participants interviewed) and mental health assessment by Kessler 10 Psychological Distress Scale, there was a prevalence of severe and moderate psychological distress in 7.7% and 13% of adults respectively (Canavan et al. 2013). Unemployment rate in severe and moderated psychological distress were 31% and 17.7% respectively compared to 6.6% in those with mild or no psychological distress. Extrapolating loss of productivity (unemployment and absences from work), from moderate and severe psychological distress to the whole country, Ghana, an estimated 6.8% of GDP is lost (Canavan et al. 2013). Failing to address mental health disorders cost low-income and middle-income countries US$870 billion every year and it is estimated that it would more than double to US$2.1 trillion by 2030 (Jack et al. 2014).

Ohaeri et al. (1999) using a burden questionnaire found high frequency of all incidences of burden in care givers of cervical and breast cancer patients in Nigeria. However, emotional ties at home and social relationship in the neighbourhood seemed intact indicating tolerance and lack of social stigma. The financial burden was more problematic than the effects of caring on family routing and the severity

of patient's worries and psychopathological symptoms were not significantly correlated with care-giver global ratings of burden (Ohaeri et al. 1999). Despite the implied useful roles relatives play in community care of cancer patients, a high level of burden and psychological morbidity was found in 47% of care givers and these were associated with absence of financial support (Yusuf et al. 2011).

Using a short form (26 items) of WHO Quality of Life (WHOQOL-Bref) questionnaire in Sudanese patients with cancers, there was a higher quality of life (QOL) in patients who were married, those who had higher education and better employment (Awadalla et al. 2007). Those with longer duration of illness had a higher QOL There was a high correlation between the patients' ratings and caregivers' impressions of patients' QOL and the caregivers' impression was a significant predictor of patients' and caregivers' QOL (Awadalla et al. 2007). However, not surprisingly, a qualitative study of patients with leukaemia showed that majority of patients felt that they were a liability on their caregivers (Adejoh et al. 2013).

All of these studies are addressing some of the problems related to sub-Saharan Africa. There are currently studies looking at intervention in a stepped care fashion for the treatment of depression (Gureje et al. 2015). However, even in Western world, there is little research in the cost-effectiveness of psychological treatments (Castelnuovo et al. 2016). Currently, therapeutic approaches that evolved in Europe particularly from the psychopharmacological perspective would be the first option in SSA without further studies are being carried out. Sociocultural, religious and biological differences are possible challenges. The rest of this chapter will look at the emerging field of psycho-oncology.

## 14.2 Psycho-Oncology

Psycho-oncology has developed as a formal branch of psychiatry and an academic field that addresses the phenomenology, prevention and treatment of psychiatric illness in cancer patients and it addresses the role of psychological factors in the onset and progression of cancer.

The experience of cancer includes distinct chronological phases:

- Pre-diagnosis
- Diagnosis
- Initial treatment
- Post treatment
- Recurrence
- Progressive disease
- Terminal or palliation phase

Each phase has a normal (adaptive) and abnormal (maladaptive) response (Table 14.1).

**Table 14.1** Psychological responses to cancer (Fawzy et al. Consultation Liaison Psychiatry 2nd edition)

| Phase | Normal, adaptive | | Abnormal, maladaptive |
|---|---|---|---|
| Pre-diagnosis | Concern about the possibility of having cancer | | Hyper-vigilance<br>Inappropriate preoccupation<br>Development of cancer symptoms without having the disease |
| Diagnosis | Shock<br>Disbelief<br>Initial, partial denial<br>Anger, hostility, persecutory feelings<br>Anxiety<br>Depression | | Complete denial, without treatment refusal<br>Fatalistic treatment refusal on the grounds that death is inevitable<br>Clinical depression<br>Search for alternative (quack) cures |
| Initial treatment | Surgery | Fear of pain and death<br>Fear of anaesthesia<br>Grief reaction to changes in body image | Postponement of surgery<br>Search for nonsurgical alternatives<br>Postoperative reactive depression |
| | Radiation therapy | Fear of x-ray equipment and of side effects<br>Fear of abandonment | Psychotic-like delusions/hallucinations |
| | Chemo-therapy | Fear of side effects<br>Anxiety, mild depression<br>Changes in body image<br>Isolation<br>Altruistic feelings | Residual drug-induces psychoses<br>Severe isolation-induced psychotic disturbances<br>Organic brain syndrome/delirium |
| Post-treatment | Return to normal coping patterns<br>Fear of recurrence<br>Post-treatment anxiety and depression | | Severe post-treatment anxiety and depression |
| Recurrence | Shock<br>Disbelief<br>Initial, partial denial<br>Anger, hostility, persecutory feelings<br>Anxiety<br>Depression | | Severe reactive depression with insomnia, anorexia, restlessness, anxiety and irritability |
| Progressive disease | Frenzied search for new information, other consultants, and quack cures | | Depression |
| Terminal/ palliation | Fear of abandonment<br>Fear of loss of composure and dignity<br>Fear of pain<br>Unfinished business<br>Personal mourning with anticipation of death and a degree of acceptance<br>Fear of the unknown | | Depression<br>Acute delirium |

In the pre-diagnostic and diagnostic phases, psychiatric referrals are made when the patient's psychiatric signs and symptoms cause severe distress and interfere with a management plan.

Referral indications:

- Fatalistic treatment refusal, anger towards family, friends or a deity
- Persistent depressive symptoms for more than 2 weeks

The psychiatric consultant takes the time to explore coping strategies for specific problems to hear out anguish, and to listen to the patients fears and expectations, armed with medical knowledge that permit dispelling fears that are unfounded. Patients must be helped to come to terms with the reality of a limited life span and the inevitability of death. This is an existential dilemma (Weissman and Worden 1976–1977) that may require obtaining a spiritual history, spiritual assessment and interventions that require religious personnel.

### *14.2.1 Psychiatric Illness in Cancer Patients*

Incidence of psychiatric illness can be as high as 51% among patients with cancer with most of the psychiatrically ill patients having anxiety and mood disorders (Berard et al. 1998, Hardman et al. 1989, McCartney et al. 1989). In a series looking at 1721 cancer patients referred for psychiatric assessments, Adjustment disorders (34%) occurred most frequently followed by delirium (17.4%) and major depression (14.4%), (Akechi et al. 2001). The frequency of the top three disorders differed based on some patient characteristics (Table 14.2).

Assessment of psychiatric illness in cancer patients involves a comprehensive assessment of biological and psychosocial factors. The patient is evaluated in the context of his or her coping style, developmental history, phase of illness and psychiatric history with knowledge of the natural course of the illness and the common

**Table 14.2** Patients' characteristics and psychiatric diagnosis (Akechi et al. 2001)

| | No (%) | | |
|---|---|---|---|
| Characteristics | Adjustment disorder | Major depression | Delirium |
| Gender | | | |
| Male | 273 (30.4) | 111 (12.4) | 218 (24.3) |
| Female | 311 (37.8) | 136 (16.5) | 81 (9.8) |
| Age (years) | | | |
| < 60 | 377 (40.5) | 130 (14.0) | 83 (8.9) |
| > 60 | 207 (26.2) | 117 (14.8) | 213 (26.9) |
| Performance status | | | |
| 0–2 | 442 (36.4) | 182 (15.0) | 94 (7.7) |
| 3–4 | 141 (28.6) | 151 (15.3) | 210 (21.3) |
| Pain | | | |
| Absent | 224 (34.3) | 88 (13.5) | 47 (7.2) |
| Present | 349 (35.4) | 151 (15.3) | 210 (21.3) |

complications of treatment. Treatment needs to be characterised by therapeutic activism with the use of effective psychopharmacological and brief psychotherapeutic modalities to relieve symptoms rapidly and prevent complications due to preventable psychological trauma.

#### 14.2.1.1 Adjustment Disorders

Most of these are related to anxiety and other mixed anxiety and depressed mood (Akechi et al. 2001).

**Anxiety Disorders** Anxiety is often a response to existential plight and to the threat of deformity, abandonment, loss of control and dignity that comes with cancer.

Specific anxiety syndromes that are common in cancer include:

**Anticipatory Nausea and Vomiting** Side effects of chemotherapy often include profound nausea and vomiting, a vivid visceral memory that may result in classical conditioning to associated stimuli in up to 75% of patients. Patients who vomit secondary to chemotherapy frequently develop an aversion to the hospital, staff and the sight and smell of medical implements.

Appropriate management strategies include;

- Fixed and optimal anti-emetic treatment to block the initial episode of nausea and vomiting and avoid a conditioned response.
- Minimise anxiety just before treatment by the use of benzodiazepines such as alprazolam or lorazepam.
- Behaviour therapies may be useful.
- Systemic desensitisation extinguishes the conditional response (Morrow and Morrell 1982) or cognitive distraction that blocks the perception of the conditioned stimulus may successfully eliminate the anxiety that cause due to classical conditioning.
- Combining benzodiazepines with highly specific, centrally acting anti-emetics like ondansetron and dexamethasone has revolutionised chemotherapy and reduced the experience of nausea and vomiting.

**Claustrophobia** Patients with anxiety in closed spaces have difficulties with MRI equipment (Melendez and McCrank 1993). They can be managed with anti-anxiety pre-medication and strategies to tailor and shorten the test. Good preparation with special attention to the patient's anxieties would also be helpful.

#### 14.2.1.2 Delirium

Delirium is a frequent result of cancer and its treatment. It is a neuro-psychiatric response rather than a psychological reaction but it always needs to be taken into consideration when carrying out psychiatric evaluations of cancer patients. Agitation

and hyperalertness are the most common behavioural symptoms in cancer patients with delirium (Oloffson et al. 1996). Haloperidol has been found to be effective in patients with delirium (Akechi et al. 1996).

Other neuropsychiatric effects include; effects of metastatic brain tumours, leptomeningeal disease which is usually associated with mental status changes, cranial nerve changes and radicular signs. Nonspecific signs that prompt psychiatric referrals include headache, balance difficulties and seizures. Others include complex partial seizures, paraneoplastic syndromes and treatment related neuropsychiatric effects.

#### 14.2.1.3 Depression

Depressive disorders in cancer patients may be a response to the psychosocial stress of cancer, a medical symptom of cancer or its treatment or it may be coincidental. Prevalence in Western literature ranges from 8% to 14% (Sellick and Crooks 1999). Adjustment disorder is higher: up to 25% (Derogatis et al. 1983). Pancreatic cancer has been associated with a higher proportion of dysphoria (Holland et al. 1986). Steroids and biological agents such as Interferon and the anticancer medication most commonly associated with affective instability. Patients who are generally most vulnerable to distress and are susceptible to depression have more physical symptoms, more financial and mental problems and lower ego strength (Veissmon AD, Coping with cancer. New York, McGraw Hill 1979, p. 67).

Diagnosis of depression is confounded by similar neuro-degenerative or physical symptoms in both depression and somatic diseases. The Zung self rating depressive scale has been proven as an effective and reliable screening tool for depression in cancer patients. (Dugan et al. 1998) The brief symptom inventory was also found to be a fair screen tool but the Beck depression inventory was overly sensitive (Beck and Steer 1984).

Suicide is rare in cancer patients. Risk factors include:

- Alcohol abuse
- Chemotherapy
- Delirium
- Depression
- Financial problems
- Head and neck cancer
- Physical and emotional exhaustion
- Poorly controlled pain
- Root prognosis
- Social isolation
- Advanced stage of disease.

However, epidemiological studies in Finland (Louhiviori et al. 1979) and Connecticut (Fox et al. 1982) as well as studies of death certificates demonstrated only a slightly higher suicide rate amongst patients with cancer compared with the general population.

However, cancer patients hold on to the possibility of ending their lives as a way to keep going.

Cancer patients have featured prominently in the debates about patient assisted suicide and euthanasia. However, it is important for clinicians to remember that even dying patients whose emotional, physical and spiritual needs are being met rarely pursue the option of suicide. Most patients wish to receive continuing care and symptomatic relief even if their disease is progressing (Massie et al. 1994).

**Psychopharmacological Treatment** Antidepressant choice tends to depend on target symptoms and the need to avoid undesirable side effects in a given patient. The choice depends on interactions with other medication, tolerance of postural hypotension, urinary retention, constipation and individual sensitivities.

Options include tricyclic antidepressants for those without cardiac conduct defects. Psychostimulants like dextroamphetamine, methylphenidate or Pemoline (Breitbart et al. 1995) for a rapid effect in patients who are systematically ill, apathetic and not eating. Trazodone is popular for addressing target symptoms like insomnia and appetite disturbance but it causes nausea and orthostatic hypertension. SSRI's are very commonly used by medical surgical population. They lack anticholinergic and sedative side effects but can cause nausea, diarrhoea and agitation.

#### 14.2.1.4 Other Neuro-Psychiatric Presentations

Akathisia from using phenothiazines as anti-emetics.

Complex parietal seizures- occur commonly like generalised seizures. Causes include cerebral metastasis and injury (Gilliam et al. 1993), Leptomeningeal disease (Dexter et al. 1990), electrolyte imbalance like hypomagnesemia. (Schilsky and Anderson 1979).

Fear is the most common emotion associated with complex partial seizures (Gloor et al. 1982; McNamara and Fogel 1990) so autonomous episodes of anxiety such as panic attacks should arouse suspicion of complex partial seizures. Other pointers include intermittent confusion associated with tremor, odd hallucinations and syncope. Pulmonary embolism and pulmonary oedema can cause anxiety secondary hypoxia. Acute and post-traumatic stress disorder (Smith et al. 1999). These conditions can be triggered by the diagnosis and treatment of cancer.

Alcoholism/Other Addictions – Alcoholism, smoking and other addictions are major problems in certain settings and it can contribute to poor compliance and anxiety disorders (with alcohol withdrawal being a differential diagnosis to anxiety). Effective assessment and management contributes to improving treatment adherence and quality of life in cancer patients.

**Mania** Mania is rarely related to cancer itself however, in rare cases secondary mania can be associated with diencephalic tumors and cerebral metastases. Corticosteroids are also frequent causes of syndromes resembling mania. For patients with bipolar disorder, lithium and Valproic acid remain appropriate but lithium needs to be withheld on the days before chemotherapy (Greenberg et al.

1993). Lithium favourably increases the patient's white cell count by stimulating production of granulocyte colony stimulating factor and interleukin −6 but at the time of chemotherapy, it may expose more than the desired number of bone marrow cells to cell death.

## 14.3 Psychotherapeutic Treatments

Individual psychotherapy, behavioural treatments and group therapy (Bloch et al. 2000) have all been shown to reduce distress in patients with cancer. Behavioural programmes and hypnosis have resulted in decreased anxiety, pain, nausea and vomiting (Trijsburg et al. 1992).

Psychosocial interventions in general including psychoeducation have been found to improve cancer prognosis in at least one 6 year follow up (Fawzy et al. 2002). This remains an evolving field.

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