PSYCHOLOGICAL DISTRESS, QUALITY OF LIFE, COPING AND ADJUSTMENT:

A COMPARISON OF OSHIWAMBO-SPEAKING AND SESOTHO-SPEAKING

PATIENTS WITH BREAST AND/OR CERVICAL CANCER

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Dedication

I dedicate this dissertation to the memories of mom and dad. Thank you for your never-ending guidance, love, encouragement and inspiration. Thank you for believing in me. You continue to inspire me, from the other side, in my life and in my work. Mom, thank you for stimulating my research interest in the field of psycho-oncology. You showed such incredible faith and brevity in the battle against cancer. I honour your memories.

I dedicate this study also to the memory of my brother, Dr. John Ndemufayo Shino, who passed away from acute leukemia, just a few weeks before completion of this study. Johny, I love you.

I dedicate this dissertation to all cancer patients in both Namibia and South Africa. My dream and wish is that your psychosocial needs are recognized and taken care of, as much as your physical and medical needs are.

"In dreams begin responsibility."
(W. B. Yeats, 1992)

Acknowledgments

Declaration

I, the undersigned, hereby declare that the dissertation hereby handed in for the qualification Philosophiae Doctor at the University of the Free State, is my own independent work and that I have not previously submitted the same work for a qualification at or in another university or faculty.

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Elizabeth Ndeshinuninwa Shino   **Date**

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Executive Summary

Psycho-oncology emerged as a formal discipline in the mid-1970s. Much progress has been made in both research and clinical practice, specifically in developed countries. Psycho-oncological research in developing countries, including Africa, remains scant. Cancer has been viewed as a disease of the western world. However, it is estimated that by the year 2020 cancer incidence in developing countries will surpass that of the developed countries. Given this reality and the high mortality from cancer in Africa, the development and progression of psycho-oncology on the continent is essential to provide a basis for research and clinical practice. Against this background, this exploratory and comparative study aimed to investigate psychosocial aspects of cancer patients in two southern African countries.

The major objective of the current study was five-fold. Firstly, to provide an overview of psycho-oncology research in Africa, with a brief historical perspective of international psycho-oncology. Secondly, the study explored the presence of psychological morbidity in Oshiwambo-speaking Namibian and Sesotho-speaking South African cancer patients. Additionally, the feasibility of the use of a single-item visual analogue screening instrument of psychological distress was explored. Thirdly, the study explored quality of life (QoL) of cancer patients in these two groups. The association of QoL and psychological distress was also explored. Fourthly, the study explored perceived self-efficacy for coping with cancer in these two countries. Fifthly, adjustment to cancer was explored. By its nature of being a comparative study, Oshiwambo-speaking Namibian and Sesotho-speaking South African patients were compared with regards to psychological morbidity, QoL, self-efficacy for coping and adjustment to cancer. The Distress Thermometer (DT), Hospital Anxiety and Depression Scale (HADS), 26-item World Health Organization Quality of Life measure (WHOQOL-Bref), Cancer Behavior Inventory (CBI) and Mental Adjustment to Cancer (MAC) scale were used. The sample consisted of 103 Namibian and 126 South African patients with a histologically-confirmed diagnosis of breast or cervical cancer.

Results suggest that a DT cut-off of 3 is the ideal cut-off score for both groups. Using this DT cut-off, approximately half of the patients in both countries reached the case-

criteria for psychological distress, while a third were identified as distressed on the HADS. About a third scored above the HADS anxiety cut-off. Approximately 30% South African and 20% Namibian patients met the depression case-criteria. With regards to QoL, Namibian and South African patients in this study appeared to have comparable QoL on most domains. However, Namibian patients appeared to fare better on the psychological domain. Psychological distress, anxiety and depression correlated negatively with all facets of QoL.

Results suggest overall high self-efficacy for coping with cancer for the entire study sample, and the Namibian group obtaining significantly higher scores. Self-efficacy correlated negatively with psychological morbidity and positively with QoL for both groups of patients. Correlations with psychological morbidity were stronger for South Africa, and comparable for QoL. Namibian and South African patients reported comparable and probably high levels of hopelessness/helplessness responses to a diagnosis of cancer. Fighting spirit correlated negatively with psychological morbidity for both groups, however the magnitude of the correlations were statistically different. Helplessness/hopelessness correlated positively with psychological morbidity. Anxious preoccupation, fatalism and avoidance responses yielded mixed and conflicting results for this study. QoL and self-efficacy correlated positively with a fighting spirit response.

This study highlights the presence of psychological morbidity among cancer patients in southern Africa, and supports international research. It further highlights relationships between psychological distress, QoL, self-efficacy for coping and adjustment to cancer. The results could have implications with regard to clinical practice within Namibian and South African oncology settings. However, psychological interventions must take into account geo-socio-cultural differences of cancer patients in the various African oncology settings. Further research in African psycho-oncology research is recommended.

Keyword: cancer, oncology, psycho-oncology, psychological distress, quality of life, coping, self-efficacy, adjustment, Namibia, South Africa

Samevatting

Psigo-onkologie het tydens die middel 1970's as 'n formele dissipline na vore getree. Sedertdien het dit baie vordering gemaak wat navorsing en die kliniese praktyk betref, veral in ontwikkelde lande. Psigo-onkologiese navorsing in ontwikkelende lande, insluitend Afrika, is egter nog in sy kinderskoene. Kanker word beskou as 'n siekte van die Westerse wêreld. Dit is ongeag die beraming dat die insidensie van kanker in ontwikkelende lande teen 2020 dié van ontwikkelde lande sal oortref. Gegewe hierdie realiteit en die hoë kankermortaliteitsyfer in Afrika, is die ontwikkeling en progressie van psigo-onkologie op hierdie kontinent noodsaaklik om 'n basis vir navorsing en kliniese praktyk te bied. Teen die agtergrond het hierdie verkennende en vergelykende studie ten doel om psigososiale aspekte van kankerpasiënte in twee suider-Afrikalande te ondersoek.

Die studie het vyf hoofdoelwitte. Eerstens, om 'n oorsig te gee van psigo- onkologiese navorsing in Afrika, insluitend 'n kort historiese perspektief van internasionale psigo-onkologie. Tweedens, die studie ondersoek die aanwesigheid van psigologiese morbiditeit in Oshiwambo-sprekende Namibiese en Sesotho-sprekende Suid-Afrikaanse kankerpasiënte. Daarby is die gebruik van 'n enkel-item visuele analoog siftingsinstrument vir psigiese ontsteltenis ondersoek. Derdens ondersoek die studie die lewenskwaliteit (LK) van die kankerpasiënte in die twee groepe. Die verband tussen LK en psigiese ontsteltenis is ook ondersoek. Vierdens ondersoek die studie die belewing van selftoereikendheid om kanker te hanteer. Vyfdens is aanpassing by kanker nagevors. Omdat dit 'n vergelykende studie is, is Oshiwambo-sprekende Namibiese en Sesotho-sprekende Suid-Afrikaanse pasiënte vergelyk ten opsigte van sielkundige morbiditeit, LK, selftoereikendheid om kanker te hanteer en aanpassing by kanker. Die Distress Thermometer, die Hospital Anxiety and Depression Scale (HADS), 'n 26-item Lewenskwaliteit-instrument (WHOQOL-Bref), die Cancer Behavior Inventory (CBI), asook die Mental Adjustment to Cancer (MAC) is gebruik. Die steekproef het bestaan uit 103 Namibiese en 126 Suid-Afrikaanse pasiënte met 'n diagnose van bors-of servikale kanker wat histologies bevestig is.

Die resultate dui daarop dat DT-afsnypunt van 3 'n ideale norm vir albei groepe is. Met hierdie afsnypunt voldoen ongeveer die helfte van die pasiënte in albei lande aan die gevallekriteria vir psigiese ontsteltenis, terwyl een-derde as psigies ontsteld op die HADS identifiseer is. Ongeveer 30% Suid-Afrikaanse en 20% Namibiese pasiënte het aan die gevallekriteria van depressie voldoen. Wat die LK betref, het Suid-Afrikaans en Namibiese pasiënte in die meeste domeine soortgelyke tellings behaal. Namibiese pasiënte het egter beter op die psigologiese domein presteer. Psigiese ontsteltenis, angs en depressie het negatief met alle aspekte van die LK gekorreleer.

Die resultate dui daarop dat die totale steekproef 'n algemene hoë selftoereikendheid openbaar om kanker te hanteer, met die Namibiese groep wat beduidende hoer tellings behaal. Selftoereikendheid het negatief gekorreleer met psigologiese morbiditeit en positief met LK wat albei groepe pasiënte betref. Korrelasies vir psigologiese morbiditeit was sterker vir die Suid-Afrikaners en soortgelyk vir die LK. Namibiese en Suid-Afrikaanse pasiënte het soortgelyke en waarskynlik hoë vlakke van moedeloosheid/hulpeloosheid rakende 'n diagnose vir kanker getoon. 'n Veggees korreleer negatief met psigologiese morbiditeit vir albei groepe, hoewel die impak van die korrelasies statisties verskil het. Hulpeloosheid/moedeloosheid het positief met psigologiese morbiditeit. Angstige preokkupasie, fatalisme en vermydingresponse het gemengde resultate aan die lig gebring. LK en selftoereikendheid het positief met 'n veggees-respons korreleer.

Hierdie studie beklemtoon die aanwesigheid van psigologiese morbiditeit by kankerpasiënte in suidelike Afrika en sluit by internasionale navorsing aan. Dit onderstreep ook korrelasies tussen psigiese ontsteltenis, LK, selftoereikenheid om kanker te hanteer en daarby aan te pas. Die resultate kan implikasies vir die kliniese praktyk in die Namibiese en Suid-Afrikaanse onkologiese opset inhou. Sielkundige intervensies moet egter geo-sosio-kulturele verskille by kanker pasiënte in die verskillende onkologie-opsette in Afrika in ag neem. Verdere psigo-onkologiese navorsing in Afrika word aanbeveel.

Sleutelwoorde: kanker, onkologie, psigo-onkologie, psigiese ontsteltenis, lewenskwaliteit, hantering, selftoereikendheid, aanpassing, Namibië, Suid-Afrika

ARTICLE 1

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ABSTRACT

The emergence of psycho-oncology, as a formal discipline, spans a period of approximately three decades. Much progress has been made in both research and clinical practice, particularly in developed countries. However, there is still a scarcity of psycho-oncological research in developing countries, including Africa. The high prevalence, incidence and mortality rates of cancer in Africa necessitate the development and progression of psycho-oncology on the continent. Hence, this paper gives an overview of psycho-oncology in Africa. More specifically, it outlines some research findings pertaining to psychosocial effects of cancer, factors contributing to delays in seeking medical intervention, knowledge of and screening for cancer, and psychosocial intervention. Recommendations for future research and clinical practice in psycho-oncology within the African context are given.

Key words: cancer, oncology, psycho-oncology, Africa

INTRODUCTION

The field of psycho-oncology is a relatively new one. However, it has grown much in the last few decades of its existence. Although primarily pioneered in the United States, the psychological needs of cancer patients have become a focus of many researchers, practitioners, educators, and cancer advocacy groups all over the world. With an increase in diagnosis of cancer on the African continent, as is the case with other developing nations, psycho-oncology has become an important area in many African nations. This paper aims at giving an overview of psycho-oncology within the African context. To put this into perspective, the history of psycho-oncology and international psycho-oncology will first be delineated. An overview of some research in psycho-oncology in Africa will be outlined, and recommendations for further research and clinical practice will be given.

HISTORICAL PERSPECTIVE AND THE EMERGENCE OF PSYCHO-ONCOLOGY

Psycho-oncology (also called psychosocial oncology or behavioural oncology) is the scientific study of persons who develop cancer (Dolbeault et al., 1999; Greer, 1994).

More specifically, as one of the sub-specialties of oncology, it is concerned with the biopsychosocial dimensions of cancer. Psycho-oncology addresses the emotional/psychological reactions of patients, families and staff to cancer and its treatment (psychosocial perspective) at all stages of the disease, as well as the psychological, social and behavioural factors that influence the risk of cancer and survival (psychobiological perspective) (Dolbeault et al., 1999; Holland, 1998). The most important role of psycho-oncology is the alleviation of emotional distress suffered by cancer patients (Greer, 1994).

There are three broad primary areas of psycho-oncology research in clinical studies, namely, (a) the psychosocial effects of cancer and its treatment on patients and their families, (b) the development and evaluation of psychosocial intervention therapies to reduce cancer-related psychiatric morbidity and to increase quality of life and perhaps duration of survival, and (c) the role of stressful events, depression and personality characteristics in the etiology and promotion of cancer. Other areas of major interest in the field include ethics, prevention and community support (Greer, 1994).

Until about the 1970s, the outcomes of cancer were primarily measured in terms of cure, survival and recurrence-free survival. It is only in more recent years that the "human side of cancer" started to gain recognition, leading the path to the formal establishment and history of psycho-oncology in the mid-1970s (Holland, 2001, 2002). Holland (1998, 2001, 2002) and Dolbeault et al. (1999) point out prominent attitudinal and conceptual barriers which, prior to the 1970s, played a major role in the delayed development of psycho-oncology. These include, but are not limited to, aspects such as stigma, shame and guilt associated with having cancer, the notion that cancer is equal to a death sentence, limited funds, small numbers of psychosocial clinicians and investigators, and a lack of valid instruments to quantify data.

The landmark works by Jimmie Holland (1998, 2001, 2002, 2004) on the history of psycho-oncology, state that in the 1800s and preceding centuries, a cancer diagnosis was comparable to a death sentence as there were no known causes or treatment. The

diagnosis was withheld from the patient (although the family was often informed) as it was considered cruel and inhumane to reveal the diagnosis to the patient. It was believed that the patient would lose all hope. It was also believed that the patient would cope better not knowing that he/she had cancer. Therefore, not telling the cancer patient that he/she had cancer was considered an "acceptable white lie". Furthermore, the family would not inform others about a cancer diagnosis owing to the stigma attached to the patient and his/her family. It was also believed that cancer was contagious, and shame and guilt were prominent emotions.

With the improvement of surgery and the development of anesthetics in the early 20th century, it became possible (although not common) to cure cancer if the tumour was found early. This led to public campaigns and educational programs to encourage people to seek consultations for suspicious symptoms. Radiation therapy was developed during the first quarter of the 20th century (although used mainly as palliation), and it was feared as much as surgery. In the 1950s the first cure for cancer with chemotherapy was recorded, and chemotherapy became the third treatment modality for cancer. By the 1960s, there was reduced pessimism about cancer and a stimulated interest in the long-term effects of cancer treatment. The movement for the rights of women, consumers and finally patients (in the 1960s and 1970s), played a major role as patients started to recognize their rights to know their diagnosis, prognosis and treatment options, including informed consent.

The stigma attached to mental disorders and its treatment further delayed the development of psychological care of medically ill patients, including cancer patients. Mental illnesses were feared, and mentally ill patients were blamed and ostracized. Mental health institutions and hospitals were located at a distance from general hospitals, and entry of psychiatrists into medical wards was met with hostility or indifference (Holland, 2002). There was also stigma attached to seeking psychiatric or psychological care for emotional problems (Kash et al., 2005). Psycho-oncology, as a sub-field of oncology, began only in the mid-1970s after prior barriers to revealing the diagnosis fell away and it became possible to talk to patients about their diagnosis and its implications

for their lives. Consultation-liaison psychiatrists were the first wave of investigators in the field followed by those in the behavioural medicine movement. Health psychologists studied and contributed models of coping. Other contributions came from nursing research and social workers. In recent years contributions by clergy and pastoral counselors have been given recognition (Holland, 2002; Kash et al., 2005). Today multi-disciplinary teams are involved in both the clinical and research aspects of caring for cancer patients (Kash et al., 2005; Nehl et al., 2003). Kash et al. (2005) credit Holland, who began the first psychiatric service at Memorial Sloan-Kettering Cancer Center in New York City to help cancer patients cope with distress and improve the quality of life of cancer survivors, as the pioneer of psycho-oncology. However, research on the psychosocial effects of cancer commenced at the same institution in the 1950s under the leadership of Arthur M. Sutherland (Holland, 2002; 2004).

THE FIELD OF PSYCHO-ONCOLOGY: AN INTERNATIONAL PERSPECTIVE

Since its establishment, much progress has been made in psycho-oncology. Among these milestones are the development of measuring instruments to assess the prevalence of psychiatric disorders among cancer patients, the investigation and identification of psychosocial aspects of cancer, the use of behavioural intervention models, the publication of the first psycho-oncology textbook in 1989 (*Handbook of Psycho-Oncology*), the emphasis on quality of life, and investigation into issues related to palliative care. In more recent years, attention has been given to existential and spiritual issues pertaining to living with a life-threatening illness, the need for multidisciplinary interventions, the establishment of psycho-oncology clinics or units, the integration of literature on stress, appraisal and meaning-making, and genetic counseling. Today, psycho-oncology is recognized as a multidisciplinary research and clinical field, including a myriad of professionals and non-professionals (oncologists, nurses, medical practitioners, psychologists, psychiatrists, social workers, clergy, ethicists, patient groups and advocacy organizations) all involved in the comprehensive care of cancer patients from diagnosis to end-of-life (Holland, 2004; Kash et al., 2005).

Although the United States and Sweden have historically made the earliest efforts in the field, countries such as the United Kingdom and Denmark began work in the 1950s. In many countries, psychosocial oncology began to be implemented in the 1980s or later and in the 1990s countries such as Turkey, Portugal, Spain and India commenced work in the area (Holland & Marchini, 1998; Mehnert & Koch, 2005). Today, there exist many national psycho-oncology societies or working groups in many countries and regions. National societies established in the 1980s include the French Psycho-Oncology Society, the British Psychological Society, the Italian Society of Psycho-Oncology, the Belgian Society for Psychosocial Oncology, the German Psycho-Oncology Society, the Polish Psycho-Oncology Society, the Hellenic Society of Psychosocial Oncology, the Portuguese Society of Psycho-Oncology, the Hungarian Psycho-Oncology Group, the Canadian Association of Psychosocial Oncology, the American Psychosocial Oncology Society, the Japanese Psycho-Oncology Society, the Indian Psycho-Oncology Society, the Israeli Psycho-Oncology Society, and the Mexican Society of Psycho-Oncology. Others, such as the Irish Psycho-Oncology Group, were established in more recent years (Steggles & McKiernan, 2007). These national or regional societies and working groups are affiliated to the International Psycho-Oncology Society (IPOS).

IPOS, established in 1984, serves as the integrating body to link the societies internationally (Holland, 2004; Holland & Marchini, 1998). It was created to promote international multidisciplinary communication about clinical, educational and research issues in psycho-oncology. Currently, IPOS has over 500 members (representing a range of disciplines including, but not limited to, oncologists, physicians, psychiatrist, social workers, nurses, psychologists, rehabilitation specialists, epidemiologists, social scientists, educators, and students) from more than 50 countries from all over the world (www.ipos-society.org/members/directory.aspx). Since its first World Congress in 1992 in Beaune (France), IPOS holds regular congresses.

In conjunction with the European School of Oncology (ESO), IPOS now offers a multi-lingual (English, French, German, Hungarian, Italian, Spanish, Chinese, Japanese and Portuguese) core curriculum in psycho-oncology in the form of online lectures. *Psycho-*

Oncology, established in 1998 serves as the official journal of IPOS, the American Psychosocial Oncology Society (APOS) and the British Psycho-Oncology Society (BPOS) (Holland, 2004). Additionally, a number of institutions now offer training programs in psycho-oncology (see www.psycho-oncology.net/).

Through the 1990s a research model (see Figure 1) has been developed and has guided psycho-oncology work (Dolbeault et al., 1999; Greer, 1994; Holland, 2001, 2002). Cancer (and its treatment) is considered the independent variable, whereas dimensions of quality of life and survival are the outcome variables. The mediating variables (such as personal, medical, social and stressors) and psychosocial interventions to affect them form the core of psycho-oncology research. A large body of research on various aspects of psycho-oncology now exists internationally and forms the knowledge base of the field of psycho-oncology.

For example, a large body of evidence now exists with regard to the psychosocial effects of cancer. These include anxiety, depression, poor body image, guilt, shame, symptoms of post-traumatic stress, sexual dysfunctions and conditioned nausea (Amir & Ramati, 2002; Avis et al., 2004; Nosarti et al., 2002; Turner et al., 2005), which negatively impact the quality of life of cancer patients (Herzog & Wright, 2007). Evidence also exists that psychosocial care and interventions reduce psychological distress and improve quality of life of cancer patients (Cunningham & Tocco, 1989; Edelman et al., 1999; Fawzy et al., 1990; Goodwin et al., 2001; Greer, 2002; Greer et al., 1992; Jacobsen, 2009; Meyer & Mark, 1995; Spiegel et al., 1981; Telch & Telch, 1986). Much progress has also been made in the development and validation of a variety of quantitative research instruments and tools to assess aspects such as pain, anxiety, delirium, fatigue, depression, multidimensional quality of life, coping, adjustment and spiritual beliefs (Holland, 1998; www.ipos-society.org). Although there is no consensus regarding "gold standard" instruments in each area, some instruments have emerged as commonly used and have been validated and translated into many languages. Additionally there are international efforts to encourage researchers to utilize a "core" of common instruments, which will make comparisons across studies possible (Holland, 2004).

Although well-established over the last three decades, psycho-oncology is not without challenges. There exist considerable variations in research output, and the establishment and provision of psychosocial services internationally (Mehnert & Koch, 2005; Steggles & McKiernan, 2007). According to Holland (2004), there remains a large gap between the existence of psychosocial care data on one hand, and the actual worldwide availability and utilization of psychosocial services on the other. Researchers in the field concur that one of the most immediate and important tasks of psycho-oncology is to narrow and bridge the gap between current knowledge in the field and actual clinical practice (Greer, 1994; Holland, 2004).

An international comparison study by Mehnert and Koch (2005) found that there appears to be consensus among experts that the central issues in psychosocial oncology include behavioural, psychological, social and ethical aspects of caring for cancer patients. The major goals of psycho-oncology include enhancement of quality of life and improvement of coping strategies in cancer patients and their families, through psychosocial assessment, support and interventions. Despite consensus that psycho-oncology is multi-disciplinary and multi-professional, it was only fully integrated into oncological care in one-third of the countries surveyed. Among the barriers indicated are financial shortages (particularly for research and education), lack of trained personnel, poor understanding and acceptance of psycho-oncology, low socioeconomic conditions, poor provision of medical care and facilities, difficulties in multi-disciplinary cooperation and lack of specific psychosocial guidelines for cancer patients care. There were, however, variations from country to country with regard to these barriers, with nations that have a longer tradition of psycho-oncology and more developed countries faring better. In support of prior research, experts in the study by Mehnert and Koch (2005) judged that approximately 30% of cancer patients (ranging from 10-50%) were in need of psychosocial treatment. The overall unsatisfactory implementation of psychosocial care is, however, in contrast to a large body of research evidence regarding the benefits of psychosocial interventions.

According to Jacobsen (2009), many psychosocial intervention strategies that have been shown to be effective have little potential for dissemination owing to time, expense, and resources required for their implementation. The author hence recommends the design of new interventions with dissemination in mind or modification of existing interventions to make them easier and more practical to implement. He further recommends collaboration between IPOS members to translate existing intervention materials into multiple languages and to make the materials available to one another via the society's website.

Given the strides achieved in psycho-oncology and existing barriers, experts in the area make the following recommendations for improvement in the discipline: enhanced training for oncology personnel about psychosocial problems of cancer patients; educating the public and healthcare professionals about the aims, methods, interventions and clinical evidence of psychosocial oncology; promotion of interdisciplinary cooperation; enhancement of multi-center, cross-cultural and international cooperation and research; closer collaboration between research and clinical practice for the transfer of scientific evidence into practice; and including the cost factor and feasibility of interventions in future studies (Greer, 1994; Holland, 2002, 2004; Holland & Marchini, 1998; Jacobsen, 2009; Keller et al., 2003; Mehnert & Koch, 2005; Steggles & McKiernan, 2007). The establishment of guidelines and standards of psychosocial care of cancer patients, such as those of the National Comprehensive Cancer Network (NCCN), is another important area in psycho-oncology that requires further investigation.

THE FIELD OF PSYCHO-ONCOLOGY: AN AFRICAN PERSPECTIVE

According to the World Health Organization (WHO, 2002), there are over 20 million people world-wide living with cancer, of whom the majority live in developing countries. By the year 2020, it is estimated that approximately 30 million people will be living with cancer. It is estimated that the number of new cases of cancer per year will increase from 10 million in the year 2000 to over 15 million by the year 2020 (WHO, 2002). Of these new cases, approximately 60% will occur in less developed countries (Ferlay et al., 2002;

WHO, 2002). Similarly, mortality from cancer is projected to increase from 6.2 million in the year 2000 to 9.8 million in the year 2020. It is projected that over 60% of cancer deaths will occur in developing countries (WHO, 2002). Although primarily regarded as a disease of developed nations, epidemiological evidence points to the surfacing of comparable trends in developing countries (Ferlay et al., 2002; Garcia et al., 2007; Parkin, 2001; Parkin et al., 2005; WHO, 2002). These statistics necessitate the need for psycho-oncology, not only in the developed countries, but also on the African continent.

Recognizing the prevalence of cancer on the African continent and the psychosocial aspects of cancer, the Pan-African Psycho-Oncology Society (PAPOS) and African Organization for Research and Training in Cancer (AORTIC) were established in recent years (Holland, 2004; Holland & Marchini, 1998; Passik, 2000). PAPOS held its biannual conferences in South Africa (2004), Uganda (2000), South Africa (1998), Kenya (1996), Zimbabwe (1994) and Namibia (1992). Passik (2000) noted that the impact of HIV/AIDS on the continent is an aspect that was evident at the PAPOS conference. This possibly implies that with the current challenges of HIV/AIDS, psycho-oncology in Africa can not ignore this aspect.

In 1992 the Cape Psycho-Oncology Group held its first "Cancer in Africa" meeting from which PAPOS emerged at a conference in Windhoek (Namibia) in the same year. The aim of PAPOS is to bring together various disciplines with the goal of providing knowledge and expertise in the support and management of cancer patients, as well as to address aspects of social dynamics and issues experienced by families and professionals who are involved in the care of cancer patients. PAPOS emphasizes a multi-disciplinary approach and concerted efforts to continually identify and support patient needs at all phases of cancer management (Du Toit, 2004). It is unfortunate that PAPOS activities seem to have ceased around 2004.

Another organization that has played an active role on the African continent with regard to cancer is AORTIC, which was established in 1983 in the Republic of Togo. A major role of AORTIC is to promote research and training, as well as the provision of accurate

and relevant information on the prevention, early detection and diagnosis, treatment and palliative care in oncology. The organization brings together experts from various African and international communities to achieve its aims (http:/africa.aortic.org). Its sixth international conference in Cape Town in 2007 brought together approximately 400 delegates from about 50 countries, including oncologists, nurses, palliative care workers, psychologists, and those involved in cancer advocacy, cancer control and cancer registry. Although many of the presentations were largely medical in nature, a number of psychosocial issues were also highlighted, especially palliative care. Similarly, the 2009 AORTIC conference in Dar es Salaam, brought together about 700 African and international delegates.

Both PAPOS and AORTIC have had active ties with IPOS (Holland & Johansen, 2005), and efforts are underway to revive both PAPOS and AORTIC's Psychosocial/Quality of Life Committee (J. C. Holland, personal communication, August 18, 2008), following the AORTIC conference in Cape Town in 2007.

Whereas psycho-oncology has been well-established in other parts of the world, especially the more developed countries, the contribution in Africa has been patchy although slow and steady (Du Toit, 2004). For example, a liaison psychiatry service was started at Cape Town's Groote Schuur hospital's Department of Hematology in the 1980s (Du Toit, 2004), however research on the continent appears to have emerged only from the mid-1990s.

Research in psycho-oncology in Africa primarily emerged in the last decade. Given the number of people living with cancer and the projected increase in cancer patients and survivors, there is a dire need to research psychosocial factors in both the etiology and management of cancer (Schlebusch, 1998). Following is a synopsis of some of the research areas and findings concerning the African continent:

Psychosocial effects on patients

Several researchers have documented the psychosocial effects of cancer. For example, Pillay (2001) in South Africa found that cancer patients experienced more elevated levels of depression, anxiety and hopelessness compared to a control group of physically healthy individuals. Similarly, a large-scale study by Berard and colleagues (Berard, Boermeester & Viljoen, 1998; Boermeester & Berard, 1998), found a 14% prevalence of depression and 35% of anxiety. These authors, however, suggest that these prevalence rates are probably an under-estimation. Asuzu et al. (2008) similarly found high prevalence rates of moderate to high anxiety (20-45%) and depression among mixed-site cancer patients in Nigeria. A recent Namibian study by Shino and Louw (in press) using the Hospital Anxiety and Depression Scale found a prevalence of 28% distress, 32% anxiety and 18% depression among breast and cervical cancer patients. These prevalence rates are consistent with international prevalence ranging between 15-50% (Mehnert & Koch, 2007, Roth et al., 1998, Trask et al., 2002). It is worth noting that in Pillay's (2001) study, none of the cancer patients had been referred for psychological or psychiatric management. This is also consistent with other research that many cancer patients with psychosocial problems are not appropriately referred for psychosocial intervention, despite the presence of symptoms (Carlson & Bultz, 2003).

A cross-cultural South African study, comparing black and white women with breast cancer, found that both groups experienced clinically significant levels of stress (Lo Castro & Schlebusch, 2006). However, another South African study (Schlebusch & Van Oers, 1999) found higher levels of somatization, depression and body dysphoria among black breast cancer patients in comparison to their white counterparts, although both groups of women experienced similar levels of elevated anxiety. Schlebusch and Van Oers suggest that higher levels of psychological distress among black female cancer patients might be because of traditional cultural factors which possibly predispose them to suppress emotions. A lack of knowledge and the traditional lack of psycho-oncological services for this group could also play a role.

A Nigerian study by Ohaeri et al. (1998) found psychosocial concerns and psychiatric symptoms among women with breast and cervical cancer. The most commonly reported psychosocial concerns included feelings of depression, thoughts of death, sleeping difficulties, worries about body odour (due to late presentation at medical facilities), terrifying dreams and worries about the disease being life-long. Sexual dysfunctions (including abstinence from sexual intercourse), as well as body image problems were reported among breast and cervical cancer patients in Sudan (Abasher, 2007), Egypt (El-Shamy, 2008) and South Africa (Motsetse, 2004). Similar psychological difficulties have been noted among cancer patients in Uganda (Kiyange, 2007).

These few studies highlight the presence of some of the psychosocial effects of cancer among African cancer patients. These effects have been noted elsewhere in the world. Although African research in this respect is relatively limited, it is probable that psychosocial effects of cancer might be similar across cultures (Ohaeri et al, 1998).

Delays in seeking medical intervention

As mentioned earlier, cancer mortality in Africa and other less developed countries is high. This is owing to a variety of factors such as paucity of resources and advanced disease. For example, a Cameroonian study by Ekortarl et al. (2007) found that factors such as inadequate financial resources, lack of appropriate health care facilities and medical personnel, poor information about cancer and its treatment, cultural beliefs and fears about cancer contribute to delays in seeking medical attention. The belief that cancer is equal to a death sentence, as well as the social stigma attached to having cancer might be prominent in some communities. These factors often lead to delays in seeking medical attention, leading to cancer patients presenting for medical intervention only when the disease is far advanced, and when palliative care and pain control might be the only available intervention.

It has also been noted that cultural and traditional beliefs as well as political factors play a role in aspects such as delay in seeking medical intervention and non-compliance. For example, Benjamin and Akiror's (2008) South African study found that there exists an

African traditional treatment which often takes years before the patient presents at hospital for treatment. The same study also found that patients perceived western medicine (in contrast to traditional medicine) as threatening, painful, cold, authoritarian, non-holistic and unsympathetic. These authors thus suggest the potential inclusion of traditional healers in treatment teams.

Knowledge and screening for cancer

Knowledge about cancer and screening are vital aspects of cancer control. It appears that there are disparities about these aspects for a number of reasons, such as education, socio-economic status, and age. Krombein and De Velliers (2006) found that women in a South African township had good knowledge about breast cancer and breast cancer screening. About 62% have had a clinical breast examination, 11% mammography and 65% breast self-examination before in their lives. However, only 24% practiced breast self-examination on a monthly basis. A major barrier to screening was identified as the fear of being diagnosed with cancer. In contrast to the South African study, knowledge of cancer and its treatment in a rural Nigerian setting was poor (Oluwatosin & Oladepo, 2006). In this study over 70% of the respondents did not know any early warning signs of cancer, 91% did not know anything about cancer treatment and nearly 90% had never examined their breasts for early detection of cancer.

Psychosocial intervention

It is well-recognized that the management of psychosocial effects and distress associated with cancer requires a multi-disciplinary team intervention approach at all stages of the disease continuum. However, within the African context few such oncology clinics or public hospitals exist. In South Africa a number of private oncology outpatient clinics or units with multi-disciplinary teams exist. Unfortunately busy private oncology units often do not make the time for proper and effective multi-disciplinary team interactions in order to ensure high standards. Additionally, services by multi-disciplinary teams are often limited and very costly, and thus not really available to patients and families. At some private oncology units, oncology social workers provide services to patients free of charge (Greeff & Gouws, 2003).

Within the public sector, which is utilized by the majority of patients, such services have rarely been noted. For example, at the National District Hospital in Bloemfontein (South Africa) limited psycho-social services are provided by social workers at no additional cost. Greeff and Gouws (2003), however, note that multi-disciplinary teams in oncology settings in South Africa are overwhelmed with the needs of patients and are not able to meet even the basic needs owing to lack of personnel resources and other urgently needed treatment resources. Within the Southern African region, a number of organizations such as the Cancer Associations of Namibia, the Cancer Association of South African, and Reach to Recovery provide a number of psychosocial services to patients.

In Sudan, efforts have been underway to launch the first psychosocial oncology unit within the country (Omran, 2008). Physicians, nurses, social workers, psychologists, radiotherapists and spiritual therapists underwent the psychosocial training program developed by the Omran (2008), and the program has been highly welcomed by health care providers, cancer patients and community leaders. Similar efforts have been underway to provide psychosocial and palliative care to patients with advanced cancer in Yaoundé (Cameroon) (Ekortarl et al., 2008) and in Nigeria (Asuzu et al., 2008). A few studies reported on models of psychosocial intervention that reduce distress and anxiety (Campbell-Gillies, 2003, 2005; Linde, 2000) and enhance treatment compliance (Benjamin & Smith, 2008) within Africa settings.

CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE PSYCHO-ONCOLOGY RESEARCH AND CLINICAL PRACTICE IN AFRICA

Psycho-oncology has grown into a formal discipline over the last three decades. Although much has been achieved in the field in the pioneering countries and internationally, psycho-oncology in Africa has been slow. Equally, there has not been as much research from African countries. Over the last few years, however, some research has emerged, adding to scholarship in international psycho-oncology and on the

continent. From current publications, it appears that African cancer patients suffer from similar or some of the psychosocial effects that have been noted in other countries.

One of the major aims of psycho-oncology is the enhancement of quality of life. Within many African contexts, patients delay seeking medical care resulting in patients presenting with advanced cancer. This delay in seeking medical care is influenced by a number of noted factors such as fear of cancer. The belief that cancer equals a death sentence still persists in some communities. Similarly lack of knowledge about cancer and its treatments and screening for early symptoms of cancer presents and remains a challenge. Given the high prevalence of HIV/AIDS and high mortality rates due to cancer on the continent, palliative care is another important challenge for psycho-oncology in Africa.

For the total and comprehensive care of cancer patients, multi-disciplinary teams are needed. Few African countries currently offer such services to cancer patients. There are, however, a few centers that offer psychosocial services. From the AORTIC conference and similar African meetings, it is becoming evident that the need for total care of cancer patients is becoming more recognized as an important aspect of cancer care.

A major challenge that plays a role in the delayed growth and advancement of psycho-oncology in Africa is the question of lack of material and personnel resources. Many cancer centers are burdened with high numbers of patients combined with a limited number of services providers, making the comprehensive assessment and management of psychological distress difficult if not an impossible task. In some contexts where even resources for medical intervention are not readily available, the psychosocial aspects could be overlooked. Similarly, lack of resources for research remains another challenge.

Despite these challenges and given the increased recognition of the benefits of comprehensive cancer care, there is potential for the further growth of psycho-oncology within the African context as has been demonstrated in some of the countries. This

requires dedicated individuals, teams of professionals, clinicians, educators and researchers, with a passion and interest in psycho-oncology. The need for training professionals in the area is pertinent, as well as the education of oncology staff and the public regarding issues in psycho-oncology.

Given the scarcity of research in psycho-oncology in Africa, it is important to highlight areas for further and future research. High quality research provides a scientific evidence base of psychosocial issues in cancer within the African context. Additionally, this is an essential aspect as it plays a role in the advocacy for provisions of services and resources from government agencies, non-governmental organizations (NGOs) and the private sector. Further and future psycho-oncology research in Africa needs to take cognizance of the diversity of African people within the different countries. These include aspects such as language, culture, traditions, belief systems, ways of communication, and systems of health care delivery, among other factors. Similarly, aspects such as socio-political and socio-economic factors need to be taken into account.

The aspect regarding the psychological effects of cancer at all stages of the disease continuum needs to be highlighted and researched further. This includes the psychosocial consequences, not only on the cancer patients and their families, but also on health-care providers within oncology settings. Many robust research instruments presently exist within the field of psycho-oncology to assess various psychosocial aspects. It is probable that there might not be a dire need to develop new instruments, but rather to standardize some of the existing ones to be appropriate within the context in which they are to be used. Additionally, qualitative research is essential as it has the benefit of providing more detailed information about the cancer experience of African patients, which can otherwise not be assessed through quantitative research instruments.

Although extensive international literature exists on the effectiveness of psychosocial intervention in cancer, some of these intervention programs (as with research instruments) could be modified to become culturally-appropriate, implemented and evaluated. However, with very few or no trained professionals in some contexts,

implementation of some types of psychosocial interventions is a challenging task. Within contexts where psychosocial or psycho-oncology units exist, appropriate guidelines and standards of care need to be established and evaluated.

In 2004, Holland recommended that a priority for African countries was to focus attention on cancer prevention and education, particularly on cervical cancer which is often detected at an advanced stage. Potential research questions in this aspect would be: What are the barriers (psychosocial, cultural, religious/spiritual) to screening for cancer? How can these barriers to screening be reduced? What interventions, methods or programs can be implemented to enhance screening behaviours? What methods or combinations thereof are most useful in providing information and education about cancer?

Given the high prevalence of patients with advanced cancer, research in palliative care, pain control and end-of-life issues is also called for. These would involve an investigation into aspects such as coping with advanced disease, psychiatric morbidity in advanced cancer, and psycho-spiritual aspects of death and dying. Similarly, aspects such as quality of life, coping and adjustment, communication, and childhood and adolescent psycho-oncology need to be researched. Furthermore, collaborative research among African countries is encouraged. This will enable scholars to share information and provides opportunities to compare research outcomes from different African countries.

The acquisition of knowledge through research is important. However, the end-point of such research should be to find appropriate and practical ways through which psychosocial care can be provided and be made available to people living with cancer. This remains the larger challenge for African psycho-oncologists in various settings. As Boermeester (1996, p. 203) puts it, "an ideal system of care would not be an academically derived and universally applicable structure, but a dynamic, patient-driven and problem-focused system of care".

To this effect, one can ask the question "What is an ideal system of psychosocial care for Africa?" The answer to this question is beyond the scope of this paper. Given the disparities and differences in economic resources, cultures, traditions and a lack of trained professionals, it is evident that there can not be one ideal system of psychosocial care for Africa. Rather, the feasibility of various models and systems of interventions should be explored for various contexts. For example, a country or region of a country with urban and rural communities could explore the use of two (or more) different systems of psychosocial intervention and care.

Another related question would be "Who are or should be the role players in the psychosocial care of cancer patients in Africa?" In high resource settings, where multi-disciplinary teams are available within oncology settings, the task of intervention could be carried out through such teams. Alternatively, where multi-disciplinary teams are not available within oncology settings, systems of referral to outside sources should be explored. For example, the oncologist and/or nurse could evaluate patients for possible distress and source/s of the distress. Depending on the nature and source of distress, patients could be referred to a psychologist, psychiatrist, social worker, or chaplain for intervention. It is, however, imperative that a system of feedback be developed.

In low resource settings, where there are no trained professionals, the use of community resources should be considered. Similarly, intervention could be at the grass-roots. For example, in some societies, traditional healers, religious/spiritual leaders, community health educators, nurses, lay counselors, and community volunteers already play the role of counselors within the community. Hence, these community members could be trained in basic counseling and psychosocial aspects of cancer to provide counseling and emotional support to cancer patients and their families. Community members and grass-root intervention have been used, with varying degrees of success, in many African countries within the context of HIV/AIDS. Hence, this remains a possibility for exploration in the case of cancer.

Psycho-oncology hinges on the principle of enhancement of the quality of life of cancer patients, and to nurture the "human side" of cancer. It is, therefore, imperative that African scholars, health care practitioners, and educators, among others, explore the issues surrounding the psychosocial aspects of cancer within our various communities. Similarly, it is the role and obligation of the various role players to provide the necessary intervention and psychosocial support and care to cancer patients, with whatever resources are available to us.

"To fully realize the potential for the field of psycho-oncology to positively influence
the lives of people with cancer, we must focus on ways to ensure that the care provided
on the 'front lines' is buttered by research evidence demonstrating its value"
Jacobsen (2009, p. 12)

Figure 1: Model of research in psycho-oncology

VARIABLES

| INDEPENDENT | MEDIATING | OUTCOME |

Personal
   sociodemographic
   personality and coping style
   prior adjustment
   spiritual/religious beliefs

Medical
   illness-related behaviours
     (surveillance, compliance)
   doctor-patient relationship
   treatment environment
   rehabilitation options

Social (supports)
   family/friends
   community resources
   spiritual/religious community
   cultural affiliation

Life Stresses
   concurrent illnesses
   bereavement
   other

Cancer
   disease and
   treatment effects

Quality of Life
   (functional domains)
   physical
   psychological
   social
   vocational
   sexual

Survival

INTERVENTIONS

Source: Dolbeault, S., Szporn, A. & Holland, J. C. (1999). Psycho-oncology: Where have we been? Where are we going? *European Journal of Cancer, 35(11),* 1554-1558.

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ARTICLE 2

A COMPARISON OF PSYCHOLOGICAL DISTRESS BETWEEN OSHIWAMBO-SPEAKING NAMIBIAN AND SESOTHO-SPEAKING SOUTH AFRICAN WOMEN DIAGNOSED WITH BREAST OR CERVICAL CANCER

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A COMPARISON OF PSYCHOLOGICAL DISTRESS BETWEEN OSHIWAMBO-SPEAKING NAMIBIAN AND SESOTHO-SPEAKING SOUTH AFRICAN WOMEN DIAGNOSED WITH BREAST OR CERVICAL CANCER

ABSTRACT

Although much research has been carried out in developed countries on the psychological effects of cancer, research within the African context is still in the infancy stage. The aim of this research was to investigate and compare Oshiwambo-speaking Namibian and Sesotho-speaking South African women diagnosed with breast or cervical cancer with regard to psychological distress, anxiety and depression. The feasibility of the use of the Distress Thermometer (DT) as a screening tool for distress within these contexts was explored. A socio-demographic questionnaire, the DT and Hospital Anxiety and Depression Scale (HADS) were employed. The sample consisted of 103 Namibian and 126 South African women. Receiver operating characteristic analyses identified a cut-off score of 3 as ideal on the DT. The positive predictive values were 0.42 and 0.55 for the Namibian and South African samples respectively, and the negative predictive values were 0.86. Nearly half of the patients were identified as distressed on the DT, while about a third were identified as distressed on the HADS. Approximately a third scored above the HADS anxiety cut-off. However, fewer Namibians than South African scored above the HADS depression cut-off. Where differences existed between the two groups of cancer patients, in relation to demographic variables, South African cancer patients primarily obtain higher scores on distress, anxiety and depression. Both the DT and HADS could be useful screening instruments in busy and under-staffed oncology settings, and further research within southern African oncology settings is recommended.

Key words: cancer, oncology, distress, Namibia, South Africa

INTRODUCTION

It is estimated that over 12 million new cases of cancer were diagnosed in 2007, of which more than half occur in developing countries. Worldwide, breast and cervical cancer are the leading female-specific cancer, with cervical cancer primarily occurring in less developed countries (Garcia et al., 2007; WHO, 2002). It is reported that sub-Sahara Africa has among the highest incidence of cervical cancer (Parkin et al., 2005). It is further estimated that cervical cancer is the most common type of cancer in southern African women, followed by breast cancer (Garcia et al., 2007).

In Namibia and South Africa, cancers of the breast and cervix are the most common types of cancer among women (Cancer Association of South Africa, 2001; Department of Health, 2001; Namibian Cancer Registry (n.d); National Cancer Registry of South Africa, 2004). According to the Namibian Cancer Registry (n.d.) data for 1995-1998, breast cancer and cervical cancer make up 25% and 22% respectively of all cancers in women with an age-standardized incidence rate (ASR) of 25.4 per 100 000 and 22.2 per 100 000 respectively. The National Cancer Registry of South African (2004) data for 1999 notes that breast cancer is the most common type of cancer among women (ASR: 33.41 per 100 000), followed by cervical cancer (ASR: 28.69 per 100 000). Population differences, however, exist in both countries, with breast cancer being more prominent in Caucasian women and cervical cancer being more common in women of African descent.

Internationally, the psychosocial consequences of breast cancer are well-documented, with those of cervical cancer to a much lesser extent. Effects include psychological distress, anxiety, depression, poor body image, guilt, shame, symptoms of post-traumatic stress and decreased sexual function (Amir & Ramati, 2002; Avis et al., 2004; Nosarti et al., 2002; Turner et al., 2005), which negatively impact the quality of life of cancer patients (Herzog & Wright, 2007).

On the African continent, research regarding the psychosocial effects of cancer is still in its infancy stage, but is gradually and consistently emerging. With the exception of some studies in South Africa (e.g. Berard et al., 1998; Boermeester, 1996; Lo Castro, 2003; Lo Castro & Schlebusch, 2006), the psychosocial effects of cancer and distress associated with a cancer diagnosis in southern Africa, and particularly in Namibia, have not been researched. Similarly, no valid and cost-effective methods to assess and manage psychological distress have been explored (Berard at al., 1998) within the region. Many of the public health-care settings are under-staffed and under-resourced, making the investigation of psychosocial issues and the provision of psycho-oncological services a challenging task.

LITERATURE REVIEW

Psychosocial effects of breast cancer

Among cancer types that primarily affect women, breast cancer is the most studied type and its psychological sequelae are well-documented (Avis et al., 2004; Nosarti et al, 2002; Turner et al., 2005). The breast plays a major role in how women perceive their femininity, attractiveness and sexual functioning, and to a large extent defines "womanhood" (Schlebusch & Mahrt, 1993). Meyerowitz (1980) reports that the impact of breast cancer affects women in three broad areas, namely psychological distress, changes in life patterns, and fears and concerns. Younger women (especially those who are single and without a partner) tend to show more distress associated with loss of attractiveness, decreased sense of femininity and self-esteem compared to older women (Rowland & Massie, 1998). Fear of recurrence (Stewart et al., 2001), premature menopause, loss of fertility, decreased sexual function, dating concerns and dissatisfaction with physical appearance are among the host of effects among younger women diagnosed and treated for breast cancer (Avis et al., 2004). On the other hand, older women diagnosed with breast cancer after the age of 65 years might experience concurrent stressors, including loss of spouse and other physical co-morbidity associated with old age (Mor et al., 1994).

Women might hold the belief that they are responsible for their own illness and hence suffer more distress. Those who might have prior personal associations with breast cancer (such as breast cancer in a grandmother, mother or sister) might experience added distress (Rowland & Massie, 1998).

The treatment for breast cancer carries its own legacy of psychosocial consequences. Following mastectomy, feelings of mutilation, altered body image, decreased sexual attractiveness and sexual function, loss of sense of femininity, diminished self-worth, guilt, depression, hopelessness, shame, and fear of recurrence have been reported (Lewis & Bloom, 1978; Meyerowitz, 1980), with women who underwent lumpectomy and irradiation faring better on these dimensions.

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Psychosocial effects of cervical cancer

Psychosocial effects of cervical cancer are outlined by Ashing-Giwa et al. (2004), Auchincloss & McCartney (1998), De Groot et al. (2005) and Juraskova et al. (2003). Several studies report that women with invasive cervical cancer report higher emotional distress compared to women with other female-specific cancers, such as breast cancer and endometrial cancer (Eisemann & Lalos, 1999; Ohaeri et al., 1998).

Social stigma in gynecological cancers relates to the historically poor diagnosis of the illness and its presence in the site of the female sexual response and reproduction (Auchincloss & McCartney, 1998), therefore leaving women with cervical cancer feeling shame, embarrassment, discomfort, guilt, and suffering in social isolation while at the same time facing challenges related to physical changes, sexual dysfunctions and fertility problems (Ashing-Giwa et al., 2004; Auchincloss & McCartney, 1998; Laganà et al., 2001). This isolation occurs primarily because women feel shame and are embarrassed to disclose their disease (Auchincloss & McCartney, 1998), and this has a potential for negatively impacting treatment-seeking behaviours (Ashing-Giwa et al., 2004).

Factors that contribute to the development of cervical cancer include exposure to sexually transmitted diseases, early and frequent unprotected sexual contacts (with exposure to the human papilomma virus), smoking, substance abuse and immuno-suppression (Auchincloss & McCartney, 1998). While contending with fear, shock, denial, anxiety, depression, anger, shame, negative body image, feeling "incomplete", feeling damaged and worn out, feeling flawed and sexually undesirable, and the perception that they have failed to take proper care of themselves, women with cervical cancer fear being labelled as having been promiscuous owing to the way in which cervical cancer develops (Ashing-Giwa et al., 2004).

According to Andersen (2000), following medical treatment for gynecological cancers, between 30% to 90% of women experience some form of difficulties pertaining to sexuality, depending on the stage and treatment for cancer, hence producing an array of sexual dysfunctions related to the various phases of the sexual response cycle.

The sense of feminine identity, womanhood, body image and self-esteem are often lowered in women following cervical cancer. A study by Juraskova et al. (2003) found that younger women who identified their femininity with their ability to bear children experienced more acute sense of loss and distress following the removal of the uterus. This loss was associated with the potential negative impact on their current relationship or ability to form subsequent intimate relationships. Additionally, sense of loss and grief was associated with feelings of anger. However, for post-menopausal women, loss of the reproductive organs was associated more with the perception of the role of being a woman, and the inability to nurture and care for the family, as opposed to childbearing capacities. Ashing-Giwa et al. (2004) found that women of child-bearing age who did not have children reported more distress.

A diagnosis of cervical cancer not only affects the woman, but has the potential of causing distress to the partner or spouse. Among a host of relational concerns, worries about the partner/spouse's attitude, concerns relating to prognosis, fear of recurrence, sexual intimacy, risk of transmission, and communicating with one's partner and the treatment-team have been cited (Corney et al., 1992; Cull et al., 1993; De Groot et al, 2005). Hence De Groot et al. (2005) strongly advocate for psychological and supportive intervention to include partners/spouses of women with cervical cancer, in order to enhance relationship and marital satisfaction among couples who are faced with the difficult task of adjusting and adapting to cervical cancer and its treatment.

As outlined above, breast and cervical cancer and their treatments leave women not only with an assault to their sense of identity as women, but also foster depression, anxiety and adjustment disorder for many women so affected (Auchincloss & McCartney, 1998).

Psychological distress, depression and anxiety in cancer patients
Case fatalities rates from cancer are decreasing and cancer patients who eventually die are living longer with the illness between the time of diagnosis and death (Owen et al., 2001). Therefore, there has been a shift in research from survival only to prevention and

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detection, quality of life, psychosocial issues and distress, psychosocial interventions, and end of life/palliative care (Dolbeault et al., 1999; Holland, 2004; Keller et al., 2003; Kissane, 2009; Nehl et al., 2003). There is a growing interest in the provision of psychosocial interventions and treatments in order to enable cancer patients to live with, adapt to and cope with the disease and its sequelae, as evidenced in the extensive literature on psychosocial intervention and its effect on psychological distress and quality of life. Notably, the psychosocial consequences of breast and cervical cancer significantly contribute to and are associated with distress, which is a component of the psychosocial effects of cancer.

In recent years, distress has emerged as one of the most researched aspects of psycho-oncology. Within the oncology context, the National Comprehensive Cancer Network's (NCCN) Distress Management panel defines distress as "a multifactorial, unpleasant experience of an emotional, psychological, social or spiritual nature that interferes with the ability to cope with cancer, its physical symptoms and its treatment. Distress extends along a continuum, ranging from common normal feelings of vulnerability, sadness and fear to disabling conditions, such as clinical depression, anxiety, panic, isolation, and existential or spiritual crisis" (NCCN, 2008, p. MS-2). The word "distress" was chosen as it is less stigmatizing and more acceptable to patients, compared to other words such as "psychiatric", "psychological" or "emotional".

The diagnosis and treatment of cancer continues to be one of the most emotionally distressing events in medical care (Baider et al., 1994; D'Arrigo et al., 2000; Derogatis et al., 1983; Pruitt et al., 1992; Roth et al., 1998). According to prevalence studies, approximately half of all cancer patients suffer from significant elevated levels of emotional distress (Derogatis et al., 1983; Zabora et al., 2001; Zabora et al., 1996). Adjustment disorders, depression and anxiety are the most commonly diagnosed psychiatric disorders (Spiegel, 1996). Hence many studies of psychological distress also utilize screening instruments for depression and/or anxiety (Carlson & Bultz, 2003).

The diagnosis of depression in cancer patient is difficult to make as many of the symptoms of depression are similar to specific cancers and their treatments (e.g. fatigue, weight loss, anhedonia) (Trask & Pearman, 2007). Research indicates that depression occurs at various stages of the cancer trajectory, such as at diagnosis, during treatment, at recurrence and after cancer treatment. A study by Evans et al. (1986) of women with gynecologic cancer identified 23% as meeting a diagnosis of major depression and while 24% met the diagnosis for non-major depression (including adjustment disorder with depressed mood and mixed features, uncomplicated bereavement) at the time of diagnosis. A more recent study (Burgess et al., 2005) of women with early breast cancer found that 38% of the patients experienced an episode of depression, anxiety or both at diagnosis (Burgess et al., 2005). These authors found an annual prevalence of 48% for the first year after diagnosis. Additionally, depression, anxiety or both were present in 45% of the patients three months after diagnosis of a recurrence. Epping-Jordan et al. (1999) found a prevalence of depression of 26% following completions of chemotherapy and/or radiation therapy among women with breast cancer. Research further indicates that the prevalence of depression is higher in cancer patients after treatment compared to the general population (Burgess et al., 2005; Kornblith & Ligibel, 2003). Reported prevalence of depressive and/or anxious symptoms among breast and gynecological cancer patients range from 16% to as high as 57% (Burgess et al., 2005; Derogatis et al., 1983; Ell et al., 2005; Grabsch et al., 2006; Harter et al., 2001; Hegel et al., 2006; Kissane et al., 2004; Kissane et al., 1998; Mehnert & Koch, 2007; Zabora et al., 2001). The presence of depression and its associated symptoms significantly increase the burden of distress for cancer patients (Reich et al., 2008).

According to Carlson and Bultz (2003) between a third and 45% of cancer patients report significant psychological distress. However, fewer than 10% are referred for psychosocial care (Carlson and Bultz 2003; Kadan-Lottick et al., 2005; Roth et al., 1998). Failure to recognize and treat psychological distress leads to various problems. Distressed patients are more likely to make extra visits to the physician's office and hospital emergency department (NCCN, 2008). Distress is associated with difficulties in making treatment-related decisions (Colleoni et al., 2000), lower adherence to treatment

and higher treatment failure (Colleoni et al., 2000; Kennard et al., 2004), decreased rates of disease-free survival (Fawzy et al., 1990; Spiegel et al., 1998), lower quality of life (Hann, et al., 1997; Sutherland et al., 1997; Von Essen et al., 2002), difficulties in coping and adjustment (Bottomley et al., 1996), patient suicide (Chochinov et al., 1995), higher dissatisfaction with medical care, and increased caregiver distress (Fang et al., 2001).

Cancer-related distress, however, goes unrecognized and untreated (Ryan et al., 2005), owing to numerous barriers. With inadequate resources in many oncology settings, physicians are often too pressed for time to sufficiently enquire about patients' distress (Holland, 1999; NCCN, 2008). Patients fearing to be labelled as weak and unable to cope (Zabora, 1998), often conceal and are reluctant to report their distress (Holland, 1999; Zabora, 1998). Lack of physician training in the recognition and treatment of distress (e.g. depression), the stigma attached to words such as "psychiatric" and "psychological", barriers to communication, and the perceived notion that depression and anxiety are normal reactions to a cancer diagnosis are among the reasons for the reluctance to discuss distress in oncology settings (NCCN, 2008; Ryan et al., 2005; Zabora, 1998).

The systematic screening and recognition of distress are essential in the management of psychological distress of cancer patients and offer many benefits (NCCN, 2008). Distress can be treated via pharmaceutical and psychosocial interventions, and results in a reduction in health-care costs (Carlson & Bultz, 2004). Psychosocial interventions have been shown to be effective in enhancing coping (Cameron et al., 2007; Kissane et al., 2003), reducing distress (Andrykowski & Manne, 2006; Cameron et al., 2007; Cunnigham, 2000, 2002; Meyer & Mark, 1995), improving overall quality of life (Marchioro, et al., 1996), increasing disease-free intervals (Spiegel et al., 1989), improved survival (Fawzy et al., 1993; Sheard & Maguire, 1999; Spiegel et al., 1989), enhancing immune function (McGregor et al., 2004) as well as increasing well-being in significant others (Bultz et al., 2000). Given the pervasiveness of distress among cancer patients, Bultz and Carlson (2005) suggest that health care professionals need to recognize psychological distress as the sixth vital sign and core indicator of the patients'

health and wellbeing. Hence these authors advocate for routine screening of psychological distress in oncology settings.

Distress and psychological effects of cancer in Africa

Within the African context, a number of studies indicate that women with cancer exhibit a number of psychosocial concerns. For example, a Nigerian study by Ohaeri et al. (1998) found that feeling depressed about the illness (i.e. cancer) was the most common worry in 45% of patients with breast and cervical cancer. Another Nigerian study on the psychological effects of pain reported rates of depression (37%) and anxiety (21%). This study also reported suicidal ideation in 65% of the patients who reported pain (Nuhu et al., 2009). A Sudanese study (Abasher, 2008) found sexual disturbances and decreased quality of life among breast cancer patients. In Schlebusch and Van Oers's (1999) South African study, 24% of black cancer patients (Zulu-speaking) and 4% of Caucasian (English-speaking) were identified as positive for psychological distress. Another South African study found a prevalence of approximately 14% (Berard et al., 1998) for depression. However, the authors state that this is potentially an underestimation. A more recent study reported elevated levels of unhealthy stress among South African breast cancer patients (Lo Castro & Schlebusch, 2006). On the psychological reaction dimension, fear of the disease, feelings of depression and lack of self-confidence were the most frequently reported symptoms. Similar psychological/emotional concerns have been reported by Fernandes et al. (2006) as well as by Pillay (2001) whose study found that cancer patients reported significantly higher levels of depression, anxiety and hopelessness compared to controls.

Although there is limited research on the psychosocial effects of cancer within the African context, Ohaeri et al. (1998) argue that the major concerns of the psychosocial impact of breast and cervical cancer might be similar across cultures and hence advocate for the provision of psychosocial intervention. Similarly, Schlebusch and Van Oers (1999, p. 34) state that "unless the process of identification of psychological disturbances with all its vicissitudes across cultures are known, effective treatment in a multiethnic setting is not possible".

The psychological effects and distress associated with a cancer diagnosis in Namibia have not been researched. Similarly, no valid and cost-effective methods to assess and manage psychological distress have been explored within the region. As is the case with many developing nations and in southern Africa, many of the hospitals and/or clinics are under-staffed, lack resources and the medical personnel are overburdened with patient load. These challenges, among others, make the investigation and management of psychosocial issues among cancer patients a challenging task (Berard at al., 1998).

METHODOLOGY

Aims of the study

Given the paucity of psycho-oncological research in southern Africa, the primary objective of this study was to investigate the presence (or absence) of psychological distress, depression and anxiety among Oshiwambo-speaking Namibian and Sesotho-speaking South African women diagnosed with breast or cervical cancer. More specifically, the study aimed at comparing the Namibian and South African samples with regard to these aspects. Furthermore, the study aimed at exploring the feasibility of the use of the Distress Thermometer as a quick screening instrument for psychological distress within these oncology settings.

For the purpose of this study and for ease of reading, the terms "Oshiwambo-speaking Namibian women", "Namibian women", "Namibian cancer patients" and "Namibian sample" will be used interchangeably to refer to the Oshiwambo-speaking Namibian women diagnosed with breast or cervical cancer in this study. Similarly, "South African women", "South African cancer patients" and "South African sample" will refer to Sesotho-speaking South African women diagnosed with breast or cervical cancer in this study.

Settings and procedures

Study participants in both countries were recruited from out-patient oncology clinics within public health institutions, based namely in Oshakati (Namibia) and Bloemfontein

(South Africa). Inclusion criteria were: a diagnosis of breast or cervical cancer, aged ≥18 years, ability to speak and understand Oshiwambo (Namibia) or Sesotho (South Africa), ability to give written or verbal consent and knowledge of the cancer diagnosis. Patients who were too physically ill (e.g. on stretchers), had obvious mental disabilities (e.g. severe mental retardation, not orientated to time, place or person), or were not informed yet of their cancer diagnosis were excluded from the study.

Subjects were a convenience sample of patients in the waiting room at the Oshakati State Hospital (Namibia) and the Universitas Academic Hospital (based at the National District Hospital, Bloemfontein, South Africa) oncology clinics. Patients were approached by the researcher or research assistants at the oncology outpatient clinics, the aim of the study was explained and consent obtained. Permission for data collection in Namibia was granted by the Ministry of Health and Social Services, which inter alia serves the purpose of ethical approval. In South Africa, the study was approved by the Ethics Committee of the Faculty of Health Sciences at the University of the Free State (UFS) and permission for data gathering was granted by the Department of Health of the Free State Province and the Department of Oncotherapy of UFS' Faculty of Health.

Instruments

Three research instruments were utilized, namely a demographic questionnaire, the Distress Thermometer and the Hospital Anxiety and Depression Scale. The self-composed demographic questionnaire was used to establish variables such as age, marital status, socioeconomic status, educational background, usefulness of social support system, type of cancer, type of cancer treatment received, time since cancer diagnosis, whether or not counseling was received following the cancer diagnosis, and whether or not patients desired counseling.

The Distress Thermometer (DT) (Roth et al., 1998) is a relatively new and most well-known ultra-short self-report screening instrument of global psychological distress for use in oncology settings (Mitchell, 2007; NCCN, 2008). It is a single-item visual analogue scale in the form of a thermometer. The DT is calibrated on an 11-point scale,

ranging from a minimum of 0 ("no distress") to a maximum of 10 ("extreme distress"). The DT was designed to "destigmatize" reporting psychological distress. Although relatively new, the DT has in recent years gained international popularity as a screening instrument for psychological distress in oncology settings.

Generally, there appears to be consensus among researchers regarding the cut-off score for the DT. Whereas some research has used a cut-off score of 5 as indicative of significant distress (Akizuki et al., 2003; Cohen et al., 2002; Gessler et al., 2008; Gil et al., 2005; Hoffman et al., 2004; Kumar et al., 2006; Mehnert et al., 2006; Roth et al., 1998; Trask et al., 2002; Tuinman et al., 2008), more recent studies have employed a cut-off score of 4 (Adams et al., 2006; Almanza-Muñoz et al., 2008; Andritsch et al., 2006; Gessler et al., 2006; Grassi et al., 2006; Jacobsen et al., 2005; NCCN, 2008; Özalp et al., 2007; Ransom et al., 2006; Zainal et al., 2007). The single-item DT compares favourably with well-established screening measures of distress, such as the 14-item Hospital Anxiety and Depression Scale (HADS), the 18-item Brief Symptom Inventory (BSI-18), the Center for Epidemiology Studies-Depression Scale (CES-D), the State-Trait Anxiety Inventory-State Version (STAI-S) and the General Health Questionnaire (GHQ) (Akizuki et al., 2003; Cohen et al., 2002; Gessler et al., 2008; Jacobsen et al., 2005; Özalp et al., 2007; Roth et al., 1998; Trask et al., 2002). A recent analysis of the accuracy of the DT to detect distress, anxiety and depression found that the DT performed best in relation to distress (Mitchell, 2007). The DT is highly acceptable by cancer patients (Gessler et al., 2008) and has practical appeal for busy oncology personnel (Fulcher & Gosselin-Acomb, 2007; Mitchell, 2007; Vitek et al., 2007).

The Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, 1983) was originally developed to provide clinicians and scientists with a practical, reliable and valid measurement tool for the two most common psychological disturbances (i.e. anxiety and depression) among clinical populations with physical diseases. The HADS total scale has also been used at a measure of psychological distress (Chaturvedi, 1991; Hopwood et al., 1991; Ibbotson et al., 1994; Johnston et al., 2000; Razavi et al., 1990; Spinhoven et al., 1997). It consists of 14 items; 7 for the anxiety sub-scale and 7 for the

depression subscale. All items are scored on a 4-point scale, ranging from 0 to 3, yielding scores 0 to 21 for each sub-scale and 0 to 42 for the entire scale. A particular strength of the HADS is that its items do not include somatic indicators of psychological distress (e.g. headaches, insomnia, weight loss) that might be due to medical illnesses or treatments (Herrmann, 1997; Johnston et al., 2000).

The HADS is an internationally acclaimed instrument with over 33 language translations (Bedford et al., 1997; Herrmann, 1997) and is often used as a benchmark in validating other screening measures of psychological distress (Carlson & Bultz, 2003). International studies reported good validity and reliability of the HADS in oncology settings (Bedford et al., 1997; Johnston et al., 2000; Razavi et al., 1990). In South Africa, Boermeester and Berard's study (1998) reported good psychometric properties of the HADS. To the knowledge of the researcher, no HADS psychometric properties have been reported in Namibian oncology settings.

There is no single, generally accepted cut-off score for the HADS (Herrmann, 1997; Herrero et al., 2003). Zigmond and Snaith (1983) in their original study recommended the following: a score of 0-7 for non-case, 8-10 for doubtful cases and 11 or more for definite cases for either anxiety or depression. In accordance with recent studies in oncology settings, cut-off scores of 8 for anxiety and depression subscales were employed, while 15 or more viewed as indicative of psychological distress (Berard et al., 1998; Cohen et al., 2002; Ibbotson et al., 1994; Jacobsen et al., 2005; Özalp et al., 2007; Roth et al., 1998; Trask et al., 2002).

All the research instruments were translated into Oshiwambo and Sesotho by means of the process of backward-forward translation procedure through the Universities of Namibia and the Free States' departments of psychology.

Statistical analysis
Descriptive statistics were utilized to characterize the sample with regard to demographic characteristics. Pearson correlations between the DT, HADS subscale and total HADS

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scores were calculated. In order to determine the cut-off score for the DT at which the sensitivity and specificity ratio is optimized, receiver operating characteristic (ROC) curve analysis was employed. In this relation, the HADS criterion was used as a basis for comparison. Independent sample t-tests and Kruskal-Wallis tests were carried out to explore differences in variables of a continuous nature. Chi-squared tests and Fisher exact tests were carried out to explore differences in DT and HADS scores in relation to results of a categorical nature. Statistical significance was tested using two-tailed p-value (5% level) and 95% confidence interval.

RESULTS

Socio-demographic characteristics

The socio-demographic characteristics and associated p-values are depicted in Table 1. The total sample size for the study was 229 cancer patients. The Namibian sample consisted of 103 women diagnosed with breast cancer (n=50) and cervical cancer (n=53). The South African sample consisted of 126 women with breast cancer (n=69) and cervical cancer (n=57). On average, the Namibian sample was significantly older (mean= 56.77; S.D.=14.27; range: 24-88) than the South African sample (mean: 52.21; S.D.=12.56; range: 25-78), [t(227)=2.57, p=0.0109]. However, the magnitude of the difference in the mean age was very small (eta squared=0.004). The mean time since cancer diagnosis (in months) was 31.55 (S.D.=32.80; median: 20.00; range: 0-166) for the Namibian sample and 12.60 (S.D.=12.65; median 7.50; range: 1-72) for the South African sample. There was a significant difference in the median time since cancer diagnosis (p<0.0001), with the South African patients being more recently diagnosed.

Approximately 32% and 39% of the Namibian and South African patients respectively were married. Only a minority of the subjects of both nationalities were employed (16% Namibians; 27% South Africans). Nearly 70% of both the Namibian and South African patients described their socio-economic status as "low income". Over 60% of the patients in both countries had little or no formal education. The majority (55%) of the Namibian women had received combinations of cancer treatments (i.e. surgery, radiation therapy, chemotherapy), whereas the South African women primarily noted radiation

Table 1: Socio-demographic characteristics of the study sample

Variables	Number of patients (valid %)		Significance
	Namibian (N=103)	South African (N=126)	
Age in years (mean ± S.D.)	56.77 ± 14.27	52.21 ± 12.56	p=0.0109
Months since cancer diagnosis (mean ± S.D.)	31.55 ± 32.80 median=20.00	12.60 ± 12.65 median=7.50	p<0.0001
Type of cancer			p=0.3488
Breast cancer	50 (48.5)	69 (54.8)	
Cervical cancer	53 (51.5)	57 (45.2)	
Marital status			p=0.0102
Never married	30 (29.7)	25 (22.1)	
Married	32 (31.7)	44 (38.9)	
Divorced	6 (5.9)	7 (6.2)	
Separated	1 (1.0)	13 (11.5)	
Widowed	32 (31.7)	24 (21.2)	
Missing	2	13	
Employment status			p=0.0010
Employed	16 (15.5)	34 (27.0)	
Unemployed	41 (39.8)	23 (18.3)	
Retired	5 (4.9)	12 (9.5)	
Full-time homemaker	4 (3.9)	9 (7.1)	
On leave from employment	0 (0)	6 (4.8)	
On disability grant/benefits	5 (4.9)	11 (8.7)	
Pensioner	32 (31.1)	31 (24.6)	
Socio-economic status			p=1.0000
Low income	69 (70.4)	87 (69.0)	
Low-to-middle income	16 (16.3)	21 (16.7)	
Middle income	12 (12.2)	16 (12.7)	
Middle-to-high income	1 (1.0)	2 (1.6)	
High income	0 (0)	0 (0)	
Missing	5	0	
Highest education			p=0.2849
Little or no formal education	65 (64.4)	77 (61.6)	
Some secondary education	23 (22.8)	21 (16.8)	
High school	8 (7.9)	14 (11.2)	
Higher education	5 (5)	13 (10.4)	
Missing	2	1	
Type of cancer treatment received			p<0.0001
Surgery	19 (18.4)	11 (8.7)	
Chemotherapy	7 (6.8)	4 (3.2)	
Radiation	15 (14.6)	73 (57.9)	
Surgery & chemotherapy	16 (15.5)	3 (2.4)	
Surgery & radiation	12 (11.7)	5 (4.0)	
Chemotherapy & radiation	15 (14.6)	19 (15.1)	
Surgery, chemotherapy & radiation	14 (13.6)	11 (8.7)	
No cancer treatment received yet	5 (4.9)	0 (0)	
Have you received counseling?			p<0.0001
Yes	35 (34.0)	97 (77.0)	
No	68 (66.0)	29 (23.0)	
If you did receive counseling, who provided the counseling?			p=0.0021
Medical doctor	10 (28.6)	15 (15.5)	
Nurse	12 (34.3)	36 (37.1)	
Psychologist	1 (2.9)	14 (13.4)	
Social worker	3 (8.6)	24 (24.7)	
Religious leader/pastor	4 (11.4)	8 (8.3)	
Others (e.g., family, relatives, friends)	4 (11.4)	0 (0)	
Missing	1 (2.9)	1 (1.0)	
If you did not receive counseling, would you like counseling?			p=0.0020
Yes	63 (93.0)	20 (69.0)	
No	4 (7.0)	9 (31.0)	
Missing	1	0	
Usefulness of social support			p<0.0001
Low usefulness	34 (33.0)	11 (8.7)	
Moderate usefulness	30 (29.1)	54 (42.9)	
High usefulness	39 (37.9)	61 (48.4)	

therapy as the form of cancer treatment received (58%). Thirty four percent (34%) of the Namibian patients stated having received some form of counseling after cancer diagnosis, whereas 77% of the South African patients stated that they had received counseling. Of the Namibian patients who received counseling, approximately 63% was provided by medical personnel (medical doctors and nurses). Of the South African patients who received counseling, approximately 53% received counseling from medical personnel (medical doctors and nurses) and 38% from social service providers (psychologist and social workers). Of those patients who did not receive counseling, 93% Namibians and 69% South Africans stated that they would like to receive counseling. Sixty seven percent (67%) and 91% of the Namibian and South African patients respectively, rated the usefulness of their social support systems as moderate or high.

Results on the DT and HADS

Low to moderate means of 3.15 (S.D., 2.73) and 3.30 (SD., 2.70) were obtained on the DT by the Namibian and South African patients respectively. There was no significant difference in the DT mean scores [$t(224)=0.54$, $p=.59$]. However the DT scores for the South African sample were significantly positively skewed ($p<0.001$), yielding a median of 2.00. The median for the Namibian sample was 3.00. Kruskal-Wallis test revealed no significant differences between the DT median scores ($p= 0.307$).

For this study the Cronbach's alpha (α) coefficients for the South Africa sample were high and acceptable for the HADS anxiety subscale (0.86), the HADS depression subscale (0.83), and the total HADS scale (0.92). For the Namibian sample the Cronbach's α were moderate and acceptable for the HADS anxiety subscale (0.73) and total HADS scale (0.77). However, the HADS depression subscale yielded a lower Cronbach's α of 0.63. Table 2 shows the reliability coefficients for this study.

Table 2: Cronbach alpha coefficients for the HADS obtained for the Namibian and South African samples

Subscale/Scale	Namibian	South African
HADS Anxiety sub-scale	0.7327	0.8645
HADS Depression sub-scale	0.6327	0.8326
HADS Total Scale	0.7769	0.9163

The means for the HADS anxiety subscale were 5.83 (S.D., 3.81) for the Namibian and 6.36 (S.D., 4.77) for the South African patients respectively. The median scores were 6.00 for both nationalities and there was no significant difference in the median scores (p=0.6556). Using a cut-off score of 8 as indicative of the presence of anxiety, 32% of the Namibian patients and 34% of the South African patients obtained scores above the cut-off (case-criterion).

On the depression subscale of the HADS, South African patients scored higher (mean= 6.49; S.D., 4.49) than Namibian patients (mean=4.97; S.D., 3.44). The median scores were 5.00 for both Namibia and South Africa. Kruskal-Wallis test reveals a significant difference (p=0.0370). Using a cut-off score of 8 as indicative of the presence of depression, 18% of the Namibian patients and 33% of the South African patients scored above the case-criterion.

The means scores on the HADS total scale for the Namibian and South African samples were 10.80 (S.D., 6.29) and 12.85 (S.D., 8.84) respectively. The median scores were 11.00. Using a cut-off score of 15 on the HADS total scale as indicative of the presence of psychological distress, 28% of the Namibian patients and 33% of the South African patients obtained scores above the cut-off, while 72% and 67% respectively obtained scores below the cut-off (non-case criterion). These HADS anxiety, depression and total results are presented in Table 3.

Table 3: Performance on the Hospital Anxiety and Depression Scale

Variable	Results		
	Namibian (N=103)	South African (N=125)	Significance
HADS Anxiety	5.83 (3.81) median =6.00	6.36 (4.77) median=6.00	p=0.6555
HADS Depression	4.97 (3.44) median=5.00	6.49 (4.49) median=5.00	p=0.0370
HADS Total	10.80 (6.29) median=11	12.85 (8.85) median=11.00	p=0.2675
Above HADS Anxiety cut-off (≥ 8)	33 (32.0%)	42 (33.6%)	p=0.8028
Below HADS Anxiety cut-off (<8)	70 (68.0%)	83 (66.4%)	
Above HADS Depression cut-off (≥ 8)	19 (18.4%)	41 (32.8%)	p=0.0143
Below HADS Depression cut-off (<8)	84 (81.6%)	84 (67.2%)	
Above HADS total cut-off (≥ 15)	29 (28.2%)	41 (32.8%)	p=0.4492
Below HADS total cut-off (<15)	74 (71.8%)	84 (67.2%)	
Note: Data presented as *n (%)* or mean ± S.D.			

Establishing a cut-off score for the DT

To establish the DT cut-off score at which the optimal sensitivity and specificity are achieved, the DT scores were compared with an established cut-off score of 15 for the HADS by receiver operating characteristic (ROC) curves. The ROC curve is a graphic technique that allows for the visual analysis of the trade-off between the sensitivity and specificity of various scores on the DT. The area under the curve (AUC) provides an estimate of the discriminative accuracy of the DT relative to established HADS cut-off. A test with perfect accuracy has an AUC of 1, whereas a test with no apparent accuracy has an AUC of 0.5 (Akobeng, 2007; Murphy et al., 1987; Zweig & Campbell, 1993).

For the Namibian sample, the AUC suggests that the DT score discriminates between patients identified as distressed by the HADS and those identified as not distressed (AUC= 0.68, S.E. = 0.06, 95% CI = 0.56-0.80, nonparametric p=0.004). The obtained AUC depicts low to moderate discriminative accuracy. Visual inspection of the ROC curve suggests that a cut-off score of 3 yields the optimal ratio of sensitivity (0.76) to specificity (0.57). Using two methods recommended by various authors (e.g. Akobeng, 2007; Perkins & Schisterman, 2006), namely finding the minimum value for $(1\text{-sensitivity})^2 + (1\text{-specificity})^2$ or the maximum Younden index (sensitivity + specificity-1) corresponding to various DT scores, the results suggest that a score of 3 provides optimal cut-off. At this cut-off score, the positive predictive value (PPV) and negative predictive value (NPV) were 0.42 and 0.86 respectively.

The results for the South African sample suggests that the DT score provides moderate to high discriminative accuracy of the DT relative to established HADS cut-off (AUC = 0.76, S.E. = 0.04, 95% CI = 0.67-0.84, nonparametric p=0.00). Visual inspection of the ROC curve suggests that a cut-off score of 3 provides the optimal combination of sensitivity (0.77) to specificity (0.71) ratio. Similar results (i.e. cut-off of 3) are confirmed through the calculation of the minimum value for $(1\text{-sensitivity})^2 + (1\text{-specificity})^2$ or the maximum Younden index corresponding to various DT scores. At this cut-off score, the PPV and NPV were 0.55 and 0.86 respectively. The ROC curves and tables of corresponding sensitivity and specificity for various cut-off scores for both

the Namibian and South African samples are depicted in Figures 1a and 1b, and Tables 4a and 4b.

Using the obtained DT cut-off score from the ROC curve analysis above relative to the established cut-off for the total HADS scale case-criterion, approximately 52% of Namibian patients were classified as distressed and 48% as not distressed. At the same cut-off, approximately 44% of South African patients were classified as distressed and 56% as not distressed. However, chi-square test reveals no significant difference between the Namibian and South African samples. (p=0.201). These results are shown in Table 5, while Table 6 shows the cross-tabulation between the DT (cut-off score of 3) and HADS distress case-criteria (described above).

Using the cut-off score of 4 suggested by the NCCN Distress Management Panel, approximately 49% of the Namibian patients were classified as distressed. This decreased the sensitivity (0.69), but increases the specificity (0.60). Using the same cut-off, approximately 35% of the South African patients were classified as distressed. This decreases the sensitivity (0.54), but increases the specificity (0.75). At a DT cut-off score of 4, chi-square test reveals a significant difference between the Namibian and South African samples. (p=0.0388). See Table 5.

Correlations between the DT and the HADS

For the Namibian sample, there was a positive correlation between the HADS depression and anxiety scores (r = 0.502, p<0.0001). The total HADS correlated strongly with both the HADS anxiety subscale (r = 0.881, p<0.0001) and the HADS depression subscale (r = 0.851, p<0.0001). The DT yielded moderate positive correlations with the HADS anxiety subscale (r = 0.463, p<0.0001), the HADS depression subscale (r = 0.303, p=0.0018) and the total HADS score (r = 0.447, p<0.0001). These results for the Namibian sample are presented in Table 7a.
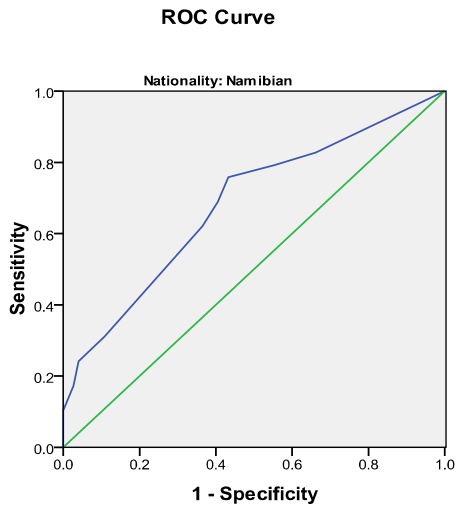
ROC Curve

Nationality: Namibian

Diagonal segments are produced by ties.

DT cut-off score	Sensitivity	Specificity
0	1.000	0.000
1	0.828	0.338
2	0.793	0.446
3	*0.759*	*0.568*
4	0.690	0.595
5	0.621	0.635
6	0.310	0.892
7	0.241	0.959
8	0.172	0.973
9	0.103	1.000
10	0.034	1.000

Figure 1a: ROC curve analysis comparing the Distress Thermometer scores with established HADS cut-off score: Namibian sample

Table 4a: Sensitivity and specificity for different DT cut-off scores: Namibian sample
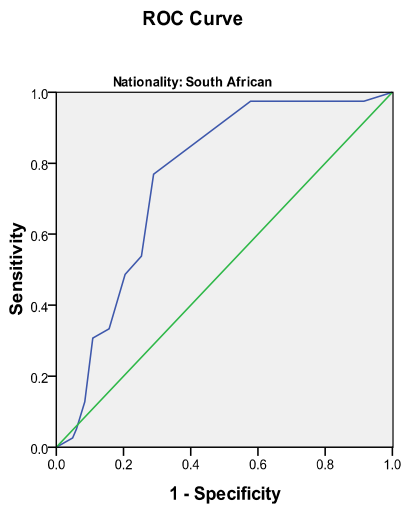
ROC Curve

Nationality: South African

Diagonal segments are produced by ties.

DT Cut-off score	Sensitivity	Specificity
0	1.000	0.000
1	0.974	0.084
2	0.974	0.422
3	*0.769*	*0.711*
4	0.538	0.747
5	0.487	0.795
6	0.333	0.843
7	0.308	0.892
8	0.128	0.916
9	0.051	0.940
10	0.026	0.952

Figure 1b: ROC curve analysis comparing the Distress Thermometer scores with established HADS cut-off score: South African sample

Table 4b: Sensitivity and specificity for different DT cut-off scores: South African sample

Table 5: Performance on the Distress Thermometer

	Namibian (N=103)	South African (N=123)	Significance
Distress Thermometer	3.15 (2.73) median=3.00	3.30 (2.70) median=2.00	p=0.380
Above DT cut-off (≥ 3)	54 (52.4%)	54 (43.9%)	p=0.1859
Below DT cut-off (<3)	49 (47.6%)	69 (56.1%)	
Above DT cut-off (≥ 4)	50 (48.5%)	43 (35.0%)	p=0.0388*
Below DT cut-off (<4)	53 (51.5%)	80 (65.0%)	

Note: Data presented as *n (%)* or mean ± S.D.

Table 6: Cross-tabulation/correspondence of the DT at a cut-off score of 3 to the HADS for the Namibian and South African samples

Scale: DT (≥3)		HADS (≥15)		
		Distressed N (%)	Not Distress N (%)	
Namibia	Distressed	22 (21.4%)	32 (31.1%)	**54 (52.4%)**
	Not distressed	7 (6.8%)	42 (40.8%)	**49 (47.6%)**
		29 (28.2%)	74(71.8%)	103 (100%)
		HADS (≥15)		
		Distressed N (%)	Not Distress N (%)	
South Africa	Distressed	29 (23.8%)	24 (19.7%)	**53 (43.4%)**
	Not Distressed	10 (8.2%)	59 (48.4%)	**69 (56.6%)**
		39 (32.0%)	83 (68.0%)	122 (100%)

Table 7a: Correlations between the HADS and the DT (Namibia)

	DT	HADS Anxiety	HADS Depression	HADS Total
DT	1.00	0.463***	0.303**	0.447***
HADS Anxiety		1.00	0.502***	0.881***
HADS Depression			1.00	0.851***
HADS Total				1.00

___
Note: N=103, ***correlation is significant at p<0.001
          **correlation is significant at p<0.01

For the South African sample, there was a strong positive correlation between the HADS depression and anxiety scores (r = 0.827, p<0.0001). The total HADS correlated strongly with both the HADS anxiety subscale (r = 0.958, p<0.0001) and the HADS depression subscale (r = 0.953, p<0.0001). The DT yielded weak to moderate positive correlations with the HADS anxiety subscale (r = 0.229, p=0.0112), the HADS depression subscale (r = 0.447, p<0.0001) and the total HADS score (r = 0.349, p<0.0001). These results for the South African sample are presented in Table 7b.

Table 7b: Correlations between the HADS and the DT (South Africa)

	DT	HADS Anxiety	HADS Depression	HADS Total
DT	1.00	0.229**	0.447***	0.349***
HADS Anxiety		1.00	0.827***	0.958***
HADS Depression			1.00	0.953***
HADS Total				1.00

_____
Note: N=123, ***correlation is significant at 0.001
                **correlation is significant at 0.01

To compare the correlation coefficients for the scores of the Oshiwambo-speaking and Sesotho-speaking cancer patients, the obtained Pearson's correlations were transformed into z-scores. Using the formula in Pallant (2005), observed z-scores (z_{obs}) were calculated to determine the significance of the differences in correlations. Observed z-scores (z_{obs}) between -1.96 and +1.96 imply that the correlations coefficients are not statistically different. Observed z-scores (z_{obs}) values $\leq$ -1.96 or $\geq$ +1.96 imply significant differences in the correlation coefficients (at $p \leq 0.05$). The following significant differences in the correlations were found: HADS anxiety and the HADS depression (p<0.0001); HADS anxiety and HADS total (p<0.0001); as well as the HADS depression and the HADS total (p<0.0001). No significant differences were found in the correlations between the DT and the HADS anxiety and depression subscales (p=0.048; p=0.218) and HADS total scale (p=0.388) for the Oshiwambo-speaking and Sesotho-speaking cancer patients. These comparisons of the correlation coefficients are depicted in Table 7c.

Table 7c: Observed z-scores of the differences between the correlation coefficients of distress, anxiety and depression between the Namibian and South African cancer patients

	DT	HADS Anxiety	HADS Depression	HADS Total
DT	x	1.95 (NS) *p=0.048*	-1.20 (NS) *p=0.218*	0.83 (NS) *p=0.388*
HADS Anxiety		x	-4.62 (S) *p<0.0001*	-4.23 (S) *p<0.0001*
HADS Depression			x	-4.67 (S) *p<0.0001*
HADS Total				x

Note: (NS) = not significant, (S) = significant
          x = not applicable

Relations between patient characteristics and distress, anxiety, and depression

For the Namibians, results revealed no significant correlations between age of the patients and distress (on both the DT and the HADS), anxiety and depression. On the contrary, there were significant low negative correlations between age and distress (on both the DT and the HADS), anxiety and depression for the South African patients. When comparing the correlations for the Namibian and South African samples, the differences in the correlations were significant (all p-values ≤0.05). For the South African sample, Pearson correlations revealed no significant correlations between time since diagnosis and the DT or HADS scales. For the Namibian sample however, time since diagnosis was correlated positively with distress as assessed by the both the DT and HADS total, as well as for HADS anxiety, but not for the HADS depression. These differences in correlations between the Namibian and South African sample were, however, only significant for the HADS anxiety (p=0.036). See Tables 8a, 8b and 8c.

Table 8a: Relationships between patient characteristics and distress, anxiety and depression for the Namibian patients

Co-relationships between patient characteristics and distress, anxiety and depression				
		DT	HADS Anxiety	HADS Depression	HADS Total
Age	**Pearson r value**	0.075	0.047	0.165	0.119
Time since diagnosis	**Pearson r value**	0.205*	0.322*	0.132	0.256*
* Significant at p≤0.05				

Table 8b: Relationships between patient characteristics and distress, anxiety and depression for the South African patients

Co-relationships between patient characteristics and distress, anxiety and depression					
		DT	HADS Anxiety	HADS Depression	HADS Total
Age	**Pearson r value**	-0.237*	-0.286*	-0.286*	-0.299*
Time since diagnosis	**Pearson r value**	-0.054	0.048	-0.021	0.012
* Significant at p≤0.05					

Table 8c: Comparison of the correlations/relationship between Namibian and South African samples between patient characteristics and the DT and HADS

Co-relationships between patient characteristics and distress, anxiety and depression					
		DT	HADS Anxiety	HADS Depression	HADS Total
Age	**p value**	0.020*	0.012*	0.000*	0.002*
Time since diagnosis	**p value**	0.055	0.036*	0.225	0.066
* Significant at p≤0.05					

Because of the skewed distributions on the DT and HADS scores, median scores of the Namibian and South African samples were compared (Fisher exact tests) in relation to the categorical demographic variables. There were no differences in relations to the marital status, cancer type, whether counseling was received and whether counseling is needed/wanted. Unemployed South African patients scored higher on depression than their Namibian counterparts (p=0.0162). Similarly, South African classified as having a low socio-economic status scored higher on depression (p=0.0174), whereas those classified as having a middle socio-economic status also scored higher on the DT compared to their Namibian counterparts (p=0.0056). South African patients with high school level of education scored higher than their Namibian counterparts on the DT (p=0.0226), anxiety (p=0.0148), depression (p=0.0031) and HADS total scale (p=0.0044). South African patients who have had surgery obtained a higher median score compared to the Namibian patients on depression and HADS total (p=0.0275 and p=0.0347 respectively). Similarly, South African patients who have received chemotherapy scored higher that the Namibian patients on the DT, anxiety and HADS total score (p=0.0209; p=0.0224; p=0.0230 respectively). South African patients who had received a combination of chemotherapy and radiation therapy obtained a higher

median score than the Namibians on the DT (p=0.0471). On the contrary, Namibians who have received a combination of chemotherapy and radiation therapy obtained a higher median on anxiety (p=0.0233). South African patients who received a combination of surgery, chemotherapy and radiation therapy obtained a higher median score compared to their Namibian counterparts on anxiety (p=0.0158), depression (p=0.0247) and the total HADS scale (p=0.0203). South African patients who reported a low level of usefulness of social support obtained higher median scores on the DT (p=0.0286), anxiety (p=0.0123), depression (p<0.0001) and total HADS scale (p=0.0009) compared to their Namibian counterparts. Table 9 depicts the significant results.

Table 9: Comparison between the Namibian and the South African samples on the relationships between categorical demographic variables versus DT, HADS anxiety, HADS depression and HADS total

Variable	Outcomes	Median Score		p-value
		Namibia	*South Africa*	
Unemployed	*HADS Depression*	*5.00*	*7.00*	*0.0162*
Low SES	*HADS Depression*	*5.00*	*6.00*	*0.0174*
Middle SES	*DT*	*2.00*	*3.50*	*0.0056*
High school	*DT*	*0.00*	*4.00*	*0.0226*
	HADS Anxiety	*2.00*	*7.50*	*0.0148*
	HADS Depression	*1.50*	*7.00*	*0.0031*
	HADS Total	*6.00*	*14.50*	*0.0044*
Surgery	*HADS Depression*	*5.00*	*10.00*	*0.0275*
	HADS Total	*9.00*	*19.00*	*0.0347*
Chemotherapy	*DT*	*2.00*	*6.00*	*0.0209*
	HADS Anxiety	*5.00*	*11.5*	*0.0224*
	HADS Total	*10.00*	*20.50*	*0.0230*
Chemotherapy + radiation therapy				
	DT	*4.00*	*6.00*	*0.0471*
	HADS Anxiety	*7.00*	*2.00*	*0.0233*
Surgery + chemotherapy + radiation therapy	*HADS Anxiety*	*4.00*	*7.50*	*0.0158*
	HADS Depression	*5.50*	*9.00*	*0.0247*
	HADS Total	*9.00*	*16.50*	*0.0203*
Low usefulness of social support				
	DT	*5.00*	*7.00*	*0.0286*
	HADS Anxiety	*6.00*	*13.00*	*0.0123*
	HADS Depression	*4.00*	*12.00*	*<0.0001*
	HADS Total	*10.00*	*24.00*	*0.0009*
Counseling provided by medical doctor	*HADS Depression*	*4.00*	*8.00*	*0.0341*
	HADS Total	*8.50*	*18.00*	*0.0451*

Note: Only significant differences are shown.

DISCUSSION

The results of this study highlight a number of important aspects of the breast and cervical cancer experience in both the Oshiwambo-speaking Namibian and Sesotho-speaking South African women. Firstly, the majority of the patients in this study had low educational levels, few were employed, and primarily came from low socio-economic strata of society. This facet reflects an important historical aspect of the social inequality of the past that is still prominent in modern-day southern Africa. Studies elsewhere, particularly in the western world, include primarily patients with comparatively higher socio-economic status and educational backgrounds. It is also important to note that many of the cancer patients in both the Namibian and South African oncology settings come from rural towns and/or villages that are often far from the urban center at which cancer treatment is provided. This potentially creates added stressors (emotional and financial) for these cancer patients.

With regard to provision of counseling, only about a third of the Namibian cancer patients received some form of counseling. This is in line with previous research that only a minority of cancer patients are referred for psychosocial care. Even within the South African setting where over 70% of the patients received some form of counseling, counseling in both settings was provided primarily by medical personnel (i.e., nurses and medical doctors). This highlights not only the potential lack of multi-disciplinary professionals within many of the oncology settings within the region, but also points to the fact that already over-burdened and under-staffed medical personnel take on the added task of providing counseling. A South African study on depression among Sesotho-speaking patients has noted that a significant number of patients first consult traditional or spiritual healers prior to consulting medical western-trained health professionals (Mosotho, 2005).

The high Cronbach's α coefficients obtained for the HADS subscales and total scale, particularly for the South African sample, suggest that the Sesotho version and translation of the HADS is a reliable instrument for this study. These alphas are comparable to those

found by Boermeester and Berard (1998) within another South African oncology setting. The Oshiwambo version, however, yielded lower reliability coefficients compared to the Sesotho version. The α coefficients for the anxiety subscale and the total HADS scale fall within acceptable ranges (i.e. between 0.7 and 0.8). However, various authors (e.g., Field, 2006; Pallant, 2005) point out that it is not uncommon to find low alphas if the scale contains less then ten items. In light of this, the alpha of 0.63 obtained for the depression subscale for the Namibian sample would probably be acceptable, but must be interpreted with caution.

This study reveals that a number of Namibian and South African cancer patients experience significant anxiety, depression and distress. With regard to anxiety, over a third of both Namibian and South Africa cancer patients in the study were classified as experiencing anxiety. Similarly, over a third of the South African patients met the case criteria for depression. Comparatively, the presence of depression among the Namibian patients was much lower. Studies using the HADS generally revealed higher anxiety rates (ranging from 33% to 51%), compared to depression rates (14% to 20%) (Berard et al., 1998; Boermeester & Berard, 1998; Mehnert & Koch, 2007; Roth et al., 1998; Trask et al., 2002). With regard to the prevalence of depression, international literature has been inconsistent, with reported prevalence ranging from 1.5% to 50% (Berard et al., 1998). Previous South African studies have found a prevalence rate of 35% for anxiety and 14% for depression (Berard et al, 1998; Boermeester & Berard, 1998). The results of the current study, therefore, support these prior findings within the southern African setting. It is probable that the current rate of depressive symptoms, particularly among the Namibian sample, is an underestimation. In personal communications of the researcher with oncologists at the Oshakati and Windhoek state oncology facilities, it has been pointed out that many of the patients tend to express psychological symptoms, and especially depression, in terms of physical symptoms. Similar tendencies have been reported among Sesotho-speakers (Mosotho, 2005).

The total HADS scale further identified approximately a third of patients of both nationalities as distressed. These results support prior international (Mehnert & Koch,

2007; Roth et al., 1998; Trask et al., 2002) and African (Berard et al., 1998; Boermeester & Berard, 1998) research in oncology settings that a large proportion of cancer patients experience varying degrees of distress along the cancer trajectory. Within the Namibian context, a previous study on psychological distress among rural health care clinic attendees in northern Namibia reported 22.6% cases (Haidula et al., 2003). Moreover, in a pooled analysis of the accuracy of the ultra-short screening instruments in cancer settings, Mitchell (2007) found prevalence rates of 18% for depression, 38% for anxiety and 40% for distress. It is further suggested that rates of anxiety and distress are more common than syndromal depression in physical health (Massie, 2004; Stark et al., 2002; Van't Spijker et al., 1997).

Regarding the establishment of a cut-off score for the DT, the current study suggests a cut-off score of 3 for both the Namibian and South African samples. This cut-off score is lower than reported in the literature using the DT. Several studies identified a cut-off score of 5 (Akizuki et al., 2003; Cohen et al., 2002; Hoffman et al., 2004; Roth et al., 1998; Trask et al., 2002), while others have suggested a cut-off score of 4 (Jacobsen et al., 2005; NCCN, 2008; Özalp et al., 2007; Ransom et al., 2006). The AUC suggested that the Sesotho version of the DT has better discriminative accuracy compared to the Oshiwambo version. For this study, the AUC of 0.76 for the South African sample suggests that the Sesotho version of the DT has overall good overall accuracy, while the Namibian version falls within the moderate overall accuracy. Previous research using the HADS and DT reported AUC ranging from 0.63 to 0.89 (Almanza-Muñoz et al., 2008, Gessler et al., 2008; Jacobsen et al., 2005; Özalp et al., 2007; Ransom et al., 2006; Tuinman et al., 2008). This study's results appear to be on par with these prior research studies. Comparatively, it appears that the DT discriminate effectively between cancer patients identified as distressed and not distressed, using the HADS criteria, in both the Namibian and South African settings.

Using the cut-off obtained above (i.e. 3), 52% and 44% of Namibian and South African patients respectively experience high levels of distress. In this respect, there was no significant difference between the Namibian and South African samples. These results

support international research using the DT that approximately half of cancer patients report significant psychological distress (Almanza-Muñoz et al., 2008; Carlson & Bultz, 2003, Jacobson et al., 2005, Mitchell, 2007; Özalp et al., 2007, Roth et al., 1998; Tuinman et al., 2008; Zainal et al., 2007). Similarly, the sensitivity and specificity obtained in this study is comparable to prior international studies (Mitchell, 2007). Furthermore, the PPV and NPV obtained in this study suggest that the DT within both the Namibian and South African samples have a better accuracy of ruling out distress, as opposed to ruling in distress. This implies that the DT are best at ruling out (i.e. identifying patients who are not distressed) with an accuracy of 86%. These results are comparable with international studies using ultra-short screening instruments (Mitchell, 2007). The potential implication of this is that oncology clinicians could further assess patients who scored above the cut-off, and refer them appropriately for further intervention if indicated.

Significant moderate positive correlations were found between the DT and the HADS anxiety subscale, the HADS depression subscale, and the total HADS score for both Namibian and South African samples. No significant differences were found between the nationalities in this regard. The correlations found in this study are similar to research findings within other oncology settings. For example, Özalp et al.'s (2007) study found correlations of 0.447 for anxiety, 0.394 for depression, and 0.446 for the total HADS, while Trask et al., (2002) found 0.416 for anxiety and 0.234 for depression. Akizuki et al. (2003) found a higher correlation of 0.71 between the DT and the HADS total scale. In the study by Zainal et al. (2007), the correlations were 0.7 for anxiety and 0.5 for depression. Another study found that the DT correlated strongly with the total HADS (0.70), depression (0.65) and anxiety (0.65) (p<0.01) (Akizuki et al., 2005, in Özalp 2007). Based on the HADS scores, we conclude that the DT has acceptable criterion validity. The results also further suggest that these aspects of anxiety, depression and distress could be inter-related, but might not be synonymous with each other. Further analysis or studies could possibly explore the weight contribution of anxiety and depression to distress.

The findings of this study suggest that younger South African cancer patients experience more distress, anxiety and depression compared to older patients. Zainal et al. s' (2007) study reported similar correlations. In the same vein Tuinman et al. (2008) as well as Merckeart et al. (2009) found that patients who desired referral for psychosocial support were younger. Other studies, however, found no significant correlations between age and distress (Jacobsen et al., 2005; Ransom et al., 2006; Roth et al., 1998) Potential sources of distress for younger cancer patients are numerous. For example, it has been shown that younger breast cancer patients experience more disruptions to body image, more sexual dysfunctions, greater career limitations and financial distress, more disruptions to daily life owing to cancer treatment, premature menopause, concerns about pregnancy and infertility, isolation, concerns about cancer recurrence, and fears about not surviving to see their children grow up (Avis et al., 2004; Dunn & Steginga, 2000; Fobair et al., 2006; Thewes et al., 2004). It is probable that many of the younger South African cancer patients are also faced with these challenges. This is an important aspect that needs further investigation regarding factors that contribute to distress among younger South African cancer patients.

Time since diagnosis was positively correlated with distress and anxiety for the Namibian sample. Although the time since the cancer diagnosis was verified from the patients' hospital cards/health passports, other variables such as the cancer stage could not be verified as it was often missing from patients' hospital cards. It is possible that the time since diagnosis was associated with more advanced illness, more physical discomfort, uncontrolled or insufficiently controlled pain, and possibly poorer prognosis as these factors have been reported to contribute to distress among cancer patients.

This study further reflects that aspects such as low economic status, low level of social support, unemployment, and burden of cancer treatments are some of the aspects that contribute to distress among cancer patients. The findings reflect concerns and issues that have been reported in the international psycho-oncology literature on the effects of cancer. Thus they highlight that despite potential differences in aspects such as culture and socio-political factors, cervical and breast cancer patients within the southern African

context might face similar psychosocial concerns and challenges as cancer patients elsewhere in the world. The study points out similarities as well as differences between Namibian and South African female cancer patients. Where significant differences exist in relations to distress, anxiety and depression versus demographic variables, South Africans generally tended to score higher compared to their Namibian counterparts.

Of major importance is the fact that many of the patients in this study expressed a need for counseling. Provision of psychosocial care, including various types of counseling, is one of the core aspects of psycho-oncology, and plays a major role in the enhancement of quality of life of cancer patients. Within both the Namibian and South African oncology contexts, it is imperative to explore the nature of counseling and/or psychosocial intervention required, and to identify the various potential role players to provide these interventions. For example, while some cancer patients might be more open to receiving counseling from a religious leader, others might feel more comfortable interacting with a traditional healer, depending on the patient's worldview.

This study highlights that a significant number of breast and cervical cancer patients in Namibia and South Africa experience psychological distress, anxiety and depression. Similarly, many of the patients expressed a need for counseling. Given the challenges of limited resources in these health care settings, the DT (as well as the HADS) could be used as a brief screening measure of distress within these oncology settings. These instruments are brief, easily administered and scored, and have practical appeal. This process of screening would be important in identifying cancer patients with distress and would play a significant role in ensuring that such patients are appropriately screened and referred to appropriate professionals and/or community resources. Screening for distress would be a vital initial step in seeing beyond the "cancer", to seeing the "human side of cancer" and taking further steps to work towards enhancing the quality of life of cancer patients and advocacy for psychosocial care. As Recklitis (2009, p. 789) puts it, "….improving access to care is critical to the ultimate success of screening….Reliable information about rates of emotional distress is essential to advocating for increased services", for cancer patients.

LIMITATIONS OF THE STUDY AND RECOMMENDATIONS FOR FUTURE RESEARCH

The results of this study must be interpreted within the context of its limitations. Psychosocial oncology research in southern Africa is relatively new. As such, not much information exists for comparison purposes. However, previous studies elsewhere in the world have supported the use of screening instruments such as the DT and the HADS. It is worth noting, however, that to the knowledge of the researcher, the translations of the Oshiwambo and Sesotho versions of the DT and the HADS have not yet been validated. Therefore, further research in this area is recommended. Translations of research instruments can be a challenging aspect in the process of research, and meanings of words and concepts may be lost in translation. Hence, to counter this challenge, native speakers who are also professionals in the field of psychology were used in the translation of these DT and HADS versions.

The Namibian data for this study was collected in the northern part of the country at the state hospital, and patients come primarily from rural areas. Similarly, the South African data was collected in Bloemfontein at the state hospital, and many patients come from rural or peri-urban surroundings. Hence, the results can not be generalized to other populations. A larger proportion of the patients come from low socio-economic status, are poorly educated or illiterate, and are often faced with other challenges such as provision of basic needs (e.g., food, housing, unemployment, transportation), which potentially contribute to the distress. The NCCN (2008) guidelines recommend that in addition to the DT, sources of distress must be assessed using the Problem List. This study did not explore this aspect. Similarly, variables such as disease stage and disease burden were not explored. These aspects are important to explore in further studies.

Although this study attempted to ascertain the number of patients who received counseling, the nature of the counseling was not explored. For some patients, counseling could have constituted a variety of "interventions" ranging from a talk with a neighbour to receiving professional counseling. Further studies could explore the nature of

counseling received and whether or not patients found it useful in alleviating their distress.

In light of the findings in this study that the DT has better accuracy in ruling out than ruling in distress, a possibility is to enhance the accuracy of the DT using other short instruments. For example, Mitchell et al. (2009) have recommended the new Emotion Thermometers (ET), which is a combination of five visual-analogue scales in the form of four predictor domains (distress, anxiety, depression, anger) and one outcome domain (need for help). An added advantage of this instrument would be to explore whether or not cancer patients need or want help (regardless of whether or not they have received counseling) and the nature of the help required.

Although it was found in this study that a large proportion of cancer patients experience distress, anxiety and depression, it is important to remember that prevalence levels can not be deduced and ascertained from these findings. To meet that objective, it is important to utilize more in-depth and diagnostic instruments such as the diagnostic interviews.

CONCLUSION

Overall, the findings of the current study suggest that a significant proportion of Oshiwambo-speaking Namibian and Sesotho-speaking South African women with breast or cervical cancer suffer distress, anxiety and depression. The DT correlates moderately with the HADS distress, anxiety and depression. Whereas similarities exist between the Namibian and South African sample, some differences have also been highlighted. Both the DT and HADS could be useful screening for distress in busy and under-staffed oncology settings, and further research within southern African oncology settings is recommended.

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ARTICLE 3

A COMPARISON OF QUALITY OF LIFE BETWEEN OSHIWAMBO-SPEAKING NAMIBIAN AND SESOTHO-SPEAKING SOUTH AFRICAN WOMEN DIAGNOSED WITH BREAST OR CERVICAL CANCER

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A COMPARISON OF QUALITY OF LIFE BETWEEN OSHIWAMBO-SPEAKING NAMIBIAN AND SESOTHO-SPEAKING SOUTH AFRICAN WOMEN DIAGNOSED WITH BREAST OR CERVICAL CANCER

ABSTRACT

Over the last few decades, quality of life has increasingly been recognized as one of the major end-points of both medical treatment and psychosocial interventions in oncology settings. Whereas the evidence regarding the negative impact of psychosocial effects of cancer on dimensions of quality of life has been explored especially in developed countries, such research is minimal within the African context, and especially in southern Africa. To this effect, the major objective of the study was to explore and compare quality of life of Oshiwambo-speaking Namibian and Sesotho-speaking South African women diagnosed with breast or cervical cancer. The study further explored the relationship of quality of life to anxiety, depression and psychological distress. The 26-item WHOQOL, the HADS and DT were used. Results suggest that cancer patients in these countries appear to have comparable quality of life on most domains. However, Namibian patients appear to fare better on psychological quality of life. Negative relationships were found between all domains of QoL for the entire sample in relation to psychological distress, depression and anxiety, supporting international findings. However, the extent of the relationships probably suggests variability with regard to socio-cultural and socio-environmental differences between the Namibian and South African samples. Further research in southern African oncology settings is recommended.

Key words: cancer, quality of life, psychological distress, Namibia, South Africa

INTRODUCTION

The field of psycho-oncology has witnessed an increase in research on quality of life and its measurement (Bottomley, 2002; Osaba, 1994; Semple et al., 2004). Researchers agree that within the sphere of health care and in cancer management, it is no longer sufficient to measure the effectiveness of treatments on survival alone, as both quantity and quality of life are important aspects (Dolbeault et al., 1999; Reig-Ferrer, 2003; Semple et al., 2004). Enhancement of quality of life is viewed as one of the major objectives and end-points of both medical treatments and psychosocial interventions (Bottomley, 2002; Dolbeault et al., 1999; Holland, 2004; Moorey & Greer, 2002; Reig-Ferrer, 2003). Among many factors, emphasis on quality of life is necessitated by the increased number

of people living with cancer as well as by the recognition of the psychological impact of cancer.

Elsewhere in the world, and especially in more developed countries, quality of life of cancer patients has been researched, as evidenced by the growing body of literature. However, within the African continent, and particularly in southern Africa, despite evidence of increasing incidence and prevalence of cancer, such research remains very minimal.

Although quality of life (QoL) and health-related quality of life (HRQoL) are often used synonymously, they refer to different concepts. QoL entails all aspects of patients' wellbeing and may include the impact of living standards and environmental factors, whereas HRQoL refers to aspects that pertain to physical health and medical concerns (i.e. tantamount to subjective health status) (Reig-Ferrer, 2003; Schwartz et al., 2001; Semple et al., 2004). In oncology settings, the concept QoL is more popular than HRQoL (Semple et al., 2004). Therefore, within the context of this article, quality of life refers to the former (i.e. OoL).

Given international literature on quality of life among cancer patients, the paucity of such research in the southern Africa context, and the geo-socio-political and historical similarities between Namibia and South Africa, the primary objective of this study was to explore and compare the quality of life of Oshiwambo-speaking Namibian and Sesotho-speaking South African women diagnosed with breast and cervical cancer. To this effect, the generic version of the WHOQOL instrument was used. The study further explored the relationship between quality of life and anxiety, depression and psychological distress.

LITERATURE REVIEW

DEFINITIONS

There is no single universally accepted definition of the concept "quality of life", as it means different things to different people (Bottomley, 2002; Carr & Higginson, 2001;

Nordstrom & Lubkin, 1990; Reig-Ferrer, 2003; Semple et al., 2004). According to Nordstrom and Lubkin (1990), quality of life varies across the life span. While for young adults it may entail achieving successful and meaningful careers, conversely, for the elderly and chronically ill patients it may entail retaining a sense of independence, safety and security, continued social relationships with family, friends and community, control of pain, and maintenance of activities of daily living (Nordstrom & Lubkin, 1990). Similarly QoL is a dynamic construct whereby an individual's priorities and attitudes towards particular aspects of QoL may change over time through processes such as adaptation, coping or expectations (Carr & Higginson, 2001; Reig-Ferrer, 2003).

A number of conceptual definitions have been proposed by various authors (e.g. Calman, 1984, Dolbeault et al., 1999; Gotay et al., 1992; Schumacher et al., 1991; van Knippenberg & de Haes, 1988). One definition which is commonly referred to and utilized particularly in cross-cultural research, is that provided by the World Health Organization Quality of Life Group (WHOQOL Group, 1995). QoL is conceptualized as an individual's perception of his/her position in life within the cultural context and value system within which he/she lives and in relations to his/her goals, expectations, standards and concerns (WHOQOL Group, 1995). Operationally, it includes a holistic evaluation of various aspects such as physical health, psychological wellbeing, level of independence, social relationships, environmental factors, and spiritual, religious and personal beliefs. This conceptual definition provides a basis for this study.

Despite the lack of consensus regarding the conceptual definition of QoL, researchers agree on at least two aspects, namely multi-dimensionality and subjectivity. QoL is a universal multi-dimensional construct encompassing a broad range of domains of human existence (Bloom et al., 2004; Bottomley, 2002; Osoba, 1994; Reig-Ferrer, 2003). It includes perceptions of both positive and negative aspects of patients' symptoms, including physical, emotional, social and cognitive functions, as well as disease symptoms and/or treatment side effects (Leplege & Hunt, 1997; Osoba, 1994). Therefore, uni-dimensional instruments are not sufficient to adequately measure QoL. It is also observed that QoL is subjective (Bloom et al., 2004; Osoba, 1994; Reig-Ferrer,

2003). In assessing QoL of patients, patients' opinions regarding their own quality of life should be sought, as assessment by observers is likely to be biased by the observers' internal standards (Osoba, 1994; Reig-Ferrer, 2003).

QUALITY OF LIFE IN BREAST CANCER AND CERVICAL CANCER PATIENTS

A diagnosis of cancer and its treatment has been associated with many biopsychosocial effects. These include psychological distress, anxiety, depression, adjustment disorder, symptoms of PTSD, as well as physical symptoms of the disease and treatment side-effects (Amir & Ramati, 2002; Avis et al., 2004: Nosarti et al., 2002; Turner et al., 2005; Zabora et al., 2001).   Many studies have reported associations between cancer, psychological morbidity and various domains of QoL. Notably, effects on the various domains are interrelated and influence each other.

Global Quality of Life

Poorer global QoL has been reported in newly diagnosed cancer patients, particularly following active treatment for cancer. For example, a study by Avis and associates (2005) found that younger breast cancer patients surveyed 4-42 months after diagnosis reported significantly lower global QoL compared to a non-patient sample of younger women. In this study, aches, pain and unhappiness with appearance were reported by more than 70% of women. Similarly, a Norwegian study (Sægrov, 2005) found that cancer patients had poorer global QoL compared to patients who were declared cured. On the contrary, Arndt et al. (2004) reported comparable overall QoL between breast cancer patients (one year post-treatment) and the general population.

There is, however, consensus that long-term breast cancer and cervical cancer survivors in stable conditions experience overall good QoL (Awadalla et al., 2007; Baucom et al., 2006; Leake et al., 2001; Mols et al., 2005; Paskett et al., 2008; Wenzel et al., 2005). Yet many long-term cancer survivors continue to experience problems such as pain and swelling in the arm, conditioned nausea, numbness and sexual difficulties, even years after being disease-free (Kornblith et al., 2003; Mols, 2005; Paskett et al., 2008). In a qualitative multi-ethnic study of women with cervical cancer, Ashing-Giwa et al. (2004)

found moderate to poor quality of life. This is supported by the findings of Leake et al. (2001) that cervical cancer patients report lower quality of life compared to other cancer patients. Similarly, cervical cancer patients report disease- and treatment-related concerns despite being 5-10 years disease-free (Wenzel et al., 2005).

Physical symptoms

Physical symptoms of cancer and the treatment side-effects continue years after completion of cancer treatment and influence physical QoL. Symptoms such as physical pain, swelling of the arm, reduced recreational/physical activities, fatigue and weight gain are common in breast cancer patients (Bloom et al., 2004; Engel et al., 2003; Kornblith et al., 2003; Lehto et al., 2005; Paskett et al., 2008; Sægrov, 2005). Treatment side-effects such as hot flushes, sweat, sleep problems, vaginal dryness have been reported (Paskett et al., 2008). In addition to physical symptoms experienced by other cancer patients, problems such as vaginal bleeding, shortened vaginal cavity, painful sexual intercourse, discharge, premature menopause, and loss of fertility are common in cervical cancer patients (Herzog & Wright, 2007; Vaz et al., 2007). Among cervical cancer patients, physical symptoms of cancer and their treatments most influence QoL (Ashing-Giwa et al., 2004; Vaz et al., 2007). Pain negatively influenced general health, the physical wellbeing, as well as global QoL (Vaz et al., 2007).

Psychological/emotional domain

Many cancer patients experience psychological distress, depression, anxiety, worry, fear of disease progression and recurrence, body image problems, altered sense of femininity and sexuality, and symptoms of post-traumatic stress, and negatively affect the psychological QoL (Amir & Ramati, 2002; Arndt et al., 2004; Baucom et al, 2006; Frick et al., 2007; Lehto et al., 2005; Reich et al, 2008, van den Beuken-van Everdingen et al., 2008). In a German study, breast cancer patients scored worst on emotional functioning, one year post-diagnosis, with nearly 90% of the respondents reporting feelings of depression, irritability, tension and worry (Arndt et al., 2004). Other studies, however, recognize the prevalence of psychological symptoms, but report that psychological factors were not significantly related to global quality of life (Kornblith & Ligibel, 2003;

Paskett et al., 2008). Psychological distress, depression, anxiety and adjustment disorder are the most prominent psychological sequelae of cancer (Iconomou et al., 2004).

Social domain

Social support influences quality of life by influencing adjustment to life events and offers a buffer against stressful life events (Kornblith et al., 2001). It also influences optimism and distress (Trunzo & Pinto, 2003). Low social support is related to lower global QoL (Paskett et al., 2008). According to Vaz et al. (2007), social support contributes to minimizing the impact of gynecological cancer in both the social relationship domain and the psychological domain. Mols et al. (2005) in their review point out that there is strong evidence that social support, as defined by the number of social contacts and amount of social involvement with family and friends, is among the important predictors of QoL in breast cancer survivorship.

Age

There is some evidence that younger breast cancer patients experience lower QoL compared to older patients (Bloom et al, 2004; Parker et al., 2003; Paskett et al., 2008; Kroenke et al., 2004), but report better physical functioning than older patients (Engel et al., 2003). However, Mols et al. (2005) point out that evidence regarding age as a predictor of quality of life is still inconclusive. It has been theorized that younger breast cancer patients are more vulnerable owing to more severe psychosocial effects (Ganz et al, 1998), may view a cancer diagnosis as a greater threat (Vinokur et al, 1990), and may possess fewer coping strategies and resources to manage a life-threatening illness (Wenzel et al., 1999), and receive more aggressive treatment.

Sexual functioning

A study by Bloom et al. (2004) found that five years after diagnosis, many breast cancer patients reported problems with sexual functioning and feeling embarrassed about their bodies. Similar problems relating to sexual functioning and reproductive problems have been reported in cervical cancer (Park et al., 2007; Wenzel et al., 2005) and are strongly

associated with global health status, role functioning, emotional functioning as well as social functioning in women who are disease-free (Park et al., 2007).

In a review of the impact of cervical cancer on quality of life, Herzog and Wright (2007) point out that sexual issues form an integral, albeit somehow neglected, aspect of QoL in women with cervical cancer. In this review, sexual disruptions continue not only owing to cancer treatment, but also because of psychological factors such as altered sense of femininity, body image and the symbolic representation of the uterus and the cervix as signs of womanhood.

Other factors

Other factors such as type of cancer treatment and socioeconomic aspects have also been investigated in relation to quality of life. Results, however, seem to be contradictory. For example, Engel et al. (2003) found that women treated with breast conserving therapy report higher body image scores and quality of life compared to mastectomy patients. Simon and Wardle's (2008) study found that patients with lower socioeconomic status (SES) reported higher anxiety and depression, worse quality of life, and more social difficulties than patients with higher SES two months after cancer diagnosis. However, at 10 months after diagnosis there were no differences.

QUALITY OF LIFE AND CULTURE

Much of the research on quality of life among cancer patients has been carried out in developed countries and in particular among people of European ancestry. In more recent years, interest in cross-cultural and multi-ethnic studies in oncology settings has become evident (e.g. Ashing-Giwa, 2005; Ashing-Giwa et al., 2004: Gotay et al., 2002; Johnson, 1998; Saxena et al., 2002; Saxena, 2001; Shim et al., 2006; Skevington, 2002). Prominent measures of QoL (e.g., the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire) might not be appropriate for use in cancer patients of African ancestry living in southern Africa where the socio-cultural context is different. Given the aims of this study and in relation to international research findings on quality of life among cancer patients, it is of vital importance to take cultural aspects

into account. As Carr and Higginson (2001, p. 1357) put it "while it seems reasonable to assume that there are some aspects of life that are of universal relevance to quality of life, the specific weights that individuals attach to these will differ between and in different cultures".

Culture entails shared language, behaviours, customs, beliefs, and knowledge that provide people with general design for living and interpreting reality. It is central to the conception of health and illness, and affects how people react to a cancer diagnosis, treatment compliance, and adjustment to cancer (Johnson, 1998). Cultural schemata determine a patient's perspective of an illness, reaction to the disease and perception of quality of life (Bullinger et al., 2007). It has been recommended as a point for future cross-cultural research on quality of life that instruments (such as the WHOQOL) be tested and refined (Carr & Higginson, 2001; Bullinger et al., 2007).

A criticism of the traditional paradigm of HRQoL is that it is predominantly individual-centered (Ashing-Giwa, 2005) and does not take cultural and socio-ecological dimensions into consideration. In doing multi-cultural research, Ashing-Giwa (2005) proposes a contextual model of quality of life that takes into account examination at both macro/systemic level and micro/individual level. This model appears to be supportive of the WHOQOL Group's conceptualization of quality of life.

As reflected by Reig-Ferrer (2003, p. 801) "although people from different cultures may differ with regard to the specific basic conditions they have available to them to strive for a good QoL, they do not necessarily differ in their reports of how happy and satisfied they are. That is, a person's subjective perceptions of QoL is not a linear reflection of his/her life conditions".

METHODOLOGY

Settings and procedures

The data was collected in Oshakati (Namibia) and Bloemfontein (South Africa). Oshakati is the largest city and urban center of northern Namibia, and Oshiwambo is the primary native language used. Bloemfontein is the largest metropole of the Free State region of South Africa, and Sesotho is the primary native tongue used.

Study participants in both countries were a convenience sample, recruited from out-patient oncology clinics within public hospitals, namely Oshakati State Hospital (Namibia) and Universitas Academic Hospital (Bloemfontein, South Africa). Inclusion criteria were as follows: a diagnosis of breast or cervical cancer, aged ≥18 years, ability to speak and understand Oshiwambo (Namibia) or Sesotho (South Africa), ability to give written or verbal consent and knowledge of the cancer diagnosis. Patients who were too physically ill (e.g. on stretchers, inpatient), had obvious mental disabilities (e.g. severe mental retardation, not orientated to time, place or person), or were not informed yet of their cancer diagnosis were excluded from the study.

Patients were approached by the researcher or research assistants at the oncology outpatient clinics, the aim of the study was explained and consent obtained. Ethical approval was granted by the Ministry of Health and Social Services (Namibia) and the Ethics Committee of the Faculty of Health Sciences at the University of the Free State (South Africa).

Instruments

The following research instruments were utilized:

*A self-composed *socio-demographic questionnaire* was used to gather information such as age, marital status, socioeconomic status, educational background, time since diagnosis, type of cancer, type of cancer treatment received and usefulness of social support system.

*The 26-item *World Health Organization Quality of Life (WHOQOL-Bref)* (WHOQOL Group, 1996) is a generic self-report measure of quality of life, derived from the 100-item WHOQOL version. Twenty-four (24) of the items yield 4 domains namely: (I.) Physical Health (7 items); (II.) Psychological Health (6 items); (III.) Social Relationships (3 items); and (IV.) Environment (8 items). The remaining two questions each assess general perception of quality of life (General QoL, i.e., item 1 of the WHOQOL-Bref) and satisfaction with health (General Health, i.e., item 2 of the WHOQOL-Bref). The WHOQOL-Bref was developed and piloted in 15 culturally diverse field centers around the world, including Zimbabwe, and has been translated into approximately 20 languages (WHOQOL Group, 1996, 1998). It has been used in research within the African context (Awadalla et al., 2005a; Awadalla et al., 2005b; Mutimura et al., 2008; Ohaeri et al., 2007; Ohaeri et al., 2004; Olusina, & Ohaeri, 2003), other developing countries (Hwang et al., 2003;) as well as in cancer research (Amir & Ramati, 2002; Awadalla et al., 2007; Guernelli Nucci & Martins do Valle, 2006; Mohan et al., 2007; Mohan et al., 2006). To the knowledge of the researcher, no psychometric properties of the WHOQOL-Bref have been reported in Namibian or South Africa. Items on the WHOQOL-Bref are scored on a 5-point scale, and higher scores indicate better quality of life. For the purpose of this study, raw domain scores were used in the analysis. Two methods of converting domain raw scores to transformed scores are suggested in the manual (WHOQOL Group, 1996). For the purpose of comparing performance on domains, raw scores were converted to transformed scores ranging on a 0-100 scale. This format was chosen for ease of interpretation. Also for the purpose of this study, the total score of items 1-26 was calculated and termed "Global Quality of Life" (Global QoL). No transformed scores conversion for global QoL are available.

*The *Distress Thermometer (DT)*(Roth et al., 1998) is the most well-known single-item visual analogue screening instrument of global psychological distress for use in oncology settings (Mitchell, 2007; NCCN, 2008), and has in recent years gained international popularity. It compares favourably with longer well-established screening measures of distress (Akizuki et al., 2003; Cohen et al., 2002; Gessler et al., 2008; Jacobsen et al., 2005; Özalp et al., 2007; Roth et al., 1998).

*The *Hospital Anxiety and Depression Scale (HADS)* (Zigmond & Snaith, 1983) is an internationally acclaimed instrument with over 33 language translations (Bedford et al., 1997; Herrmann, 1997). It is a 14-item measurement instruments for anxiety and depression, and the HADS total scale is used as a measure of psychological distress (Chaturvedi, 1991; Hopwood et al., 1991; Ibbotson et al., 1994; Johnston et al., 2000; Razavi et al., 1990). The HADS is often used a benchmark in validating other screening measures of psychological distress (Carlson & Bultz, 2003).

All the research instruments were translated into Oshiwambo and Sesotho by means of backward-forward translation procedure through the Universities of Namibia and the Free States' departments of psychology.

Statistical analysis

Descriptive statistics were utilized to characterize the sample with regard to demographic characteristics. Spearman correlations were employed to explore the relationship between domains of quality of life, as well as the relationship between QoL, on the one hand, and psychological morbidity and patient characteristics of a continuous nature, on the other. Kruskal-Wallis tests were carried out to explore differences between scores of Namibian and South African patients. Statistical significance was tested using two-tailed p-value (5% level) and 95% confidence interval.

RESULTS AND DISCUSSION

Socio-demographic characteristics

Table 1 shows the socio-demographic characteristics of the study sample. Of the total sample N=229, n=103 were Namibians and n=126 were South Africans. The Namibian sample was significantly older (mean= 56.77; S.D.=14.27; range: 24-88) than the South African sample (mean: 52.21; S.D.=12.56; range: 25-78), [t(227)=2.57, p=0.0109]. The mean time since cancer diagnosis (in months) was 31.55 (S.D.= 32.80; range: 0-166) for the Namibian sample and 12.60 (S.D.=12.65; range: 1-72) for the South African sample. Time since diagnosis was positively skewed for both the Namibian and South African

sample, yielding medians of 20.00 and 7.50 respectively. Kruskal-Wallis test revealed a significant difference in the median time since cancer diagnosis (p<0.0001), with the South African patients being more recently diagnosed.

Table 1: Socio-demographic characteristics

Variables	Number of patients (valid %)		Significance
	Namibian (N=103)	South African (N=126)	
Age in years (mean ± S.D.)	56.77 ± 14.27	52.21 ± 12.56	p=0.0109
Months since diagnosis (mean ± S.D.)	31.55 ± 32.80 median=20.00	12.60 ± 12.65 median=7.50	p<0.0001
Type of cancer			p=0.3488
Breast cancer	50 (48.5)	69 (54.8)	
Cervical cancer	53 (51.5)	57 (45.2)	
Marital status			p=0.0102
Never married	30 (29.7)	25 (22.1)	
Married	32 (31.7)	44 (38.9)	
Divorced	6 (5.9)	7 (6.2)	
Separated	1 (1.0)	13 (11.5)	
Widowed	32 (31.7)	24 (21.2)	
No information	2	13	
Employment status			p=0.0010
Employed	16 (15.5)	34 (27.0)	
Unemployed	41 (39.8)	23 (18.3)	
Retired	5 (4.9)	12 (9.5)	
Full-time homemaker	4 (3.9)	9 (7.1)	
On leave from employment	0 (0)	6 (4.8)	
On disability grant/benefits	5 (4.9)	11 (8.7)	
Pensioner	32 (31.1)	31 (24.6)	
Socio-economic status			p=1.0000
Low income	69 (70.4)	87 (69.0)	
Low-to-middle income	16 (16.3)	21 (16.7)	
Middle income	12 (12.2)	16 (12.7)	
Middle-to-high income	1 (1.0)	2 (1.6)	
High income	0 (0)	0 (0)	
No information	5	0	
Highest education			p=0.2849
Little or no formal education	65 (64.4)	77 (61.6)	
Some secondary education	23 (22.8)	21 (16.8)	
High school	8 (7.9)	14 (11.2)	
Higher education	5 (5)	13 (10.4)	
No information	2	1	
Type of cancer treatment received			p<0.0001
Surgery	19 (18.4)	11 (8.7)	
Chemotherapy	7 (6.8)	4 (3.2)	
Radiation	15 (14.6)	73 (57.9)	
Surgery & chemotherapy	16 (15.5)	3 (2.4)	
Surgery & radiation	12 (11.7)	5 (4.0)	
Chemotherapy & radiation	15 (14.6)	19 (15.1)	
Surgery, chemotherapy & radiation	14 (13.6)	11 (8.7)	
No cancer treatment received yet	5 (4.9)	0 (0)	
Usefulness of social support			p<0.0001
Low usefulness	34 (33.0)	11 (8.7)	
Moderate usefulness	30 (29.1)	54 (42.9)	
High usefulness	39 (37.9)	61 (48.4)	

Patients in this study were primarily from low socio-economic status, had little or no formal education, and few were employed. The majority (55%) of the Namibian women

had received combinations of cancer treatments (i.e. surgery, radiation therapy, chemotherapy), whereas the South African women received primarily radiation (58%).

Reliability of the WHOQOL-Bref

Table 2 shows the reliability coefficients. As an entire scale, the WHOQOL-Bref appears to have overall good reliability, as indicated by Cronbach alphas of 0.87 and 0.92 for the Namibian and South African samples respectively. Although the alphas were high and acceptable for the physical, psychological and environment domains, they were lower for the social relationship domain, most specifically for the Namibian sample.

Lower alphas were expected for the social domain, given that this domain consists of 3 items. However, for the Namibian sample, alpha for the social domain suggests that items within this domain lack internal consistency, hence results must be interpreted within this caveat. The alpha increases significantly if item 21 ("How satisfied are you with your sex life?") is deleted. With the exception of the alpha for the social relationship domain for the Namibian sample, the obtained alphas are comparable to other studies using the WHOQOL-Bref (Amir & Ramati, 2002; WHOQOL Group, 1998).

Table 2: Cronbach alpha coefficients for the WHOQOL-Bref obtained for the Namibian and South African samples

Domains	Namibian	South African
I. Physical health	0.8007	0.7917
II. Psychological health	0.7524	0.7243
III. Social relationships	0.3278	0.6577
IV. Environment	0.6818	0.7062
Global Quality of Life (items 1-26)	0.8713	0.9150

Significant moderate to high positive correlations were found between all domains of the WHOQOL-Bref for the Namibian sample. The highest correlations were between the environment domain on the one hand, and psychological health ($r=0.54$, $p \leq 0.001$) and physical health ($r=0.49$, $p \leq 0.001$) domain on the other hand. Similarly, moderate to high positive correlations were found between all domains for the South African sample. The highest correlations were found between the environment domain on the one hand and social relationships ($r=0.64$, $p \leq 0.001$) and physical health ($r=0.58$, $p \leq 0.001$) domains on

the other hand. The only significant difference in correlations between the Namibian (r=0.38, p≤0.001) and South African(r=0.64, p≤0.001) samples was found between social relationships and environment (p=0.0055) domains. The inter-domain correlations for Namibian and South Africa are shown in Tables 3a and 3b respectively. For both nationalities, global QoL correlated strongly with general QoL, general health, and all WHOQOL-Bref domains, with South African data yielding slightly stronger, albeit not significant, correlations.

Table 3a: Correlations between domains: Namibia

	General QoL	*General Health*	*Physical*	*Psychological*	*Social*	*Environment*	*Global QoL*
General QoL	1	0.49***	0.18	0.28**	0.30**	0.26**	0.42***
General Health		1	0.49***	0.28**	0.34***	0.35***	0.58***
Physical			1	0.37***	0.27**	0.49***	0.73***
Psychological				1	0.33***	0.54***	0.74***
Social					1	0.38***	0.60***
Environment						1	0.83***
Global QoL							1

Notes:
General QoL consists of item 1 of the WHOQOL-Bref
General Health consists of item 2 of the WHOQOL-Bref
Global QoL consists of items 1-26 of the WHOQOL-Bref

** Significant at p≤0.01
*** Significant at p≤0.001

Table 3b: Correlations between domains: South Africa

	General QoL	*General Health*	*Physical*	*Psychological*	*Social*	*Environment*	*Global QoL*
General QoL	1	0.63***	0.24**	0.18	0.52***	0.44***	0.50***
General Health		1	0.39***	0.44***	0.55***	0.51***	0.65***
Physical			1	0.40***	0.39***	0.58***	0.71***
Psychological				1	0.37***	0.49***	0.71***
Social					1	0.64***	0.76***
Environment						1	0.87***
Global QoL							1

Notes:
General QoL consists of item 1 of the WHOQOL-Bref
General Health consists of item 2 of the WHOQOL-Bref
Global QoL consists of items 1-26 of the WHOQOL-Bref

** Significant at p≤0.01
*** Significant at p≤0.001

Results on the WHOQOL-Bref

Moderate scores for general perception of quality of life (General QoL) were obtained for both the Namibian (mean, 3.53; SD., 0.87; median, 4) and South African (mean, 3.45; SD., 0.87; median, 3) samples. Similarly, mean scores for satisfaction with health (i.e., General Health) were 3.46 (S.D., 1.27; median, 4) and 3.50 (S.D., 0.80; median, 4) respectively. Kruskal-Wallis tests revealed no significant differences between Namibian and South African patients with regard to general QoL and general health (see Table 4).

Table 4: Performance on the WHOQOL-Bref

	Nationality	*Mean (SD)*	*Range*	*Median*	*Comparison of the medians*
General QoL	Namibian	3.53 (0.87)	1-5	4	p=0.3722
	South African	3.45 (0.87)	1-5	3	
General Health	Namibian	3.46 (1.13)	1-5	4	p=0.6677
	South African	3.50 (0.79)	1-5	4	
I. Physical	Namibian	22.89 (3.66)	15-33	22	p=0.4357
	South African	22.28 (2.81)	14-28	22	
II. Psychological	Namibian	22.09 (3.45)	11-28	22	p<0.0001
	South African	19.26 (3.41)	11-30	20	
III. Social	Namibian	10.91 (2.28)	3-15	11	p=0.1207
	South African	10.46 (2.45)	4-15	11	
IV. Environment	Namibian	26.33 (4.78)	14-40	26	p=0.1699
	South African	26.91 (4.25)	15-40	27.5	
Global QoL	Namibian	89.21 (11.46)	65-116	89	p=0.0474
	South African	85.87 (11.36)	54-122	88	

There were no significant differences between South African and Namibian patients on all the domains, except for the psychological domain. On this domain, Namibian patients obtained significantly higher scores (mean, 22.09; S.D., 3.45; median, 22) than South African patients (mean, 19.26; S.D., 3.41; median, 20) (p<0.0001). Although there was a slight difference on global QoL (Namibia: mean, 89.21; S.D., 11.46; median, 89 vs. South African: mean, 85.87; S.D., 11.36; median, 88) the difference barely met significance level (see Table 4).

These results suggest that Namibian and South African cancer patients in this study appear to have a comparable quality of life on most of the WHOQOL-Bref dimensions.

However, the Namibian patients appear to fare better psychologically. A potential explanation for the difference is that South African cancer patients in this study sample were found to have nearly twice as much depression compared to Namibian patients (see Article 2 of this dissertation). Additionally, WHOQOL-Bref items for the psychological domain primarily assess symptoms of depression (e.g., anhedonia/enjoyment of life, meaningfulness of life, concentration), as opposed to symptoms of other psychological disturbances (e.g. anxiety, PTSD etc) that are associated with cancer. Hence, this difference probably is a reflection of the higher presence of depression among Sesotho-speaking South African cancer patients, in comparison to their Oshiwambo-speaking Namibian counterparts.

Comparison between domain scores

In order the compare domain scores of the WHOQOL-Bref with each other, raw scores were converted to transformed scores on a 0-100 scale. This transformation was necessitated by the fact that the four domains contain a different number of items.

For the Namibian sample, the highest scores were obtained on the psychological (mean, 67.10; SD., 14.62; median, 69) and social relationships (mean, 66.03; S.D., 19.35; median, 69) domains, followed by the physical health (mean, 56.98, S.D.,13.02; median, 56) and environment domains (mean, 56.19; S.D., 15.00; median, 56). Significant differences were found between these scores (p<0.0001). For the South African sample, patients scored highest on the social relationship (mean, 62.65; S.D., 20.72; median, 69) domain, followed by the environment (mean, 60.85; S.D., 13.57; median, 63), psychological (mean, 55.28; S.D., 14.65; median, 56) and physical (mean, 54.90; S.D., 10.41; median, 56) domains. Statistical significant differences were also found between these domain scores (p<0.0001).

In comparing the Namibian and South African cancer patients on the domains (using transformed scores), statistically significant differences were found only on the psychological health domain, with Namibian patients obtaining a higher score. These results are depicted in Table 5.

Table 5: Comparison of the domain scores

Domains	Namibian		South African		Comparison of transformed scores
	Mean (SD)	*Median*	*Mean (SD)*	*Median*	
I. Physical health	56.98 (13.02)	56	54.90 (10.41)	56	p=0.4464
II. Psychological health	67.10 (14.62)	69	55.28 (14.65)	56	p<0.0001
III. Social relationships	66.03 (19.35)	69	62.65 (20.72)	69	p=0.1207
IV. Environment	56.19 (15.00)	56	60.85 (13.57)	63	p=0.2195

In the absence of quality of life data of healthy individuals in both Namibia and South Africa, to provide a comparative basis, it remains a challenge to describe whether or not cancer patients in these two countries have a good or poor quality of life. However, using the 0-100 scale (with 50 as middle score) as a yard-stick against which to compare obtained scores, it is probable that quality of life domain scores fall within the average range. This would suggest moderate quality of life for both Namibian and South African patients. Moreover, when comparing results of the current study with an Israeli study (Amir & Ramati, 2002) of long-term breast cancer survivors, social relationship domain scores are comparable. Israeli cancer patients appear to have better physical health and scored higher on the environment domain. Israelis scores on the psychological domain were in-between the South African and Namibian scores. On the contrary, both South African and Namibian patients in the current study show higher quality of life on all WHOQOL-Bref domains compared to lung-cancer patients in an Indian study (Mohan et al., 2006).

An interesting observation is that physical health scores for both Namibian and South African was significantly lower compared to scores on the other domains. This suggests poorer physical quality of life for the entire sample. A probable explanation is the presence of physical discomfort, pain, functional limitations and impairments, which persist even years after completion of cancer treatments (Bloom et al., 2004; Park et al., 2007; Wenzel et al., 2005). This could be particularly so in the context that many patients in less developed countries are diagnosed at an advanced stage. Moreover, the patients in the study were generally more recently diagnosed and probably receiving more aggressive treatment. This could also be a reflection of the effect of disease and

treatment-related side-effects, as well as aspects relating to healthcare delivery factors in both countries.

The practical applicability of the WHOQOL-Bref is that it is much shorter than its 100-item predecessor, and would allow clinicians to assess and monitor changes on multiple domains of quality of life of cancer patients across the course of treatment. It could be particularly useful in southern African public healthcare settings that are under-staffed and under-resourced, and where the use of lengthy and more intensive assessment instruments are neither practical nor feasible. An added potential benefit of the use of the WHOQOL-Bref in oncology setting is to assess which aspects of QoL have been affected most severely, and to make appropriate referrals for intervention.

Correlation between quality of life, distress, anxiety and depression

Table 6a shows the correlations between QoL, anxiety, depression and psychological distress. For both the Namibian and the South African data, negative correlations were found between all aspects of QoL and anxiety, depression and psychological distress for the entire study sample. For Namibian cancer patients, moderate and significant negative correlations were found between global QoL and HADS anxiety ($r = -0.33$; $p \leq 0.001$), HADS depression ($r = -0.43$, $p \leq 0.001$), and with psychological distress as assessed by both the HADS ($r = -0.41$; $p \leq 0.001$) and the DT ($r = -0.28$; $p < 0.01$). Of all the WHOQOL-Bref domains, the psychological health domain correlated most strongly with HADS depression ($r = -0.50$; $p \leq 0.001$), psychological distress ($r = -0.44$; $p \leq 0.001$) and anxiety ($r = -0.34$; $p \leq 0.001$).

The South African data yielded moderate to strong and significant negative correlations between global QoL and HADS anxiety ($r = -0.58$; $p \leq 0.001$), HADS depression ($r = -0.63$, $p \leq 0.001$) and psychological distress as assessed by both the HADS ($r = -0.62$; $p \leq 0.001$) and the DT ($r = -0.43$; $p < 0.001$). Three of the domains yielded significant strong negative correlations with HADS anxiety, depression and distress (ranging from -0.50 to -0.58), while moderate correlations were found for the physical health domain

(ranging from -0.31 to -0.38). The DT yielded significant low to moderate negative correlations with all domains as well as with global distress.

Table 6a: Correlations between QoL, the DT and HADS for the Namibian and South Africa samples

Domains/Aspects	Nationality	DT	HADS Anxiety	HADS Depression	HADS Total
General QoL	Namibian South African	-0.27** -0.32***	-0.34*** -0.41***	-0.26** -0.42***	-0.35*** -0.42***
General Health	Namibian South African	-0.25* -0.22*	-0.30** -0.47***	-0.28** -0.41***	-0.33*** -0.46***
I. Physical	Namibian South African	-0.22* -0.24**	-0.13 -0.31***	-0.22* -0.38***	-0.16 -0.35***
II. Psychological	Namibian South African	-0.07 -0.25**	-0.34*** -0.50***	-0.50*** -0.51***	-0.44*** -0.54***
III. Social	Namibian South African	-0.24* -0.38***	-0.24* -0.51***	-0.16 -0.58***	-0.21* -0.55***
IV. Environment	Namibian South African	-0.22* -0.40***	-0.21* -0.52***	-0.31** -0.52***	-0.29** -0.53***
Global QoL	Namibian South African	-0.28** -0.43***	-0.33*** -0.58***	-0.43*** -0.63***	-0.41*** -0.62***
Notes: General QoL consists of item 1 of the WHOQOL-Bref General Health consists of item 2 of the WHOQOL-Bref Global QoL consists of items 1-26 of the WHOQOL-Bref * Significant at p≤0.05 ** Significant at p≤0.01 *** Significant at p≤0.001					

Comparing the Namibian and South African results, there were no significant differences between the majority of the correlations between aspects of quality of life, distress, anxiety and depression. This is particularly the case for correlations involving dimensions assessed with single items (i.e., DT, general QoL, and general health). As shown in Table 6b, the major significant differences were found between the correlations between global QoL and HADS anxiety ($p = 0.0191$), depression ($p = 0.0389$) and distress ($p = 0.0248$). Significant differences were also found between the social relationship domain and, on the other hand, HADS anxiety ($p=0.0200$), depression ($p=0.0002$)) and distress ($p=0.0026$). Differences were also found in the correlations between the environment domain and, anxiety ($p= 0.0086$) and distress ($p= 0.0308$) as

measured by the HADS. Where significant differences exist in the correlations, the correlations for the South African sample were stronger than for the Namibian sample.

Table 6b: Comparison of the correlations between quality of life, distress, anxiety, and depression: Namibia vs. South Africa (i.e., p-values)

Domains/Aspects	DT	HADS Anxiety	HADS Depression	HADS Total
General QoL	0.7090	0.5130	0.1700	0.5150
General Health	0.8080	0.1470	0.3060	0.2650
I. Physical	0.9280	0.1550	0.1920	0.1310
II. Psychological	0.1720	0.1570	0.9040	0.3560
III. Social	0.2500	0.0200 (S)	0.0002 (S)	0.0026 (S)
IV. Environment	0.1460	0.0086 (S)	0.0620	0.0308 (S)
Global QoL	0.1950	0.0191(S)	0.0389(S)	0.0248(S)
Notes: General QoL consists of item 1 of the WHOQOL-Bref General Health consists of item 2 of the WHOQOL-Bref Global QoL consists of items 1-26 of the WHOQOL-Bref *(S) denotes significance at p≤0.05*				

These findings support and confirm previous studies in oncology settings regarding the inverse relationship between quality of life, anxiety, depression and psychological distress (Frick et al., 2007; Mystakidou et al., 2005; Reich et al., 2008) Global QoL, which comprises variable dimensions of QoL, correlated moderately to highly with anxiety, depression and psychological distress for the entire sample. This suggests that cancer patients in this study who were more anxious, depressed, and had higher levels of psychological distress, had lower global quality of life.

However, psychological morbidity affected global quality of life differently for Namibian and South African patients. For example, for South African patients, total HADS psychological distress accounted for 38% (r = -0.62; r^2 = 0.3844) of the global QoL variance, whereas for the Namibian patients it was 17% (r = -0.41; r^2 = 0.1681). Similarly, depression accounted for 34% (r = -0.58; r^2 = 0.3364) of the social relationship variance for South African patients and only 3% (r = -0.16; r^2 = 0.0.0256) for Namibian patients, an almost ten-fold difference. In the same vein, anxiety accounted for 27% (r = -0.52; r^2 = 0.2704) of the environment variance for South African patients and only 4% (r = -0.21; r^2 = 0.0441) for the Namibians. These findings reflect differences with regard to the relative contribution of distress, anxiety and depression on global QoL, social relationship and environmental factors. As in the cross-cultural study by Shim et al.

(2006), results of this study suggest that the relative contribution of these factors to QoL might be cultural-specific, or a reflection of differences in socioeconomic-environmental factors in Namibia and South Africa.

As expected, the psychological domain correlated highly with anxiety, depression as well as with psychological distress. This suggests that patients with higher depression, distress and anxiety reported lower psychological quality of life. Mystakidou et al. (2005), for example, found inverse correlations as high as 0.75 between emotional quality of life and psychological distress. The results of this study are supportive of prior research in this regard (Frick et al., 2007; Shim et al., 2002).

These findings further suggest that Namibian and South African cancer patients in this study who had lower social relationships, environmental health and physical health show more anxiety, depression and psychological distress. This is particularly evident with the South African patients where all the correlations were significant.

Relationship between quality of life and socio-demographic variables

The following socio-demographic variables were explored: age, time since diagnosis, cancer type and social support. Low to moderate negative correlations were obtained between age and all the dimensions of the WHOQOL-Bref, for the Namibian cancer patients. However, only the physical domain (r= -0.27), the psychological domain (r= -0.28), and global QoL (r= -0.25) reached statistical significance. This suggests that younger Namibian cancer patients appear to have better physical, psychological and global QoL compared to older patients. On the contrary, for the South African sample all correlations were in the positive direction. However, statistical significance was only reached for the 1-item general QoL (r= 0.28) and general health (r= 0.26). This suggests that there are no differences between older and younger South African patients with regards to domains of quality of life assessed with multi-items instrument. The differences between the correlations for the Namibian and South African samples were statistically different for general QoL (p=0.0244), general health (p=0.0018), physical health (p=0.0123), and psychological health (p=0.0048) (see Table 7).

Table 7: Comparison of correlations between quality of life and age & time since diagnosis

	Nationality	Age	p-value	Time since diagnosis	p-value
General QoL	Namibian	-0.02	0.0244 (S)	-0.24*	0.1260
	South African	0.28**		-0.04	
General Health	Namibian	-0.15	0.0018 (S)	-0.04	0.7300
	South African	0.26**		-0.09	
I. Physical	Namibian	-0.27**	0.0123 (S)	-0.14	0.1360
	South African	0.06		0.06	
II. Psychological	Namibian	-0.28**	0.0048 (S)	-0.20*	0.1130
	South African	0.10		0.01	
III. Social	Namibian	-0.10	0.0540	-0.12	0.3000
	South African	0.16		0.02	
IV. Environment	Namibian	-0.10	0.1600	-0.20*	0.0649
	South African	0.09		0.05	
Global QoL	Namibian	-0.25*	0.0018 (S)	-0.22*	0.0767
	South African	0.17		0.02	
Note:					
* significant at p≤0.05					
(S) denotes significance at p≤0.05					

Evidence regarding age as a predictor of global QoL appears to be inconclusive (Mols et al., 2005). While some studies suggest that younger cancer patients report better global QoL compared to older patients (Turner et al., 2005), some studies report the contrary (Arndt et al., 2004; Lehto et al., 2005). This study suggests that younger Namibian patients report better global QoL compared to older patients. For the South African sample, there is no difference. With regard to physical health, studies generally suggest that younger patients fare better (Arndt et al., 2004; Engel et al., 2003) compared to older patients. A possible explanation is that older people generally have poorer health and possibly other concomitant physical impairments. The Namibian data appears to support previous findings in this regard, while the South African data supports research findings that did not find any relationship (Parker et al., 2003). As with global QoL, there doesn't appear to be consensus regarding psychological quality of life. For example, Parker and associates (2003) as well as Arndt et al., (2004) found a positive relationship between age and psychological quality of life, while Turner et al. (2005) found that younger cancer

patients fared better than older patients. The Namibian data support the findings of Turner et al. (2005).

There were no significant correlations between the time since diagnosis and quality of life aspects for the South African sample. However, for the Namibian sample, significant low negative correlations were found for general QoL (r= -0.24), psychological domain (r= -0.20), environment domain (r= -0.20 and global QoL (r= -0.22), suggesting that the more recently diagnosed Namibian patients fared better on these dimensions compared to patients more distantly diagnosed. This is contrary to Cimprich et al.'s (2002) findings that more recently diagnosed breast cancer patients had poorer overall quality of life and psychological wellbeing. Moreover, several studies did not find any relationship (Ashing-Giwa et al., 1999; Ganz et al., 2002; Parker at al., 2003). In this regard, Mols et al. (2005) suggest that evidence regarding time since diagnosis is inconclusive. Despite the differences in correlations between the two nationalities, the differences between all the correlations were not statistically significant (see Table 7).

With reference to cancer type, there were no significant differences between Namibian and South African cervical cancer patients, except on the psychological domain, on which the Namibian patients obtained a higher median (p<0.0001). For breast cancer patients, Namibians obtained significantly higher scores on general QoL (p=0.0264), general health (p=0.0286), the psychological domain (p<0.0001) and social relationship domain (p=0.0005).

With reference to social support, there were no significant differences between Namibian and South Africans who rated their social support as high. However, Namibian patients who had a moderate level of social support reported significantly higher psychological health (p<0.0001). In the same vein, Namibians with low social support obtained significantly higher scores on the psychological (p<0.0001), social relationship (p=0.0005), and environment (p=0.0427) domains as well as general (p=0.001) and global QoL (p=0.0005). This suggests that for Namibian and South African patients with higher levels of social support, there were no differences in quality of life and social

support. However, South African patients with moderate to low social support fared worse than their Namibian counterparts. It is, however, important to interpret this in light of the data that a larger proportion of South African patients rated their social support system as highly useful, compared to Namibian patients.

LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

Results of this study must be viewed in light of its limitations. Perhaps one of the major limitations of this study is the lack of QoL data within the region. Such data for the general healthy population, for other prominent illnesses such as HIV/AIDS, and for other chronic and life-threatening diseases would have been important to provide a comparative basis. In the absence of such data, the current research has sought to provide descriptive data on quality of life among Oshiwambo-speaking Namibian and Sesotho-speaking South African cancer patient with breast and cervical cancer. Future studies in the region could investigate the impact of cancer on quality of life of patients, in comparison to healthy individuals as well as patients with other prominent and/or life-threatening diseases within the region, such as the studies by Akvardar et al. (2006) and Awadalla et al. (2007).

Quality of life is a dynamic concept and differs across cultural and social settings. Additionally, it has been suggested that the importance of different aspects of QoL differ at various stages of the life-span as well as in different socio-cultural settings. For example Hwang et al. (2003) in their study of older Taiwanese community-dwellers, found that many did not respond to the items 21 and 18 [(i.e., "How satisfied are you with your sex life?", and "How satisfied are you with your capacity to work?")], as they were probably not applicable or considered to be of major importance to the participants. Hence they suggest that these items might need to be modified. Given that a number of the patients in this study were older patients, might be widowed and without partners, or possibly have ceased having sexual intimacy owing to probable advanced disease, it might be important to modify such questions also within the African context. This is particularly a challenge, given that in many African settings it might be considered rude and disrespectful, for example to inquire about the sexuality of older people. An

alternative approach to investigating QoL is to explore what facets of quality of life are important to cancer patients at various stages of the life span, and in different socio-cultural settings. A potential starting point might be qualitative investigation of QoL among cancer patients.

In light of the findings in this study that physical QoL was low in the sample, it would be essential to investigate aspects such as the stage of cancer as well as accompanying medical and treatment side-effects, and their relative contribution to global QoL.

By its design, this study was explorative in nature and has utilized a limited sample size. Since the investigation of quality of life in southern African oncology settings is relatively novel, further research, using larger multi-ethnic and multi-cultural samples, is recommended. This will not only enable generalization of results, but also provide a foundation for potential cross-cultural comparison, to reflect the vast diversity of socio-cultural heritage within the region.

CONCLUSION

The primary aim of this study was to compare Oshiwambo-speaking Namibian and Sesotho-speaking South African women living with breast and cervical cancer on quality of life. Cancer patients in these nationalities did not differ on most of the domains of quality of life and on global QoL. However, South African patients appear to have lower psychological quality of life in comparison to their Namibian counterparts. Additionally, global QoL as well as all the four domains of QOL were negatively correlated with depression, anxiety and psychological distress among cancer patients in both countries. These findings support international research regarding the negative impact of cancer on the psychosocial wellbeing and quality of life of cancer patients. Where differences exist regarding the extent of the impact of psychosocial factors on QoL, it is probably a reflection of differences in socio-cultural and socio-environmental variability in these two countries. Nonetheless, overall, the findings of this study highlight the plight of cancer patients within our region.

The practical implication for clinicians is that quality of life of our cancer patients needs to be assessed and monitored. This would be a vital step in working towards the recognition of the importance of quality of life and its enhancement, as well as the recognizing the "human" part of living with cancer. Owing to its brevity, ease of administration and scoring, the WHOQOL-Bref has practical appeal, and could be an important research and clinical instrument within southern African healthcare settings. Hence further research on this instrument within the sub-region is recommended.

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ARTICLE 4

A COMPARISON OF SELF-EFFICACY FOR COPING BETWEEN OSHIWAMBO-SPEAKING NAMIBIAN AND SESOTHO-SPEAKING SOUTH AFRICAN WOMEN DIAGNOSED WITH BREAST OR CERVICAL CANCER

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ABSTRACT

Objectives: Perceived self-efficacy has been postulated as an important mediating factor in coping with cancer. The major objective of the study was to explore and compare self-efficacy for coping of Oshiwambo-speaking Namibian and Sesotho-speaking South African cancer patients. The study also explored the relationship between self-efficacy and anxiety, depression, psychological distress as well as quality of life. *Materials and Methods*: Participants were a convenience sample of 227 patients with histologyically confirmed breast- and cervical cancer. The Cancer Behavior Inventory (CBI), 26-item World Health Organization Quality of Life (WHOQOL-Bref), Distress Thermometer (DT), the Hospital Anxiety and Depression Scale (HADS) were used. *Results*: Results suggest overall high self-efficacy, with Namibian patients obtaining significantly higher scores than South African patients. Negative correlations were found between self-efficacy and psychological distress and South African data yielded significantly stronger correlations. Correlations with quality of life were positive and comparable for the two groups. *Conclusion*: Findings of the study confirm prior research. The CBI could have both research and clinical utility and further research in southern African oncology settings is recommended.

Key words: cancer, self-efficacy, coping, psychological distress, quality of life, Namibia, South Africa

INTRODUCTION

Cancer remains one of the most feared illnesses (Holland, 2001). A diagnosis of cancer has been associated with negative psychosocial effects, and many cancer patients suffer significant distress even years after diagnosis (Carlson & Bultz, 2003; Zabora et al., 2001). By its nature of being chronic and potentially life-threatening, a diagnosis of cancer is a stressor and requires cancer patients to cope and adjust to the various challenges associated with cancer. In this regard, self-efficacy, proposed by Bandura in the 1970s, has been suggested as one of the mediating factors in coping with cancer. Despite these findings, from developed countries in particular, this aspect has not been researched within the southern African context. Against this background, the present study aimed at exploring self-efficacy for coping by women with breast and cervical cancer in two southern African countries.

LITERATURE REVIEW

Coping with cancer

Cancer is a chronic and life-threatening illness, and many cancer patients experience it as frightening (Ryan et al., 2005). Research suggests that up to half of all cancer patients suffer significant psychological difficulties, including emotional distress, depression, anxiety, adjustment disorder, somatization, post-traumatic stress disorder and sexual dysfunctions (Amir & Ramati, 2002; Ashing-Giwa et al., 2004; Avis et al., 2004; Derogatis et al., 1983; Johnson et al., 2009; Zabora et al., 2001). Cancer and its treatment are associated with pain as well as with physical and functional limitations. Additionally, cancer patients might experience added psychosocial difficulties (e.g., at work, home, child-rearing), and might require re-alignment of social roles. Hence a diagnosis of cancer requires a patient to mount resources in order to manage and cope with cancer-related stressors and psychological distress, using a variety of coping mechanisms (Folkman & Greer, 2000; Merluzzi & Martinez Sanchez, 1997; Moorey et al., 2003; Moorey & Greer, 2002).

One conceptualization of stress and coping that has frequently been used in research relating to chronic and life-threatening illnesses, including cancer, is based on the works of Lazarus and Folkman (Folkman & Greer, 2000; Frank & Roesch, 2006; Hobfoll et al., 1998; Lazarus & Folkman, 1984). According to Lazarus and Folkman (1984), coping entails employing cognitive and behavioural efforts to manage internal and external demands that are appraised as stressful, using two primary categories of coping, namely emotion- and problem-focused strategies. These authors proposed that appraisal, an individual's perception or interpretation of a stressful event (such as a diagnosis of cancer), determines to some degree how such an individual copes with the event. One mediating factor and determinant of coping outcomes that has in recent years received attention is self-efficacy for coping with cancer (Merluzzi et al., 2001).

Self-efficacy defined

According to Bandura (1994; 2003), perceived self-efficacy, an integral part of Bandura's Social Learning Theory (1977), is defined as people's beliefs and judgments about their

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capabilities to produce designated levels of attainment and performance which exercise influence over events that affect their lives. This belief system influences how people feel, think, motivate themselves, and behave. Self-efficacy produce these diverse effects through four major processes, namely; cognitive, motivational, affective and selection processes. Unless people believe that they can produce desired outcomes through their actions, they have little incentive to act, or to persevere in the face of difficulties (Bandura, 2003). He proposed that an efficacious outlook produces personal accomplishments, and reduces vulnerability to stress, anxiety and depression (Bandura, 2003).

Bandura (1997; 2003) further suggested that self-efficacy is task-specific, that there is no all-purpose measurement of perceived self-efficacy and that such an approach has limited explanatory and predictive value. He thus argued that scales of perceived self-efficacy must be tailored to relevant activities and the particular domains of functioning which are the object of interest. Applying this to the context of oncology, several measures of self-efficacy in cancer have been developed, such as the Cancer Behaviour Inventory (CBI, Merluzzi et al, 2001), Self-Efficacy for Advanced Cancer (SEAC, Hirai et al., 2001), the Stanford Emotional Self Efficacy Scale-Cancer (SESES-C, Giese-Davis et al., 2004), and the Stanford Inventory of Cancer Patient Adjustment (SICPA, Telch & Telch, 1986). Since self-efficacy is a concerned with perceived capability, as opposed to intent, Bandura (2003) suggests that items assessing self-efficacy should be phrased in terms of *can do* as opposed to *will do*.

Self-efficacy, coping and adjustment to cancer

In recent years it has been suggested that self-efficacy within oncology settings is a determinant of positive outcomes and facilitates coping and adjustment to cancer (Beckham et al., 1997; Hirai et al., 2002; Kohno et al., 2009; Kreitler et al., 2007; Manne et al., 2006; Merluzzi et al., 2001). Several studies have also found that people with high self-efficacy report less psychological distress and better psychological and functional outcomes in coping with other chronic illnesses including arthritis, pain and diabetes (Buescher et al., 1991; Eiser et al., 2001; Kuijer & de Ridder, 2003; Lorig et al., 1996).

Lev (1997), in a review of research examining the application of Bandura's theory of self-efficacy in oncology, points out that evidence suggests relationships between self-efficacy and cancer prevention, and adaptation to cancer. Furthermore, strong percepts of self-efficacy predict intention to quit smoking, increase participation in cancer screening programs, enhance self-care behaviours and adjustment to a cancer diagnosis. High self-efficacy is associated with increased adherence to treatment as well as with decreased physical and psychological symptoms. These same views are echoed by Haas (2000), in that self-efficacy, in oncology, is an effective determinant of disease prevention, early detection behaviours and adaptation to cancer, and that it has potential for enhancing health promotion in people living with cancer.

Self-efficacy in coping with cancer correlates highly with psychological adjustment, suggesting that those with higher self-efficacy are better adjusted to cancer than those with low coping efficacy (Howsepian & Merluzzi, 2009; Nairn & Merluzzi, 2003). In the same vein, higher self-efficacy in coping has an inverse relationship with disease impact, suggesting that patients with higher self-efficacy are better able to cope with health-related physical dysfunctions of cancer (Howsepian & Merluzzi, 2009; Nairn & Merluzzi, 2003). Structural models of coping suggest that self-efficacy plays an important role as a mediator of the effects of cancer impact and variables such as social support on adjustment (Howsepian & Merluzzi, 2009; Nairn & Merluzzi, 2003). This implies that, apart from factors such as disease impact and social support, patients' beliefs about their capabilities for cancer-related coping determine their adjustment to cancer. In Merluzzi and Martinez Sanchez's (1997) initial study on the development and validation of the CBI, self-efficacy correlated significantly and positively with psychological adjustment, mental health as well as with satisfaction with life. A limited number of studies have further suggested a survival benefit for patients with high self-efficacy compared to those who are less efficacious (Hegde et al., 2002; Martinez-Sanchez, 1996; Merluzzi & Nairn, 1999).

Self-efficacy, psychological symptoms and quality of life in cancer

With reference to psychological distress and morbidity, several studies report inverse relationships between self-efficacy and psychological symptoms (Beckham et al., 1997; Giese-Davis et al., 1999; Lev & Owen, 1996). For example, a recent Japanese study by Kohno and associates (2009), involving patients with both early stage and advanced primary gastrointestinal cancer, found strong negative correlations between all subscale of the SEAC self-efficacy measure and anxiety, depression, psychological distress and post-traumatic stress symptoms. In another Japanese study of advanced cancer patients, similar high negative relationships were found between self-efficacy and, depression and anxiety (Hirai et al., 2002). Of interest in this study is that in the final structural equation model, self-efficacy accounted for 71% of the variance in emotional distress whereas physical condition accounted for 8% of the variance of self-efficacy. Self-efficacy was also found to not only influence patients' adjustment to cancer (Lev et al., 1999), but also to reduce and weaken perceived stress (Kreitler et al., 2007). In the study by Beckham et al. (1997), self-efficacy correlated strongly and negatively with depression, negative affect, psychological distress and sickness-related dysfunctional behaviours. These findings are supported by those of Graves and associates (2003) whose study yielded significant negative correlations between CBI subscales and mood states.

Research investigating the relationship between self-efficacy and quality of life (QoL) suggest a positive relationship between these variables (Cunningham et al., 1991; Kreitler et al., 2007; Lev et al., 2001; Lev et al., 1999; Merluzzi et al., 2001). For example, Merluzzi and associates (2001) found significant and high positive correlations between quality of life and nearly all subscales of the CBI. This suggests that more efficacious patients are able to achieve higher quality of life than those with low self-efficacy. These findings are supported by Kreitler and associates (2007) in that higher self-efficacy affects quality of life positively.

Intervention studies have further suggested that psychosocial intervention aimed at enhancing self-efficacy are effective (Akin et al., 2008; Beckham et al., 1997; Cunningham et al, 1991; Telch & Telch, 1986, Weber et al., 2004). In brief psychosocial

intervention programs, Cunningham and associates (Cunningham, 2005; Cunningham et al., 1991) found significant improvements in self-efficacy, mood and quality of life. Similar observations were made by Cunningham et al., (1993), Graves et al., (2003), Lev et al., (2001) and Telch and Telch (1986). In a brief 8-week intervention program with prostate cancer patients, Weber and associates (2004) found a significant increase in self-efficacy and reduction in depression in the intervention group compared to the control group. These studies suggest that self-efficacy can be changed and enhanced. On the other hand, Giese-Davis et al., (2002) found no significant improvements in emotional self-efficacy 12 months post-intervention. However, self-efficacy in the control group (i.e., no intervention) declined significantly, while that of the experimental group (i.e. received intervention) remained stable. Without intervention, it appears that cancer patients' self-efficacy decreases significantly over time, and significantly influences patients' quality of life (Lev, et al., 1999).

Additionally, self-efficacy appears to moderate patient-doctor interactions. Han et al. (2005) found that cancer patients with lower emotional self-efficacy for cancer experienced greater problems in interacting with doctors and nurses. Cancer-related self-efficacy has been related to the quality of communication and interactions between physicians and patients (Collie et al., 2005; Zachariae et al., 2003). This is of importance in that high quality of patient-doctor interactions influence aspects such as greater adherence to treatment (DiMatteo, 2003), patient satisfaction and positive treatment outcomes (Tennstedt, 2000), as well as better psychological adjustment (Buttow et al., 1996).

AIMS OF THE STUDY

In light of the literature on self-efficacy and its association to psychological distress and quality of life, and the lack of such research within the southern African context, the aims of this comparative study were three-fold. Firstly, it explored self-efficacy for coping of Oshiwambo-speaking Namibian and Sesotho-speaking South African women diagnosed with breast and cervical cancer. Secondly, the study investigated the relationship between self-efficacy, on the one hand, and anxiety, depression, psychological distress

and quality of life, on the other. Thirdly, the study aimed at comparing Namibian and South African cancer patients in relation to the two aims above.

METHODOLOGY

Settings and procedures

Participants were a convenience sample of women with a histologically confirmed diagnosis of primary breast- or cervical cancer. Patients were recruited from two outpatient oncology clinics at public hospitals, namely the Oshakati State Hospital (Namibia) and Bloemfontein's Universitas Academic Hospital (South Africa). Namibian patients were Oshiwambo-speaking, and South Africa patients were Sesotho-speaking. All patients were approached by the researcher or trained research assistants (4th year psychology students) in the waiting room while waiting to be seen by medical oncology personnel. The study was explained to the patients and consent to participate in the study was obtained.

The inclusion criteria were as follows: a diagnosis of breast or cervical cancer, aged ≥ 18 years, ability to speak and understand Oshiwambo (Namibia) or Sesotho (South Africa), ability to give written or verbal consent and knowledge of the cancer diagnosis. Patients who were too physically ill (e.g. on stretchers, inpatient), had obvious mental disabilities (e.g. severe mental retardation, not orientated to time, place or person), or were not informed yet of their cancer diagnosis were excluded from the study.

Ethical approval and permission for the study were granted by the Ministry of Health and Social Services in Namibia, and in South Africa by the Ethics Committee of the Faculty of Health Sciences at the University of the Free State (UFS), the Department of Health of the Free State Province and the Department of Oncotherapy of UFS' Faculty of Health.

Instruments

Four research instruments were utilized:

Self-efficacy for coping: The Cancer Behavior Inventory (CBI-L) (Merluzzi, Nairn & Martinez Sanchez, 1999) is a 33-item measure of self-efficacy for coping with cancer,

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derived from its 51- and 43-item predecessors (Merluzzi & Martinez Sanchez, 1997; 1998). It assesses self-efficacy and adjustment across seven factors. These are: (1) Maintaining activity and independence; (2) Seeking and understanding medical information; (3) Stress management; (4) Coping with treatment-related side-effects; (5) Accepting cancer/Maintaining a positive attitude; (6) Affective regulation; and (7) Seeking social support. The CBI is scored on a nine-point Likert confidence scale (1= "not at all confident", 5="moderately confident", 9= "totally confident"). A total score for self-efficacy for coping can be obtained by summing the ratings on all items. For the purpose of this study, the total score is referred to as "global self-efficacy". In the USA, the CBI has been found to be a reliable instrument with an alpha of 0.96 for the entire inventory (alphas ranging from 0.80-0.88 for the factors), and correlates highly with measures of psychological adjustment and quality of life (Merluzzi et al., 2001; Merluzzi et al., 1999). No psychometric data could be found for the CBI in Namibia and South Africa.

Quality of Life: The 26-item World Health Organization Quality of Life (WHOQOL-Bref) (WHOQOL Group, 1996) is a generic self-report measure of quality of life. It assesses 4 domains namely: physical health, psychological health, social relationships and environment, which constitute global QoL. Two questions each assess general perception of quality of life and satisfaction with health. The WHOQOL-Bref was developed and piloted in 15 culturally diverse field centers around the world, including Zimbabwe, and has been translated into approximately 20 languages (WHOQOL Group, 1996, 1998). It has been used in research within the African context (Awadalla et al., 2005; Mutimura et al., 2008), in other developing countries (Hwang et al., 2003;) as well as in cancer research (Amir & Ramati, 2002; Awadalla et al., 2007; Guernelli Nucci & Martins do Valle, 2006; Mohan et al., 2007; Mohan et al., 2006).

Psychological distress: The Distress Thermometer (DT)(Roth et al., 1998) is the most well-known single-item visual analogue screening instrument of global psychological distress for use in oncology settings (Mitchell, 2007; National Comprehensive Cancer Network, NCCN, 2008). It has in recent years gained international popularity and

compares favourably with longer well-established screening measures of psychological distress (Akizuki et al., 2003; Cohen et al., 2002; Gessler et al., 2008; Jacobsen et al., 2005; Özalp et al., 2007; Trask et al., 2002).

The Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, 1983) is an internationally acclaimed instrument with over 33 language translations (Bedford et al., 1997; Herrmann, 1997). It is a 14-item measurement instruments for anxiety and depression, and the HADS total scale is used as a measure of psychological distress (Chaturvedi, 1991; Hopwood et al., 1991; Ibbotson et al., 1994; Razavi et al., 1990; Spinhoven et al., 1997). The HADS is often used as a benchmark in validating other screening measures of psychological distress (Carlson & Bultz, 2003) and has previously been used in a southern African oncology setting (Berard et al., 1998).

Socio-demographic data: A self-composed socio-demographic questionnaire was used to gather information such as age, marital status, socio-economic status (SES), educational background, time since diagnosis, type of cancer, and perceived usefulness of patients' social support system.

All the research instruments were translated into Oshiwambo and Sesotho by means of backward-forward translation procedure through the Universities of Namibia and the Free States' departments of psychology and language experts. In the translation of the Sesotho version of the CBI, item 28 ("maintaining hope" of Factor 5) was erroneously omitted. To address this, the mean score for Factor 5 was computed and substituted for the missing item. This method for dealing with missing items and data is suggested and outlined in the CBI manual (Merluzzi et al., 1999).

Statistical analysis

Descriptive statistics were utilized to characterize the sample with regard to demographic characteristics. Pearson and Spearman correlations were employed to explore the relationships between factors of self-efficacy, as well as the relationship between self-efficacy, on one hand, and psychological morbidity, quality of life and patient

characteristics of a continuous nature, on the other hand. Kruskal-Wallis tests were employed to explore differences between the scores of Namibian and South African patients. Statistical significance was tested using two-tailed p-value (5% level) and 95% confidence interval.

RESULTS

Socio-demographic characteristics

The total sample size for the study was N=227, of which n=102 (49 breast cancer; 53 cervical cancer) were Namibian and n=125 (69 breast cancer; 56 cervical cancer) South African. The Namibian sample was significantly older (mean= 56.77; S.D.=14.27) than the South African sample (mean = 52.21; S.D. = 12.56) ($p<0.05$). South African patients were significantly more recently diagnosed (mean: 12.60; S.D.=12.65) compared to the Namibian patients (mean 31.55;S.D.=32.80) ($p<0.05$).

Approximately a third of patients from both nationalities were married, and only a few of the patients were employed. Patients in this study were primarily from low socio-economic status, and had little or no formal education. The majority of patients in both South African and Namibia rated the usefulness of their social support systems as moderate to high. The socio-demographic characteristics of the study sample are depicted in Table 1.

Reliability of the CBI

Cronbach alphas for the entire 33-item scale obtained for the Namibian (0.89) and South African (0.95) samples were high, suggesting that the scale has good overall internal consistency for both samples (see Table 2). Internal consistency, particularly for the South African sample, was similar to those in studies by Merluzzi and associates (Merluzzi et al., 2001, 1997; Nairn & Merluzzi, 2003). However, internal consistency for stress management, affective regulation, and seeking social support factors were very low for the Namibian sample.

Table 1: Socio-demographic variables

Socio-demographic variables	Number of patients	
	Namibian (N=102)	**South African (N=125)**
Age in years (mean ± S.D.)	56.77 ± 14.27	52.21 ± 12.56
Time since cancer diagnosis (months) (mean ± S.D.)	31.55 ± 32.80 median=20.00	12.60 ± 12.65 median=7.50
Type of cancer		
Breast cancer	49	69
Cervical cancer	53	56
Marital status		
Never married	30	25
Married	321	44
Divorced	6	7
Separated	1	13
Widowed	32	23
Not reported	2	13
Employment status		
Employed	16	34
Unemployed	41	23
Retired	5	12
Full-time homemaker	4	9
On leave from employment	0	6
On disability grant/benefits	5	11
Pensioner	31	30
Socio-economic status		
Low income	68	86
Low-to-middle income	16	21
Middle income	12	16
Middle-to-high income	1	2
Missing	5	0
Highest education		
Little or no formal education	64	76
Some secondary education	23	21
High school	8	14
Higher education	5	13
Missing	2	1
Usefulness of social support		
Low usefulness	33	11
Moderate usefulness	30	54
High usefulness	39	60

Table 2: Cronbach alpha coefficients for the CBI obtained for the Namibian and South African samples

	CBI Factor name	Namibia	South Africa
1	Maintaining activity and independence	0.81	0.81
2	Seeking and understanding medical information	0.87	0.76
3	Stress management	0.52	0.81
4	Coping with treatment-related side-effects	0.67	0.78
5	Accepting cancer/Maintaining a positive attitude	0.65	0.91
6	Affective regulation	0.49	0.67
7	Seeking social support	0.49	0.61
	Global self-efficacy (i.e. total CBI score)	0.89	0.95

All inter-factor Spearman correlations for the South African data were significant and positive, and ranged from 0.27 - 0.78. For the Namibian data, significant positive correlations ranged from 0.22 - 0.70. With the exception of factor 6 (affective regulation, which mostly yielded weak and non-significant positive correlations), all factors yielded significant positive correlations. Additionally, inter-factor correlations were generally stronger for the South African data compared to the Namibian data. For both groups, global self-efficacy (ie. total CBI score) correlated strongly with all the factors, suggesting overall good internal consistency of the scale.

Results of the CBI

Table 3 shows the performance on the CBI. The mean scores for the CBI were 227.05 (S.D., 35.29; median, 230.5) and 203.27 (S.D., 36.89; median, 206) for the Namibian and South African samples respectively. Kruskal-Wallis tests indicate that there was a significant difference between the Namibian and South African patients ($p < 0.0001$), with Namibian patients showing higher overall self-efficacy for coping with cancer. Considering the range of potential scores on the CBI, scores obtained by patients in both Namibia and South Africa appear to be relatively high, suggesting overall high self-efficacy. Additionally, scores for the entire CBI and its factors were negatively skewed for both nationalities, suggesting that a large proportion of patients rated their self-efficacy as high.

With regard to specific factors, Namibian patients scored higher on all factors, except for Factor 6, compared to their South African counterparts (all p values < 0.0001). Scores for the South African sample on Factor 6 was significantly higher than those of the Namibian sample. This factor assesses the balance between, on the one hand, the ability to express strong negative feelings and, on the other hand, the ability to withdraw from the situation by using denial, escape and ignoring. Similarly, considering the possible range of potential scores, both the Namibian and South African patients scored relatively low on this factor.

To compare performance on the individual factors, subscale scores were converted to average scores (i.e., divided factor scores by the number of items). This was carried out because factor 7 (seeking social support) contained fewer items.

Table 3: Performance on the CBI

CBI Factor	Nationality	Mean (SD)	Range (obtained)	Possible range	Median	Comparison of medians
1	Namibian	34.97 (8.07)	7-45	5-45	37	p<0.0001
	South African	31.12 (6.44)	9-45		31	
2	Namibian	33.32 (11.27)	5-45	5-45	37	p<0.0001
	South African	29.48 (8.04)	10-45		31	
3	Namibian	38.08 (5.91)	18-45	5-45	40	p<0.0001
	South African	32.18 (6.69)	14-15		34	
4	Namibian	35.13 (7.57)	9-45	5-45	36	p<0.0001
	South African	31.14 (6.88)	6-44		32	
5	Namibian	40.06 (5.15)	21-45	5-45	41.5	p<0.0001
	South African	32.83 (6.92)	6-45		34	
6	Namibian	24.52 (8.58)	5-44	5-45	25	p=0.0061
	South African	27.74 (7.46)	11-40		27	
7	Namibian	21.12 (5.11)	4-27	3-27	21.5	p<0.0001
	South African	18.78 (4.47)	5-27		20	
Total CBI	Namibian	227.05 (35.29)	123-288	33-297	230.5	p<0.0001
	South African	203.27 (36.89)	78-267		206	

Note:

CBI Factor names:
1=Maintaining activity and independence; 2=Seeking and understanding medical information; 3=Stress management; 4=Coping with treatment-related side-effects; 5=Accepting cancer/Maintaining a positive attitude; 6=Affective regulation; 7=Seeking social support

For the Namibian patients, the highest performance was on Factor 5 (accepting cancer/maintaining a positive attitude) followed by Factor 3 (stress management). For the South African patients, the highest performance was on Factors 3 and 5. Lowest scores for both nationalities were obtained on Factor 6 (affective regulation). These differences between the highest and lowest scores were significant for both samples.

Correlation between self-efficacy, distress, anxiety and depression

Table 4a shows Spearman correlation coefficients between self-efficacy, anxiety, depression and psychological distress. Negative correlations were found between almost all aspects of self-efficacy and anxiety, depression and psychological distress for the entire study sample. The strength of all correlations for the South African sample was

moderate to high, as well as significant. On the contrary, correlations for the Namibian cancer sample were weak, and only a few reached significance levels.

Table 4a: Correlations between self-efficacy, psychological distress, anxiety and depression

CBI Factor	Nationality	DT	HADS Anxiety	HADS Depression	HADS Total
1	Namibian	-0.19	-0.13	-0.31**	-0.23*
	South African	-0.56***	-0.53***	-0.65***	-0.61***
2	Namibian	-0.26**	-0.01	-0.13	-0.06
	South African	-0.38***	-0.36***	-0.49***	-0.43***
3	Namibian	-0.17	-0.16	-0.28**	-0.24*
	South African	-0.38***	-0.60***	-0.61***	-0.64***
4	Namibian	-0.21*	-0.09	-0.20*	-0.17
	South African	-0.52***	-0.50***	-0.60***	-0.56***
5	Namibian	-0.26**	-0.23*	-0.33**	-0.31**
	South African	-0.46***	-0.64***	-0.66***	-0.67***
6	Namibian	0.008	-0.20*	-0.03	-0.13
	South African	-0.34***	-0.30***	-0.45***	-0.38***
7	Namibian	-0.19	0.16	0.03	0.10
	South African	-0.30**	-0.43***	-0.55***	-0.51***
CBI total scale	Namibian	-0.27**	-0.14	-0.24*	-0.20*
	South African	-0.52***	-0.57***	-0.70***	-0.65***

Notes:

CBI Factor names: 1=Maintaining activity and independence; 2=Seeking and understanding medical information; 3=Stress management; 4=Coping with treatment-related side-effects; 5=Accepting cancer/Maintaining a positive attitude; 6=Affective regulation; 7=Seeking social support

DT=Distress Thermometer; HADS=Hospital Anxiety and Depression Scale

*   Significant at $p \leq 0.05$
**   Significant at $p \leq 0.01$
***   Significant at $p \leq 0.001$

For South African patients, global self-efficacy was strongly correlated with psychological distress as measured by both the DT (r = -0.52; p<0.0001) and the HADS (r = -0.65; p<0.0001), as well as with anxiety (r = -0.57; p<0.0001) and depression (r = -0.70; p<0.0001). For Namibian patients, there was a weak relationship between global self-efficacy and psychological distress as measured by both the DT (r = -0.27; p=0.006) and the HADS (r = -0.20; p=0.040), anxiety (r = -0.138; p=0.167) and depression (r = -0.24; p=0.015).   As shown in Table 4b, the differences between almost all the correlations for South Africa and Namibia were significant.

Table 4b: Comparisons of correlations between the CBI, DT and HADS: Namibia vs. South Africa (p-values)

CBI Factor	DT	HADS Anxiety	HADS Depression	HADS Total
1	0.0016	0.0007	0.0010	0.0005
2	0.3410 (NS)	0.0075	0.0027	0.0034
3	0.0818 (NS)	0.0007	0.0023	0.0002
4	0.0093	0.0006	0.0003	0.0006
5	0.0847 (NS)	0.0002	0.0010	0.0003
6	0.0077	0.4210 (NS)	0.0008	0.00484 (NS)
7	0.4160 (NS)	<0.0001	<0.0001	<0.0001
CBI total scale	0.0251	0.0002	<0.0001	<0.0001
Note: NS=not significant				

Correlations between self-efficacy and quality of life

Tables 5a and 5b shows the correlations between self-efficacy and quality of life for the Namibian and South African samples respectively. For both countries, all correlations were in the positive direction. This suggests that patients with higher self-efficacy for coping with cancer had better quality of life.

For the Namibian sample, global self-efficacy yielded significant low to high positive correlations with WHOQOL-Bref's general perception of QoL (r= 0.23), satisfaction with general health (r= 0.41), physical domain (r= 0.47), psychological domain (r= 0.26), social relationships (r= 0.39), environmental domain (r= 0.36) and global QoL (r= 0.51). With the exception of Factor 6, which yielded a weak albeit significant correlation, all the factors of the CBI correlated moderately with global QoL.

Table 5a: Correlations between self-efficacy and quality of life (Namibia)

WHOQOL-Bref	CBI Factors							
	1	2	3	4	5	6	7	CBI total
Gen. QoL	0.18	0.15	0.06	0.19	0.29**	0.14	0.14	0.23*
Gen. Health	0.45***	0.44***	0.13	0.25*	0.27**	0.07	0.26**	0.41***
Physical	0.42***	0.49***	0.23*	0.24*	0.31**	0.13	0.38***	0.47***
Psychological	0.26**	0.08	0.19	0.20*	0.28**	0.29**	0.04	0.26**
Social Relations	0.21*	0.25*	0.17	0.23*	0.29**	0.31**	0.32**	0.39***
Environment	0.24*	0.33***	0.28**	0.25*	0.30**	0.13	0.23*	0.36***
Global QoL	0.41***	0.42***	0.30**	0.32**	0.42***	0.25*	0.33***	0.51***

Notes:

CBI Factor names: 1=Maintaining activity and independence; 2=Seeking and understanding medical information; 3=Stress management; 4=Coping with treatment-related side-effects; 5=Accepting cancer/Maintaining a positive attitude; 6=Affective regulation; 7=Seeking social support

WHOQOL-Bref= 26-item World Health Organization Quality of Life; General QoL consists of item 1 of the WHOQOL-Bref; General Health consists of item 2 of the WHOQOL-Bref; Global QoL consists of items 1-26 of the WHOQOL-Bref

*   Significant at p≤0.05
** Significant at p≤0.01
*** Significant at p≤0.001

For the South African sample, global self-efficacy yielded significant moderate positive correlations with WHOQOL-Bref's general perception of QoL (r= 0.44), satisfaction with general health (r= 0.41), physical domain (r= 0.30), psychological domain (r= 0.40), social relationships (r= 0.43), environmental domain (r= 0.49) and global QoL (r= 0.49). With the exception of Factor 6, all the factors of the CBI correlated moderately to highly with global QoL. As with the Namibian data, Factor 6 yielded a significant but weak correlation with global QoL.

Table 5b: Correlations between self-efficacy and quality of life (South Africa)

WHOQOL-Bref	*CBI Factors*							
	1	*2*	*3*	*4*	*5*	*6*	*7*	*CBI total*
Gen. QoL	0.35***	0.14	0.43***	0.50***	0.38***	0.28**	0.34***	0.44***
Gen. Health	0.42***	0.10	0.48***	0.42***	0.47***	0.16	0.35***	0.41***
Physical	0.24**	0.27**	0.20*	0.27**	0.39***	0.08	0.26**	0.30***
Psychological	0.49***	0.31***	0.39***	0.33***	0.53***	0.07	0.29**	0.40***
Social Relations	0.40***	0.20*	0.41***	0.45***	0.50***	0.20*	0.28**	0.43***
Environment	0.48***	0.39***	0.35***	0.44***	0.52***	0.30***	0.23*	0.49***
Global QoL	0.49***	0.34***	0.42***	0.45***	0.59***	0.19*	0.32***	0.49***

Notes:

CBI Factor names: 1=Maintaining activity and independence; 2=Seeking and understanding medical information; 3=Stress management; 4=Coping with treatment-related side-effects; 5=Accepting cancer/Maintaining a positive attitude; 6=Affective regulation; 7=Seeking social support

WHOQOL-Bref= 26-item World Health Organization Quality of Life; General QoL consists of item 1 of the WHOQOL-Bref; General Health consists of item 2 of the WHOQOL-Bref; Global QoL consists of items 1-26 of the WHOQOL-Bref

*   Significant at p≤0.05
**   Significant at p≤0.01
*** Significant at p≤0.001

For most parts, Kruskall-Wallis tests revealed no significant differences between the Namibian and South African patients pertaining to correlations between self-efficacy and QoL. With regard to the correlations of global self-efficacy to all facets of QoL, there were no significant differences between Namibian and South African cancer patients. Similarly, there were no significant differences in correlations of all CBI factors to global QoL. Significant differences are depicted in Table 5c. For example, whereas the correlation between CBI Factor 2 (Seeking and understanding medical information) and general health was significant and moderate for the Namibian sample (r=0.44), it was low and non-significant for South Africa (r= 0.10). On the contrary, the correlation between Factor 4 (Coping with treatment-related side-effects) and general QoL was significant and high for South Africa (r=0.50), but low and non-significant for Namibia (r=0.19).

Table 5c: Comparisons of correlations between the self-efficacy and quality of life: Namibia vs. South Africa (p-values)

WHOQOL-Bref	CBI Factors							
	1	*2*	*3*	*4*	*5*	*6*	*7*	*CBI total*
Gen. QoL	0.1910	0.9290	0.0027 (S)	0.0081 (S)	0.4330	0.2780	0.1010	0.0832
Gen. Health	0.8200	<0.0001 (S)	0.0047 (S)	0.1600	0.0807	0.5240	0.4920	0.9640
Physical	0.1410	0.0475 (S)	0.8180	0.8000	0.5050	0.7030	0.3400	0.1510
Psychological	0.0410 (S)	0.0818	0.1070	0.3010	0.0291 (S)	0.0881	0.0574	0.2360
Social Relations	0.1150	0.7180	0.0548	0.0596	0.0586	0.3860	0.7780	0.6820
Environment	0.0358 (S)	0.6100	0.5700	0.0969	0.0411 (S)	0.1970	0.9680	0.2410
Global QoL	0.4820	0.4640	0.3230	0.2580	0.0871	0.6800	0.9160	0.8400
Note: (S) denotes significant difference at p≤0.05								

Relationship between self-efficacy and socio-demographic variables

Results regarding correlations between factors of self-efficacy and age for the Namibian sample were mixed, albeit primarily negative. For global self-efficacy, the correlations was weak and negative (r= -0.14), suggesting that younger patients had higher self-efficacy for coping with cancer. However, this result did not reach significance. Factor 2 correlated significantly, albeit, weakly with age (r= -0.23), suggesting that younger Namibian patients had higher efficacy in seeking and understanding medical information compared to older patients (see Table 6).

Table 6: Comparison of correlations between self-efficacy and age & time since diagnosis

CBI Factor	Nationality	Age	p-value	Time since diagnosis	p-value
1	Namibian	-0.08	0.0064 (S)	0.04	0.8090
	South African	0.27**		0.07	
2	Namibian	-0.23*	0.0061 (S)	0.04	0.5970
	South African	0.14		-0.03	
3	Namibian	0.08	0.0472 (S)	-0.22*	0.0437 (S)
	South African	0.33***		0.05	
4	Namibian	0.05	0.2320	0.03	0.4740
	South African	0.21*		0.13	
5	Namibian	-0.07	0.0478 (S)	-0.14	0.1040
	South African	0.20*		0.08	
6	Namibian	-0.08	0.0107 (S)	-0.007	0.9520
	South African	0.26**		-0.02	
7	Namibian	-0.07	0.0023 (S)	0.05	0.4520
	South African	0.33*		-0.05	
CBI total	Namibian	-0.14	0.0005 (S)	0.006	0.9800
	South African	0.32***		0.009	
Note: * Significant at p≤0.05 ** Significant at p≤0.01 *** Significant at p≤0.001 (S) denotes significance at p≤0.05					

However, all correlations between factors of self-efficacy and age were positive for the South African sample. With the exception of Factor 2 (r=0.14), which did not reach significance, all correlations were moderate and significant for South Africans. This suggests that older South African patients had higher self-efficacy for coping with cancer in six of the CBI facets, compared to younger patients (see Table 6). Comparing the differences in correlations for the Namibian and South African samples, all correlations except for Factor 4 (Coping with treatment-related side-effects) were significant.

With regard to the time since diagnosis, the directions of correlations were mixed for the entire study sample. Global self-efficacy correlated weakly and non-significantly for both the Namibian (r=0.006) and South African samples (r=0.009). The only significant correlation and difference was with Factor 3 (stress management) for the Namibian sample (r=-0.22), suggesting that more recently diagnosed Namibian patients were more efficacious in stress management when anticipating and receiving medical treatment (see Table 6).

Pertaining to categorical demographic variables (marital status, employment, SES, education, type of cancer and usefulness of social support), there were no statistically significant differences for the Namibian patients. For the South African sample, patients who were single, employed, had middle-high SES, and rated the usefulness of their social support system as high obtained significantly higher global self-efficacy scores. As with the Namibian sample, there were no significant differences in self-efficacy for the South African patients in relations to education and cancer type.

DISCUSSION

As a global measure of self-efficacy for coping with cancer, the CBI appears to have good overall internal consistency for the entire study sample. This is particularly the case for the South African data, which yielded higher coefficients, in line with those obtained in previous studies using the same measure (Merluzzi et al., 2001, 1997; Nairn & Merluzzi, 2003). For the Namibian data, however, alphas for stress management,

affective regulation and seeking social support factors were low, suggesting probable lack of internal consistencies for these factors.

With regard to the global self-efficacy, and considering the range of potential scores on the CBI, both the Namibian and South African samples obtained relatively high scores. Additionally, scores for patients in both nationalities were negatively skewed, suggesting that obtained scores were generally high. Additionally, global self-efficacy was similar to that of patients in Nairn and Merluzzi's study (2003) for the South African patients and slightly higher for the Namibian patients. Comparing the South African and Namibian patients with reference to global self-efficacy, it appears that Namibian cancer patients in the study had significantly higher global self-efficacy for coping with cancer. However, the results suggest that South African patients are more efficacious in affective regulation, which include complex, opposing yet complementary processes in self-regulation of emotions (Merluzzi et al, 2001).

Results of this study indicate significant negative relationships between self-efficacy and anxiety, depression and psychological distress for the entire study sample. This suggests that more efficacious patients experience less anxiety, depression and psychological distress compared to less efficacious patients. This is supportive of previous research that suggests an inverse relationship between self-efficacy and psychological morbidity in cancer patients (Beckham et al., 1997; Cunningham, et al., 1997; Howsepian & Merluzzi, 2009; Lam & Fielding, 2007) as well as in patients with other chronic illnesses (Eiser et al., 2001). Although correlations for both South African and Namibian samples were negative, the South African data yielded significantly stronger correlations. For example, correlations with HADS psychological distress were r= -0.20 (Namibia) and r= -0.65 (South Africa). This suggests that self-efficacy accounted for 42% (r^2=0.4225) of the variance of psychological distress for the South African sample, while it accounted only for 4% (r^2=0.04) of the variance for the Namibian sample, nearly a ten-fold difference.

As with previous studies on self-efficacy and quality of life (Graves et al., 2003; Lev, 1997;), results of this study indicate a positive relationship between these variables,

suggesting that more efficacious Namibian and South African cancer patients have higher quality of life. Although it has been suggested that self-efficacy affects quality of life (Kreitler et al., 2001), it can not be inferred from correlations that high overall self-efficacy causes higher quality of life or vise versa, as there could be other causal variables (Field, 2005). However, the results suggest a significant moderate to strong relationship which is probably not by chance. Global self-efficacy accounts for approximately 25% of the variance of global quality of life for both the Namibian (r^2=0.26) and South African (r^2=0.24) samples. Other studies have found higher correlations (Graves et al., 2003; Hirai et al., 2002; Kohno et al., 2009; Merluzzi et al., 1999; Merluzzi et al., 2001; Nairn & Merluzzi, 2003). For example, Nairn and Merluzzi (2003), using the CBI and the Functional Assessment of Cancer Therapy (FACT) quality of life measure, found a correlation of r= 0.76, suggesting a potential variance of 58%. With regard to specific CBI factors, previous studies also yielded generally higher correlations between self-efficacy and quality of life (Graves et al., 2003). Of interest, however, is that several studies reported a lower correlation in relations to affective regulation in comparison to other CBI factors (Graves et al., 2003; Merluzzi et al., 1999; Merluzzi et al. 2001), mirroring results of the current study.

With regard to age and self-efficacy, there was a significant difference between the Namibian and South African patients. Whereas the Namibian sample yielded primarily negative correlations, the South African correlations were all positive suggesting that older patients were more efficacious in coping with cancer. These differences are somehow surprising, given that it is presumed that patients in these two southern African groups share some similarities. Previous research yielded mixed results (Beckham et al., 1997; Hirai et al, 2002; Howsepian & Merluzzi, 2009; Inman et al., 2003; Merluzzi et al., 2001). However, it has been suggested that older patients might have high self-efficacy for coping with cancer. A potential explanation is that with age comes the experience of having coped with a variety of life stressors over years, thus enabling an individual to augment confidence in coping with future stressor such as a cancer diagnosis (Merluzzi et al., 2001).

Socio-economic status, employment and usefulness of social support system appear to have a positive impact on self-efficacy for the South African patients. A possible explanation is that material resources that come from being employed and having a higher SES may play a role in fostering coping and self-efficacy. Additionally, social support has long been recognized as one of the major and important resources of coping (Bloom & Spiegel, 1984; Maly et al., 2005). It was expected that married patients might demonstrate a higher self-efficacy, owing to impact of the social support. However, single South African patients appear to have significantly higher self-efficacy for coping with cancer compared to those who are married, divorced, separated or widowed. This is probably a reflection of the social dynamics. Today there are many single women, probably coping alone with multiple challenges such as work, heading house-holds and child-rearing while at the same time dealing with cancer. A potential explanation is that such single patients' self-efficacy is probably enhanced through the experience of overcoming multiple obstacles through perseverant efforts, thus making them more resilient as postulated by Bandura (1994).

In light of previous findings that self-efficacy plays a major role as a determinant of coping with and adjustment to cancer as well as the results of the current study, the CBI has potential research and clinical use for southern Africa. As a research tool, it could be used in clinical trials aimed at enhancing psychological and medical outcomes as proposed by Merluzzi and associates (2001). Given that, to the knowledge of the researcher, the CBI has not been utilized in African oncology settings, it might be useful to explore components of self-efficacy within these contexts in order to develop norms to provide a comparative basis. As a clinical tool, the CBI might be useful in monitoring the self-efficacy of patients in dealing with cancer over the course of the illness and related treatment. Similarly, it might be utilized in evaluating outcomes of psychosocial interventions programs aimed at decreasing psychological distress and enhancing self-efficacy, quality of life, coping and adjustment to cancer.

LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

Although overall internal consistency for the entire CBI in this study was good for both the Namibian and South African samples, alpha coefficients for stress management, affective regulation and seeking social support factors for the Namibian sample was low, hence limiting the interpretation of the results obtained. A probable explanation for this is the construct measured by those factors might be expressed differently within this cultural setting. This is a potential area that needs to be explored further using qualitative approaches in terms of what would constitute important aspects self-efficacy for coping with cancer. Although instruments used in this study were translated from English by language experts and individuals with advanced training in psychology in an effort to ensure construct validity, it is probable that accuracy of the English version was not accurately captured. This has been noted as a prevalent challenge in translation of research instruments.

To the knowledge of the researcher, the CBI has not been previously used in African oncology settings. As such, there is no established norms that could be used as a comparison. In the absence of such comparative data, results obtained on the CBI were compared to those of Merluzzi's et al, (2001) study, thus limiting generalization of the findings. Similarly, the current study compared the performance of Oshiwambo- and Sesotho-speaking cancer patients only, and can not be generalized to other groups within the southern African region. A potential area of research would be to explore self-efficacy using larger, multi-cultural samples that are representative of the local demographics, and including patients with a variety of cancer diagnoses and disease staging.

Although the correlation approach used in the study suggests a relationship between self-efficacy, quality of life and psychological distress, causality can not be inferred. Hence a suggestion for future research is the use of longitudinal and experimental approaches. Furthermore, it has been suggested that self-efficacy is a determinant of adjustment to cancer, and the actual mechanisms thereof need further exploration. In the same vein, this study found significant differences in the correlations of self-efficacy to

psychological distress and a number of the demographic variables between the Namibian and South African samples. Further research to explore these differences is recommended.

CONCLUSION

Research has proposed that self-efficacy is an important mediating factor in coping with cancer. To this effect, this study aimed at exploring and comparing self-efficacy for coping in breast- and cervical cancer patients in two southern African settings. Results of this study suggest probable overall high self-efficacy in both groups, although scores of global self-efficacy for the Namibian sample were significantly higher. Self-efficacy correlated negatively with psychological distress and positively with quality of life for the entire study sample. However, for psychological distress, there was a significantly stronger correlation for the South African sample. The CBI could have both research and clinical utility in these southern African oncology contexts and further research using larger multi-cultural samples is suggested.

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ARTICLE 5

A COMPARISON OF ADJUSTMENT BETWEEN OSHIWAMBO-SPEAKING NAMIBIAN AND SESOTHO-SPEAKING SOUTH AFRICAN WOMEN DIAGNOSED WITH BREAST OR CERVICAL CANCER

A COMPARISON OF ADJUSTMENT BETWEEN OSHIWAMBO-SPEAKING NAMIBIAN AND SESOTHO-SPEAKING SOUTH AFRICAN WOMEN DIAGNOSED WITH BREAST OR CERVICAL CANCER

ABSTRACT

Background: Although much research has been carried out in developed countries on adjustment to cancer, research within the African context is minimal. It has been suggested that adjustment styles to a cancer diagnosis influence patients' well-being, and are related to psychological morbidity, quality of life and coping. ***Objectives***: The aim of this research was to investigate and compare Oshiwambo-speaking Namibian and Sesotho-speaking South African women diagnosed with breast or cervical cancer with regard to mental adjustment to cancer. ***Methods:*** The Mental Adjustment to Cancer (MAC) scale, Distress Thermometer (DT), Hospital Anxiety and Depression Scale (HADS), 26-item World Health Organization Quality of Life (WHOQOL-Bref) and Cancer Behavior Inventory (CBI) were used. The sample consisted of 102 Namibian and 125 South African patients. ***Results:*** Namibian and South African patients reported comparable and probably high levels of hopeless/helplessness, but differed with regard fighting spirit, anxious preoccupation, fatalism and avoidance. Fighting Spirit (FS) correlated negatively with anxiety, depression and psychological distress for both Namibian and South African patients, however the magnitude of the correlations were statistically different between the groups. Helpless/Hopelessness (H/H) correlated positively with psychological morbidity. Anxious Preoccupation (AP), Fatalism (F) and Avoidance (A) scales yielded mixed and conflicting results for this study, probably suggesting that these aspects are expressed differently within these cultural settings. Quality of life and self-efficacy correlated positively with Fighting Spirit. Summary positive and negative adjustment scores correlated positively and negatively with FS and H/H respectively for the study samples. ***Conclusion:*** Given the low internal consistencies for the H/H, AP, F, and A sub-scales of the original MAC scale, and superior internal consistencies of the summary positive (MAC-SPA) and negative adjustment (MAC-SNA) recently suggested by Watson and Homewood, further research is recommended using the new two-factor structure. Psychosocial intervention to enhance fighting spirit, reduce hopeless/helplessness and increase psychological well-being of southern African cancer patients might be useful, and this need further exploration.

Key words: cancer, mental adjustment, distress, quality of life, self-efficacy, coping, Namibia, South Africa

INTRODUCTION

Coping and adjustment to illness are among the most widely researched topics. Within oncology settings, it has been suggested that the type of adjustment responses that patients adopt play a major role in overall well-being. Additionally, research has indicated relationships between adjustment responses to cancer, and psychological

distress, quality of life and self-efficacy for coping with cancer. In light of these prior findings and the lack of psycho-oncology research within African contexts, this study explored and compared mental adjustment to cancer of patients in two southern African countries.

<div align="center">LITERATURE REVIEW AND BACKGROUND</div>

Coping and adjustment

Within the discipline of psycho-oncology, coping and adjustment are some of the most widely studied and researched concepts (Grassi et al., 1993). In the conceptual and research model that has guided the work of psycho-oncology throughout the 1990s, these concepts have been among the mediating variables that formed the core of psychosocial oncology research (Holland, 2001). Criticisms have been leveled that the interplay between theory, empirical research and clinical practice, although ideal, remains not fully integrated (Folkman & Greer, 2000), and that clinically useful theoretical models have rarely been articulated (Brennan, 2001). To this effect, Folkman and Greer (2000), among others, have postulated a theory for psychosocial intervention, which represents a convergence of Lazarus and Folkman's model of stress and coping (Folkman, 1997; Lazarus & Folkman, 1984), and Greer, Watson and colleagues' conceptualization of mental adjustment to cancer (Greer et al., 1979; Greer & Watson, 1987; Moorey & Greer, 2002; Watson et al., 1988).

The concepts coping and adjustment have not been well-defined and have often been used synonymously in research (Nordin et al., 1999). According to Lazarus and Folkman (1984), coping entails constantly changing cognitive and behavioural efforts to manage specific external or internal demands that are appraised as taxing or exceeding the resources of an individual. These authors postulate that appraisal, an individual's perception or interpretation of a stressful event (such as a diagnosis of cancer), determines to some degree how such an individual copes with the event. Mental adjustment to cancer refers to the cognitive and behavioural responses made by an individual to a cancer diagnosis. It includes appraisal (i.e. how the patient perceives the implications of cancer) and the ensuing reactions (i.e. what the patient thinks and does in

order to reduce the threat posed by cancer) (Greer, 1991; Greer & Watson, 1987; Greer et al., 1989). One of the major differences in these concepts is that in mental adjustment, cognitive appraisal of a demanding situation is not differentiated from the ensuing reactions (Mystakidou et al., 2005; Nordin et al., 1999).

Mental adjustment to a cancer diagnosis

Five most common adjustment styles in response to a cancer diagnosis have been identified and suggested (Greer & Watson, 1987; Moorey & Greer, 2002). *Fighting Spirit*: the patients fully accepts the diagnosis, sees the cancer diagnosis as a challenge, adopts an optimistic attitude, and believes that it is possible to exert some control over the illness. *Helplessness/Hopelessness*: the illness is viewed as a loss, the patient is completely engulfed by the diagnosis and is pessimistic, and active strategies for fighting the illness are absent. *Anxious Preoccupation*: the diagnosis is seen as a major threat, prognosis is uncertain, there is uncertainty over the control that can be exerted, and the patient's reaction to the diagnosis is marked by persistent anxiety. *Fatalism/Stoic Acceptance*: the patient acknowledges the diagnosis, sees it as a minor threat, there is an absence of confrontative strategies, and the patient assumes an attitude of resignation and passive acceptance. *Avoidance/Denial*: the patient sees the diagnosis as a minimal threat, and denies or minimizes its seriousness. Of these responses, fighting spirit and hopelessness/helplessness are probably the most widely referred to in psycho-oncology research (Inoue et al., 2003; Watson & Homewood, 2008).

It has been proposed that psychological response to cancer might be a significant predictor of disease outcome (Greer, 1991). Several studies found that fighting spirit and avoidance/denial were associated with reduced risk of disease progression and longer survival (Greer et al., 1979; Greer et al., 1990; Lehto et al., 2006; Morris et al., 1992; Pettingale et al, 1985; Tschuschke et al., 2001). It has also been proposed that helplessness/hopelessness, fatalism and avoidant coping are associated with disease progression and worse prognosis (Brown et al., 2000; Di Clemente & Temoshok, 1985; Jensen, 1987; Watson et al., 1999). Several more recent studies suggest that minimizing the illness and its impact is associated with unfavourable prognosis (Buttow et al., 2000;

Obsorne et al., 2004). However, from the literature review, it appears that results regarding the specific adjustment responses and their associations to disease outcome are mixed (Andrykowski et al., 1994; Cassileth et al., 1985; Dean & Surtees, 1989; Osborne et al., 2004). For example, Greer (1991) points out that the survival benefit might probably only be applicable to early-stage non-metastatic cancer and that evidence regarding metastatic cancer is ambiguous. In a recent meta-analysis of longitudinal prospective studies, Garssen (2004) suggests that while helplessness seems to contribute to an unfavourable prognosis and denial/minimizing to a favourable prognosis, the role of fighting spirit and fatalism is doubtful. In a 10-year follow-up study, Watson et al. (2005) found that hopelessness/helplessness had an effect on survival, but fighting spirit offered no survival benefits. Moreover, Moorey and Greer (2002), point out that evidence regarding the survival benefit of psychosocial interventions (which is often aimed at enhancing coping and adjustment) remains inconclusive.

With regard to psychological morbidity, there has been more consistency in the suggestion that the type of response to cancer is an important determinant of psychological morbidity and well-being (Costa-Requena & Gil, 2009; Gilbar et al., 2005; Grassi et al., 2005; Nordin et al., 1999; Osborne et al., 1999; Schou et al., 2004; Watson et al., 1984; Watson et al., 1999). For example, Ferrero et al. (1994), found an inverse correlation between fighting spirit and psychological distress. Similarly, fighting spirit has been associated with better coping (Classen et al., 1996). In a Norwegian study, hopelessness, fatalism and anxious pre-occupation were all found to be predictive of anxiety, and patients who used helpless/hopelessness style were found to be approximately four times at greater risk for experiencing depression (Schou et al., 2004). Likewise, in a Japanese study (Akechi et al., 2000), fighting spirit correlated negatively and significantly with mood disturbance, while helpless/hopelessness, anxious preoccupation and fatalism correlated positively with mood disturbances. This suggested that patients with higher fighting spirit experience less mood disturbances and supports the view of other research findings in this regard (Grassi et al., 1993; Schnoll, 1995; Watson et al., 1988; Watson, 1991). Patients with higher hopelessness and anxious pre-occupation report elevated levels of anxiety and depression (Osborne et al., 1999).

With regard to quality of life (QoL), research suggests a relationship between adjustment response and QoL (Schnoll et al., 1998). In a study to determine the effect of adjuvant psychological therapy on quality of life of cancer patients, (Greer et al., 1992) found significant increased fighting spirit and quality of life as well as reduce helplessness, anxiety and depression. Similarly, studies have reported a relationship between mental adjustment and self-efficacy for coping with cancer. For example, Merluzzi and Martinez Sanchez (1997) found a positive relationship between fighting spirit and self-efficacy, and a negative correlation between helpless/hopelessness and self-efficacy, suggesting that more efficacious patients respond to a cancer diagnosis with higher levels of fighting spirit and lower helplessness. Intervention studies further suggests that psychosocial programs may enhance fighting spirit (Berglund et al., 1994) and decrease hopelessness, anxious preoccupation and fatalism (Greer et al., 1991).

The Mental Adjustment to Cancer (MAC) scale

The Mental Adjustment to Cancer (MAC) scale (Watson et al., 1988) is probably the most well-known measure of adjustment to cancer. Although it was developed to assess responses of patients to a cancer diagnosis, it has also been used frequently as a measure of coping strategies (Lampic et al., 1994; Schnoll et al., 1995; Schwartz et al., 1992). The MAC scale has been adapted to assess coping and adjustment to other illnesses such as strokes (Lewis et al., 2001) and HIV (Grassi et al., 1998; Kelly et al., 2000). Within oncology settings, the MAC scale has been widely used internationally including southern Africa (Schlebusch & Van Oers, 1999), translated into various languages, and factor structured by various researchers (Akechi et al., 2000; Braeken et al., 2009; Cayrou et al., 2003; Ferrero et al., 1994; Grassi et al., 1993; Grassi & Watson, 1992; Mystakidou et al., 2005; Nordin et al., 1999; Osborne et al., 1999; Scholl et al., 1998; Schou et al., 2005; Schwartz et al., 1992). Several studies have examined the psychometric properties of the MAC scale and replicated its factor structure (Braeken et al., 2009; Cayrou et al., 2003; Costa-Requena & Gil, 2009; Mystakidou et al., 2005; Nordin et al., 1999; Osborne et al., 1999; Schwartz et al., 1992; Watson & Homewood; 2008) and report somehow different factor structures with new sub-scales. It has been suggested that differences in

results of the factor analyses is probably because of diversity in methods of factor analyses, non-compatibility of samples, cultural differences in understanding of the questions, and overlapping constructs (Scholl et al., 1998; Watson & Homewood, 2008). No psychometric data could be found for the MAC in Namibia and South Africa. Recently, Watson and Homewood (2008) re-analyzed the MAC scale using a large sample (n=1255) in the United Kingdom. They reported that the original helplessness/hopelessness scale of the MAC is extremely stable and robust, and that there are two overarching categories of adjustments responses; positive and negative adjustments. The authors suggest a new two-factor structure, namely Summary of Positive Adjustment (MAC-SPA) and Summary of Negative Adjustment (MAC-SNA), to be used in conjunction with the original MAC sub-scales.

Although psychological adjustment to cancer has been researched widely internationally and various language versions of the MAC scale now exist, research using this scale within the African region remains minimal. To the knowledge of the researcher, one study in South Africa (Schlebusch & Van Oers, 1999) explored the mental adjustment of breast cancer patients using the MAC scale. Specifically, this study compared responses of black and white breast cancer patients, and found that black patients scored significantly higher on helpless/hopelessness and anxious preoccupation, and lower on fighting spirit. These researchers further suggested that these patients might be at higher risk for psychological distress which might require psychological intervention. Watson and Homewood (2008) recently suggested the two-factor scale, and to the knowledge of the researcher only one subsequent study (Breaken et al., 2009) explored this possibility. In light of international research on mental adjustment to cancer, the lack of similar research within African oncology settings, and the new developments on the MAC scale, this study explored the mental adjustment of breast and cervical cancer patients in two southern African countries, using both the original MAC sub-scales and the newly suggested summary of positive and negative adjustment scales.

AIMS OF THE PRESENT STUDY

The current study explored and compared mental adjustment of Oshiwambo-speaking Namibian and Sesotho-speaking South African women diagnosed with breast or cervical cancer. Specifically, the study investigated the relationship between adjustment responses and psychological distress, quality of life, and self-efficacy for coping with cancer.

METHODOLOGY

Subjects

Study participants were 102 Namibian and 125 South African patients recruited from out-patient oncology clinics at two public hospitals. Inclusion criteria were: a diagnosis of breast or cervical cancer, aged 18 years and above, ability to speak and understand Oshiwambo (Namibia) or Sesotho (South Africa), ability to give written or verbal consent, and knowledge of the cancer diagnosis. Patients with obvious mental disabilities (e.g. severe mental retardation, psychotic illness), and those not yet informed about their cancer diagnosis were excluded from the study.

Procedures

Subjects were a convenience sample of patients in the out-patient oncology clinics waiting rooms at the Oshakati State Hospital (Oshakati, Namibia) and the Universitas Academic Hospital (Bloemfontein, South Africa). Patients were approached by researcher or the researcher assistants while waiting to be seen by the medical personnel for follow-up and/or treatment. In a separate room at the same premises, the aim of the study was explained and consent to participate in the study was requested. Since the majority of participants were not literate, questions were primarily read out to them by the researcher or research assistants. The study received ethical approval from the Ministry of Health and Social Services in Namibia, and in South Africa by the Ethics Committee of the Faculty of Health Sciences at the University of the Free State (UFS), the Department of Health of the Free State Province and the Department of Oncotherapy of UFS' Faculty of Health.

Measures and instruments

A self-compiled *socio-demographic questionnaire*, to gather information such as age, marital status, time since diagnosis and type of cancer, was used in addition to three research instruments:

Mental adjustment to cancer: The Mental Adjustment to Cancer (MAC) scale is a 40-item self-report questionnaire (Watson, Greer, Young, Inayat, Burgess, & Robertson, 1988), scored on a 4-point Likert scale ranging from 1 ("definitely does not apply to me") to 4 ("definitely applies to me"). The original MAC sub-scales are Fighting Spirit (FF; 16 items), Helplessness/Hopelessness (H/H; six items), Anxious Preoccupation (AP; nine items), Fatalism (F; eight items) and Avoidance (A; one item). The new general subscales proposed by Watson & Homewood (2008) are Summary of Positive Adjustment (MAC-SPA; 17 items) and Summary of Negative Adjustment (MAC-SNA; 16 items).

Psychological distress and morbidity: The Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, 1983) is a 14-item internationally acclaimed instrument with many language translations (Bedford et al., 1997; Herrmann, 1997). It consists of two sub-scales, anxiety and depression, and its total score has been used to assess psychological distress (Chaturvedi, 1991; Hopwood et al., 1991; Ibbotson et al., 1994; Johnston et al., 2000; Razavi et al., 1990; Spinhoven et al., 1997). In addition to the HADS, the Distress Thermometer (DT) (Roth et al., 1998) was used. The DT is a single-item visual analogue screening instrument of global psychological distress for use in oncology settings (National Comprehensive Cancer Network, 2008). It compares favourably with longer well-established screening measures of distress and has been widely used internationally (Akizuki et al., 2003; Cohen et al., 2002; Gessler et al., 2008; Jacobsen et al., 2005; Özalp et al., 2007; Trask et al., 2002).

Quality of life (QoL): The 26-item World Health Organization Quality of Life (WHOQOL-Bref) (WHOQOL Group, 1996) is a generic self-report measure of quality of life. It consists of 4 sub-scales (physical health, psychological health, social relationships

and environment). Two additional questions assess perception of general QoL and satisfaction with general health. The 26 items together yield global QoL. The WHOQOL-Bref was developed and piloted in 15 culturally diverse field centers around the world, including Zimbabwe, and it has been translated into approximately 20 languages (WHOQOL Group, 1996, 1998). It has been used in research within the African settings (Mutimura et al., 2008; Ohaeri et al., 2007), and in oncology research (Amir & Ramati, 2002; Awadalla et al., 2007; Guernelli Nucci & Martins do Valle, 2006; Mohan et al., 2006).

Self-efficacy for coping with cancer: The Cancer Behavior Inventory (CBI-L) (Merluzzi, Nairn & Martinez Sanchez, 1999) is a 33-item measure of self-efficacy for coping with cancer.   It assesses self-efficacy across seven factors (Maintaining activity and independence; Seeking and understanding medical information; Stress management; Coping with treatment-related side-effects; Accepting cancer/Maintaining a positive attitude; Affective regulation; and Seeking social support), the sum of which provides a score of global self-efficacy. Only global self-efficacy was explored in this study.

All the research instruments were translated by language experts into Oshiwambo and Sesotho by means of backward-forward translation process through the Universities of Namibia and the Free States' departments of psychology.

Statistical analysis

Descriptive statistics were utilized to characterize the sample with regard to demographic characteristics.   Spearman correlations were employed to explore the relationship between original MAC sub-scales and psychological morbidity, quality of life, self-efficacy for coping, and patient characteristics of a continuous nature. Kruskal-Wallis tests were carried out to compare scores of Namibian and South African patients. Comparisons were carried out in relation to the original MAC sub-scales. Supplementary descriptive statistics were carried out to provide descriptive data and Pearson's correlations for the MAC summary adjustment scores. The study did not aim to compare

the two groups with regards to summary scores. Statistical significance was tested using two-tailed p-value (5% level) and 95% confidence interval.

<div align="center">**RESULTS**</div>

Socio-demographic characteristics

Table 1 shows the socio-demographic characteristics of the study sample. Of the total sample N=227, n=102 were Namibians and n=125 were South Africans. The mean age of the Namibian sample was 56.77 (S.D.,14.27) and for the South African sample 52.21 (S.D., 12.56). Time since cancer diagnosis (in months) was 31.55 (S.D., 32.80) and 12.60 (S.D., 12.65) for the Namibian and South African groups respectively. The majority of the study participants were married.

Table 1: Socio-demographic characteristics

Patient characteristics	Namibian (n=102)	South African (n=125)
Age in years (mean ± S.D.)	56.77 ± 14.27	52.21 ± 12.56
Months since diagnosis (mean ± S.D.)	31.55 ± 32.80	12.60 ± 12.65
	median=20.00	median=7.50
Type of cancer		
Breast cancer	50	69
Cervical cancer	52	56
Marital status		
Never married	30	25
Married	32	44
Divorced	6	7
Separated	1	13
Widowed	32	24
No information	1	12

Reliability of the MAC scale

Internal consistencies of the MAC for the study samples are depicted in Table 2, together with Breaken et al. (2009) and Watson & Homewood's (2008) results. Cronbach's alphas (α) for Fighting Spirit (FS) were high and acceptable for both Namibia (0.76) and South Africa (0.88). However, alphas for the Anxious Preoccupation (AP) (0.53) and Fatalism (F) (0.56) sub-scales for Namibia, and Fatalism (0.22) and Helplessness/Hopelessness (H/H) (0.45) sub-scales for South Africa were very low. This suggests that the internal consistency might be questionable for the specific subscales and results must be interpreted within these limitations. Previous studies have generally yielded lower Cronbach's α for the Anxious Preoccupation and Fatalism subscales in comparison to the Fighting Spirit and Helplessness/Hopelessness sub-scales (Breaken et

al., 2009, Cayrou et al., 2003, Schwartz et al., 1992; Watson & Homewood, 2008). Coefficients for the Summary of Positive Adjustment (MAC-SPA) and Summary of Negative Adjustment (MAC-SNA) were 0.76 and 0.82 respectively for the Namibian sample, and 0.89 and 0.79 respectively for the South African sample.

Table 2: Cronbach alpha coefficients for the Namibian and South African samples

MAC Sub-scales	Present Study		Braeken et al. 2009	Watson & Homewood, 2008
	Namibia (n=102)	South Africa (n=125)	(n=1255)	(n=289)
Fighting Spirit	0.76	0.88	0.78	0.84
Helpless/Hopelessness	0.68	0.45	0.75	0.77
Anxious Preoccupation	0.53	0.60	0.55	0.66
Fatalism	0.56	0.22	0.45	0.56
MAC-SPA	0.76	0.89	0.78	0.84
MAC-SNA	0.82	0.79	0.84	0.84

Table 3 shows the inter-scale correlations. Helplessness/Hopelessness correlated significantly and negatively with Fighting Spirit (r= -0.25), and positively with Anxious Preoccupation (r=0.49) and Fatalism (r=0.47) for the Namibian sample. Similarly, H/H correlated positively with Anxious Preoccupation (r=0.48) and Fatalism (r=0.43) for the South African sample. However, the correlation between H/H and FS (r= -0.04) for the South African group was low and non-significant, in contrast to the Namibian data as well as previous research which found stronger negative correlations (Breaken et al., 2009; Ferrero et al., 1994; Merluzzi et al., 2001; Mystakidou et al., 2005; Nordin et al., 1999; Watson & Homewood, 2008). The following differences in correlations between the original MAC subscales for the two groups were statistically significant: FS vs. AP (p=0.0159), FS vs. F (p=0.0037) and AP vs. F (0.0093).

Table 3: Inter-scale correlations

MAC	Nationality	H/H	AP	F	A	MAC-SPA	MAC-SNA
FS	Nam	-0.25*	-0.002	0.07	-0.17	0.96**	-0.153
	SA	-0.04	0.31***	0.44***	-0.11	0.98**	-0.04
H/H	Nam		0.49***	0.47***	0.29**	-0.20*	0.91**
	SA		0.48***	0.43***	0.43***	-0.11	0.89**
AP	Nam			0.13	0.25*	0.031	0.69**
	SA			0.45***	0.39***	0.24**	0.72**
F	Nam				0.11	0.20*	0.59**
	SA				0.18*	0.48**	0.52**
A	Nam					-0.17	0.40**
	SA					-0.15	0.65**
MAC-SPA	Nam						-0.16
	SA						-0.09
FF=Fighting Spirit; H/H=Hopelessness/Helplessness; AP=Anxious Preoccupation; F=Fatalism; A=Avoidance							
* Significant at p≤0.05 ** Significant at p≤0.01 *** Significant at p≤0.001							

Directions of the correlations between MAC summary adjustment scales and the original MAC sub-scales were similar for the two groups. Positive adjustment (MAC-SPA) correlated strongly with FS (Nam: r=0.96; SA r=0.98), and negative adjustment (MAC-SNA) correlated strongly with H/H (Nam: r=0.91; SA r=0.89). The correlations between MAC-SPA and MAC-SNA were negative, but non-significant (Nam: r= -0.16; SA r= -0.09). Braeken et al., (2009) and Watson & Homewood (2008) reported stronger significant correlations between positive and negative adjustment (r= -0.30 and r= -0.29 respectively). Results yielded significant and positive moderate to strong correlations between MAC-SNA and AP, F and A for the study sample.

Results of the MAC scale

Means scores and standard deviations for the study sample are presented in Table 4. For comparative purposes, results of Schlebusch and Van Oers' (1999) study of Zulu-speaking black and English-speaking white South African breast cancer patients, as well results of Watson and Homewood (2009) and Braeken et al. (2009) studies are included. Kruskal-Wallis tests reveal no significant difference between Namibian and South African patients with regard to Helplessness/Hopelessness, suggesting comparable levels of hopeless/helplessness. However, results for both groups in the current study on this sub-scale appear to be similar to those of the black patients in the Schlebusch and Van Oers study.

Table 4: Means and SD for the Namibian and South African samples

MAC Subscales	Current Study		Schlebusch & Van Oers, 1999		Braeken et al., 2009 (T2)	Watson & Homewood, 2008
	Namibia (n=102)	South Africa (n=125)	Black (n=25)	White (n=25)	Dutch (n=259	British (n=1255)
FS	52.43 (6.23)	49.47 (7.14)	50.52 (4.27))	56.80 (11.48)	49.44 (6.29)	-
H/H	13.36 (4.07)	14.15 (3.10)	13.56 (3.12)	9.48 (2.20)	10.28 (2.89)	-
AP	22.82 (4.68)	25.28 (4.07)	25.56 (3.11)	22.88 (3.27)	20.23 (3.68)	-
F	23.52 (3.73)	22.66 (2.55)	23.52 (8.69)	20.00 (2.27)	18.71 (2.97)	-
A	1.79 (1.23)	2.28 (1.09)	2.28 (1.06)	1.88 (0.72)	2.15 (0.92)	-
MAC-SPA	56.77 (6.29)	53.06 (7.62)	-	-	51.58 (6.67)	54.06 (6.74)
MAC-SNA	36.48 (9.25)	40.04 (7.73)	-	-	31.34 (7.05)	29.37 (6.81)

Statistically significant differences were found between the Namibian and South African samples on Fighting Spirit (p=0.0021), Anxious Preoccupation (p<0.0001), Fatalism (p=0.0289) and Avoidance (p=0.0002). This suggests that Namibian patients show

comparatively higher fighting spirit as well as a sense of fatalism, whereas South African patients show comparatively higher levels of anxious preoccupation and avoidance.

With regard to summary adjustment scores, MAC-SPA results were 56.77 (S.D., 6.29) for the Namibian group and 53.06 (S.D., 7.62) for the South African group. Means for MAC-SNA were 36.48 (S.D., 9.25) for Namibia and 40.04 (S.D., 7.73) for South Africa. MAC-SPA scores in the current study appear to be comparable to results of Braeken et al., (2009) and Watson and Homewood (2008). However, scores on the MAC-SNA in this study appear to be higher than those in Braeken, Watson and colleagues studies, suggesting probable worse negative adjustment for the southern African cancer patients in the present study.

Correlations between the MAC and psychological morbidity

Table 5a shows the correlation between the origin MAC sub-scales and measures of psychological morbidity (the DT and HADS). Correlations in *bold italics* indicate statistically significant differences between the Namibian and South African samples. For both groups, Fighting Spirit correlated mostly negatively with the Distress Thermometer, HADS-Anxiety, HADS-Depression and HADS-Total. However, South African data yielded stronger correlations, and the difference between the Namibian and South African correlations were all significant. For the Hopelessness/Helplessness sub-scale, all correlations were in the positive direction. However, correlations with depression and HADS distress (both r= 0.38) for the Namibian sample were significantly stronger than for the South African group. Surprisingly, correlations for both the Anxious Preoccupation and Fatalism sub-scales were in opposite directions, with the Namibian data yielding positive correlations with measures of distress, anxiety and depression, while South African data yielded negative correlations. There were no statistically significant differences in the correlations of Avoidance, but correlation with the HADS-Anxiety was significant for the Namibian group (r=0.21).

Table 5a: Correlations between the original MAC sub-scales, DT and HADS

Psychological morbidity		MAC Subscales				
	Nationality	FS	H/H	AP	F	A
DT	Namibia	*0.04*	0.06	*0.16*	0.12	-0.12
	South Africa	*-0.37****	0.03	*-0.22**	-0.14	0.12
HADS-A	Namibia	*-0.06*	0.35***	*0.61****	*0.14*	0.21*
	South Africa	*-0.41****	0.12	*-0.005*	*-0.23***	0.004
HADS-D	Namibia	*-0.21**	*0.38****	*0.36****	*0.11*	0.09
	South Africa	*-0.51****	*0.09*	*-0.20**	*-0.26***	0.09
HADS-Total	Namibia	*-0.14*	*0.38****	*0.54****	*0.12*	0.17
	South Africa	*-0.46****	*0.10*	*-0.10*	*-0.26***	0.02

FF=Fighting Spirit; H/H=Hopeless/Helpless; AP=Anxious Preoccupation; F=Fatalism; A=Avoidance
DT=Distress Thermometer; HADS=Hospital Anxiety and Depression Scale; HADS-A= HADS Anxiety; HADS-D=HADS Depression; HADS-Total=HADS distress

* Significant at p≤0.05; ** Significant at p≤0.01; *** Significant at p≤0.001

Table 5b shows Pearson correlations between the MAC summary adjustment scores, the DT and HADS. For comparison, Watson and Homewood (2008) and Braeken et al.'s (2009) (*in script*) study results are included in the table.

Table 5b: Correlations between MAC summary scales, DT and HADS

Psychological distress measures	Nationality	MAC summary scales	
		MAC-SPA	MAC-SNA
DT	Nam.	0.06	0.14
	SA	-0.30**	0.05
	Watson& Homewood, 2008 (UK)	*x*	*x*
	Braeken et al.,2009 (Neth)	*x*	*x*
HADS-A	Nam.	-0.02	0.46**
	SA	-0.53**	0.12
	Watson& Homewood, 2008 (UK)	*-0.17*	*0.60*
	Braeken et al.,2009 (Neth)	*-0.27*	*0.63*
HADS-D	Nam.	-0.32**	0.34**
	SA	-0.67**	0.07
	Watson& Homewood, 2008 (UK)	*-0.26*	*0.52*
	Braeken et al.,2009 (Neth)	*-0.37*	*0.64*
HADS-Total	Nam.	-0.19	0.47**
	SA	-0.62**	0.10
	Watson& Homewood, 2008 (UK)	*x*	*x*
	Braeken et al.,2009 (Neth)	*x*	*x*

* p< 0.05; ** p <0.01

For South African patients, positive adjustment (MAC-SPA) correlated highly and significantly with anxiety (r= -0.53), depression (r= -0.67), and HADS distress (r= -0.62), and moderately with the DT (r= -0.30). South African correlations with anxiety and depression were stronger than those reported by Watson, Braeken and their colleagues. For the Namibian patients, only the correlation with HADS anxiety (r= -0.32) was significant. With regard to negative adjustment (MAC-SNA), all correlations for the South African group were not statistically significant, albeit positive. For the Namibian group, negative adjustment correlated significantly and positively with anxiety (r=0.46),

depression (r=0.34)), and HADS distress (0.47). Braeken, Watson and colleagues reported stronger positive correlations for anxiety and depression compared to the samples in the present study.

Correlations between adjustment to cancer, quality of life and self-efficacy for coping

Correlations between the MAC, quality of life and self-efficacy for coping with cancer for Namibian and South African patients are shown in Tables 6a and 6b respectively. For both groups of cancer patients, the correlations between FS and all facets of the WHOQOL-Bref were significant and positive. Although South African data yielded stronger correlations, there were no statistically significant differences except for the WHOQOL social relationship domain (p=0.0072). For H/H, all correlations were negative (except for the 1-item general perception of quality of life for SA), and the Namibian data yielded generally stronger correlations. Whereas AP and Fatalism correlations were primarily negative for Namibia, they were primarily positive for South Africa. With the exception of the WHOQOL physical domain, differences between Namibia and South Africa with regard to the Fatalism subscale correlations were significant. For Avoidance, Namibian data were mixed with regard to the directions of the correlations, whereas the South African data yielded all negative correlations. With regard to global QoL correlations were: FS, r=0.41; H/H, r=-0.44; AP, r=-0.19; F, r=-0.17; A, r=-0.09 for the Namibian group and FS, r=0.49; H/H, r=-0.24; AP, r=0.02; F, r=0.27; A, r=-0.24) for the South African group. Kruskal-Wallis tests revealed no significant difference in these correlations except for Fatalism (p=0.0009), suggesting that South Africa patients with higher global quality of life reported significantly higher fatalism compared to their Namibian counterparts. However this correlation (r=0.27) was small.

Self-efficacy for coping with cancer correlated strongly and positively with fighting spirit for both Namibian (r=0.51) and South African (0.59) patients. There were no significant differences in these correlations for the two groups. For the Anxious Preoccupation, Fatalism and Avoidance sub-scales, correlations for SA were positive and significant, whereas primarily negative and non-significant for Namibia. Kruskal-Wallis tests

revealed statistically significant differences in correlations of self-efficacy to Anxious Preoccupation (p=0.0009), Fatalism (p=0.0007), and Avoidance (p=0.0208) for the two groups of patients.

Table 6a: Relationship between MAC, quality of life and self-efficacy for coping (Namibia)

Variables	Original MAC sub-scales						MAC Summary Subscales	
	FS	H/H	AP	F	A		MAC-SPA	MAC-SNA
WHOQOL-Bref								
Gen. QoL	0.22*	-0.22*	-0.28**	-0.15	0.004		**0.22***	**-0.31****
Gen. Health	0.22*	-0.21*	-0.18	-0.11	0.10		**0.25****	**-0.25**
Physical	0.28**	-0.21*	0.004	-0.12	0.09		**0.27****	**-0.17**
Psychological	0.35**	-0.48***	-0.30**	-0.09	-0.30**		**0.44****	**-0.50****
Soc. Relationships	0.24*	-0.28**	-0.25*	-0.22*	-0.20*		**0.19**	**-0.39****
Environment	0.27*	-0.33***	-0.04	-0.14	-0.03		**0.27****	**-0.29**
Global QoL	0.41***	-0.44***	-0.19	-0.17	-0.09		**0.41****	**-0.45****
Coping Self-efficacy								
CBI-Total	0.51***	-0.09	0.03	-0.0005	-0.13		**0.56****	**-0.16**

* Significant at p≤ 0.05; ** Significant at p≤ 0.01; *** Significant at p≤ 0.0001   *p<0.05; **p<0.01

Table 6b: Relationship between MAC, quality of life and self-efficacy for coping (South Africa)

Variables	Original MAC sub-scales						MAC Summary Subscales	
	FS	H/H	AP	F	A		MAC-SPA	MAC-SNA
WHOQOL-Bref								
Gen. QoL	0.45***	0.17	0.22*	0.29**	-0.18*		**0.50****	**0.09**
Gen. Health	0.43***	-0.09	0.006	0.26**	-0.22*		**0.47****	**-0.14**
Physical	0.37***	-0.28**	0.02	0.17	-0.27**		**0.52****	**-0.25****
Psychological	0.30**	-0.33**	-0.11	0.10	-0.02		**0.36****	**-0.21***
Soc. Relationships	0.54***	-0.06	0.14	0.29**	-0.25**		**0.57****	**-0.10**
Environment	0.48***	-0.11	0.13	0.28**	-0.16		**0.57****	**-0.04**
Global QoL	0.49***	-0.24**	0.02	0.27**	-0.24**		**0.64****	**-0.16**
Coping Self-efficacy								
CBI-Total	0.59***	0.02	0.45***	0.43***	0.18*		**0.66****	**0.08**

* Significant at p≤ 0.05; ** Significant at p≤ 0.01; *** Significant at p≤ 0.0001   *p<0.05; **p<0.01

Positive mental adjustment (MAC-SPA) correlated positively with all facets of quality of life for the study sample, with Pearson's r ranging from 0.19 to 0.41 for Namibia and from 0.36 to 0.64 for SA. This suggests that in the present study, patients with overall

higher positive adjustment report higher quality of life. Correlations between MAC-SPA and QoL facets were generally stronger for the South African group. For negative adjustment, correlations with the 4 subscales of the WHOQOL-Bref were negative for both the Namibian (-0.17 to -0.50) and South African (-0.04 to -0.25) groups. MAC-SNA correlation with global quality of life was negative and significant for Namibia (r= -0.45), but non-significant for SA (r=-0.16). Self-efficacy for coping with cancer correlated strongly and positively with MAC-SPA for both the Namibian (r=0.56) and SA (r=0.66) groups, but not significantly with MAC-SNA (Namibia, r= -0.16; SA, r=0.08).

Correlations between the MAC scale and socio-demographic variables
For the Namibian sample, age correlated significantly with fatalism (r=0.20; p=0.04). For SA there were no significant correlations between age and the original MAC sub-scales. Time since diagnosis correlated significantly with helplessness (r=0.22; p=0.03) and anxious pre-occupation (r=0.25; p=0.01) for the Namibian group, and significantly with fighting spirit for the South African group (r=0.18; p=0.046).

With regard to summary adjustment results, age correlated significantly and negatively with MAC-SPA for Namibian patients (r= -0.22; p=0.03), suggesting better overall positive adjustment for younger cancer patients. On the contrary, age correlated positively, but non-significantly (r=0.17; p=0.06), with overall positive adjustment for South African patients. No significant correlations were found between age and MAC-SNA for both groups of patients. Similarly, time since diagnosis did not yield significant correlations with the MAC-SPA or MAC-SNA for the entire study sample.

<p style="text-align:center;">**DISCUSSION**</p>

Cronbach's αs for the study sample were high and acceptable for the fighting spirit sub-scale. However, the remaining original MAC sub-scales yielded primarily low alphas for both the Namibian and South African data, suggesting probable low internal consistencies for these sub-scales of the translated Oshiwambo and Sesotho versions of the MAC scale. A possible explanation is that aspects related to hopelessness, anxious pre-occupation and avoidance are not sufficiently captured, or that these responses are

expressed differently within these cultural settings. It has been argued previously that responses to cancer are processes that occur within a specific socio-cultural context (Costa-Requena & Gil, 2009; Watson & Homewood, 2008), and further research is needed in order to understand these aspects within cultural contexts in southern Africa. For example, in contrast to findings of some researcher (Ferrero et al., 1994; Mystakidou et al., 2005; Nordin et al., 1999), anxious preoccupation and fatalism correlated positively with fighting spirit. Given the high alphas obtained for this study for the summary adjustment scales recently suggested by Watson and Homewood (2009), the MAC-SPA and MAC-SNA might be a potentially superior option to evaluate overall adjustment to cancer in these populations, and further research is recommended. As expected, positive and negative adjustment correlated highly and positively with fighting spirit and hopelessness respectively for both Namibian and South African cancer patients, supporting previous research (Breaken et al., 2009; Watson & Homewood, 2008).

With regard to the performance on the MAC hopeless/helplessness, South African and Namibian cancer patients did not differ, and their scores were similar to those of black breast cancer patients (but higher than those of a comparable white sample), in Schlebusch and Van Oers'study (1999). Similarly, hopelessness for both Namibian and South African patients appears to be higher compared to patients elsewhere (Cayrou et al., 2003; Nordin et al., 1999; Schou et al., 2005; Schwartz et al., 1992; Watson et al., 1989). This might suggest a probable mal-adaptive response to cancer in this population which is associated with psychological distress (Costa-Requena & Gil, 2009) and could possibly be addressed and emolliated through psychosocial intervention.

Significant differences between Namibian and South African cancer patients on fighting spirit, anxious preoccupation, fatalism and avoidance suggest differences in response to cancer among these patients, and could probably be due to socio-cultural differences in these groups of cancer patients. This is further supported by the differences in magnitude of the correlations with the HADS, particularly for fighting spirit, anxious preoccupation and fatalism. For example, whereas correlations between fatalism and psychological morbidity (anxiety, depression and psychological distress) were positive for Namibians, it

was negative for South African patients. This is a potential aspect that needs further investigation. Overall positive adjustment correlated significantly, strongly and negatively with anxiety, depression and psychological distress for South Africans, but only moderately with depression for Namibians. Similarly, overall negative adjustment correlated significantly, positively and moderately with anxiety, depression and psychological distress for Namibia, but not for South Africa. Inconsistencies in the strength of the correlations between MAC-SPA and anxiety and depression were previously reported (Braeken et al., 2009; Watson & Homewood, 2008). Although overall negative adjustment's relations to anxiety and depression for Namibia is consistent with Breaken et al. (2009) and Watson and Homewood's (2008) results, this is not the case with the South African results in this study.

Fighting spirit correlated significantly with global quality of life and self-efficacy for coping with cancer for both Namibian and South African patients, suggesting that patients who respond to a cancer diagnosis with higher fighting spirit experience greater quality of life and self-efficacy. Similarly, hopelessness correlated negatively with QoL for the entire study sample, suggesting that patients who respond with hopelessness experience lower QoL. This is supportive of previous research (Merluzzi et al., 1997; Schnoll et al., 1998; Schou et al., 2005). It was expected that hopelessness, anxious preoccupation, fatalism and avoidance would correlated significantly and negatively with self-efficacy, but this was not the case for patients in this study and contrasts previous findings (Merluzzi et al., 1997). For example in this study, South African patients with higher self-efficacy for coping also reported significantly higher anxious preoccupation, fatalism and avoidance. There are a number of potential explanations. Slightly more South African cancer patients in this study were classified as anxious (see article 2 of this thesis), probably accounting for high anxiety in this sample. Many cancer patients in developing countries often get diagnosed with advanced cancer when prognosis is poor. It is possible that feelings of fatalism are a reflection of this reality, and hence fatalism could be a probable realistic perception within this context. Disease stage was not investigated in this study and could probably explain this anomaly. Cancer has been viewed as a disease of the western world and stigma might still be associated with a

cancer diagnosis in some communities. It has been suggested that for some patients within the South African black cultural context, complaining is discouraged (Schlebusch & Van Oers, 1999). This might explain the avoidance response, and need further investigation.

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LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

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The primary aim of this study was to explore and then compare adjustment to cancer between Oshiwambo-speaking Namibian and Sesotho-speaking South African women diagnosed with breast and cervical cancer. To this effect, the original MAC scale was used. Although the fighting spirit sub-scale yielded good internal consistency, this was not the case for the hopelessness, anxious preoccupation, fatalism and avoidance, hence limiting interpretation of results on these sub-scales. In view of this, future research could explore the psychometric properties of the MAC scale, using larger samples. An alternative approach would be to use the summary scales as recently suggested by Watson and Homewood (2008), and particularly in light that these subscales yielded good internal consistencies in this study. Respondents in this study were Oshiwambo- and Sesotho speaking breast- and cervical cancer patients, and results of this study can not be generalized to other cancer patient groups. Therefore it is recommended that future research include patients from various language and cultural groups and varying cancer diagnoses. Disease stage probably impact response to cancer and this needs further investigation.

<div align="center">

CONCLUSION

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The aim of this study was to explore and compare the mental adjustment of Oshiwambo-speaking Namibian and Sesotho-speaking South African women with breast and cervical cancer. The study further aimed to explore the relationships between adjustment to cancer and psychological morbidity, quality of life and self-efficacy for coping with cancer. Results suggest comparable and probable low hopeless/helplessness for both groups. Although Namibian patients score higher on fighting spirit, they also obtained higher fatalism scores compared to South African patients. The directions of the correlations of fighting spirit and hopelessness with psychological morbidity were similar

for the two study group. However, the magnitudes of the correlations were different. Similarly, FS and H/H's correlations with quality of life and self-efficacy yielded consistent results for the two groups. Overall, results of this study suggest that both Namibian and South African cancer patients with higher fighting experience less psychological morbidity, higher quality of life, and are more efficacious in coping with cancer. Patients with higher hopeless/helplessness experience more psychological morbidity, lower quality of life and are less efficacious in coping with cancer. Anxious preoccupation, fatalism and avoidance yielded contradictory results for the two groups. Further exploration is needed in order to understand these aspects. Given the good internal consistency of the adjustment summary scales suggested by Watson & Homewood (2008), and consistency of results for these new scales, further research is recommended. Psychosocial interventions could be useful in enhancing fighting spirit and reducing hopeless/helplessness, in order to enhance psychological well-being of cancer patients in the southern African settings explored in the current study.

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