

National Institute of Integrative Medicine



Newsletter
February, 2010

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Saturday February 13, 2010, saw NIIM featured in The Age MyCareer section. NIIM's first feature in a major newspaper, the article focused on Professor Sali's discussion of the future of education in Integrative Medicine and the role NIIM would play in catering to the growing number of doctors seeking education in this field.

NIIM has also been featured in the Progress Press and the Shepparton News. To view NIIM press articles, visit www.niim.com.au.

The Institute has seen a growing number of Academic Support Staff join the NIIM team. Dr Stephen Davies and Dr Bruce Jones have been appointed as Honorary Senior Lecturers, acting on a volunteer basis, along with Dr Michael Daly.

The NIIM Grand Opening, held in November 2009, marked the beginning of a steady influx of volunteers looking to assist at the Institute and Clinic in a variety of ways. This much needed support has been an invaluable addition to the Institute and has been crucial in relieving some of the workload of our Number One Volunteer, Professor Avni Sali.

Clinic

The highly anticipated NIIM IV and Chelation Therapy Clinic opened in January of this year. The Clinic has seen great success in its first months, providing the only IV and Chelation Suite in the Inner Eastern suburbs, and the warm, professional service patients have come to expect of the NIIM Wellness Clinic.

The soon to be operational Thermography (RTM) breast screening suite has been established at the NIIM Wellness Clinic. This non-invasive, non-toxic screening method takes approximately 15-30 minutes, creating a quick and simple patient experience.

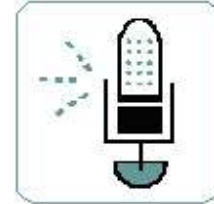
With the support of Robert Kirby and Village Roadshow, NIIM is currently involved in the registration of a Photodynamic Therapy (PDT) cancer therapy suite. Some exciting preliminary results have been obtained with PDT trials, and NIIM aims to expand the research base associated with this therapy and offer it at the NIIM Wellness Clinic in future.

NIIM is also researching into a well known alternative Cancer treatment – Hyperthermia. This is used widely in Europe, and is growing in popularity in the USA. Hyperthermia trials suggest that this treatment can double the prognosis for

some cancers, for example cervical cancer, and can improve survival for most cancers.

NIIM is currently investigating the possibility of providing the Neurotherapy technique at the NIIM Wellness Clinic. Neurotherapy, an EEG based bio-feedback system, has been found to be effective in treatment of ADHD and ADHD like symptoms in children. There are implications that Neurotherapy may also be useful in influencing the progression of age-related dementia. NIIM Cognitive Neurosciences Consultant, Professor Richard Silberstein of the Swinburne Brain Sciences Institute, has been involved in the research and implementation of this Neurotherapy in Australia.

The NIIM Wellness Clinic is pleased to announce the addition of two new Integrative General Practitioners – Dr. Pamela Dagley and Professor Robert Allen. Both Pamela and Robert have studied and practiced Integrative Medicine from its early beginnings in Australia. This addition has established the NIIM Wellness Clinic as having the largest number of Integrative General Practitioners under one roof.



Seminars and Presentations

December 2009 – In December 2009, as President (now former) of the Australasian Integrative Medicine Association (AIMA) Professor Avni Sali travelled to Auckland, New Zealand, to deliver the opening presentation at the AIMA Annual Conference, and also participated in a panel discussion to close. Later that month, Professor Sali was invited speaker at the Western Australia Cancer Council Annual Conference in Perth. The Western Australia Cancer Council is the only Cancer Council to incorporate an Advisory Committee on Complementary Medicine in its operation. Professor Sali delivered a public lecture and a presentation to attending oncologists, both of which were received exceptionally well.

Also over the New Year period, NIIM Business Manager Steve Bunce continued to teach at meditation retreats, helping to start 2010 on the right foot.

February 2010 – The International Council of Integrative Medicine (ICIM), of which Professor Sali is President, held its Annual General Meeting at the NIIM premises. NIIM Business Manager Steve Bunce has been elected ICIM Registrar.

March 2010 – Professor Sali will travel as invited speaker to Kuala Lumpur. Also in March, NIIM will host a Medico-Legal workshop in order to support doctors working in Integrative Medicine who are being challenged primarily due to longer consultations with patients. The workshop will feature two of the country's leading experts in Medico-Legal affairs – Mary Edquist of Monahan and Rowell Lawyers and Elizabeth Brophy, a barrister who also holds a PhD in Complementary Medicine.

Snapshot – Fish Oil may prevent psychotic episodes

According to results of a small, randomized clinical trial Omega – 3 polyunsaturated fatty acids, when taken daily, were found decrease the likelihood psychotic episodes in high risk psychiatric patients.

investigators reported in the February *Archives of General Psychiatry* that less than 5% of patients given daily doses of Omega – 3 polyunsaturated fatty acids had psychotic episodes, versus more than 25% of patients given placebo ($p=0.007$),

Researchers found, compared with the placebo group, patients given Omega – 3 (derived from fish among other sources) showed a greater reduction in general symptoms, both positive and negative, resulting in improved functionality.

“The present trial strongly suggests that Omega – 3 polyunsaturated fatty acids may offer a viable prevention and treatment strategy with minimal associated risk in young people at ultra high risk of psychosis, which should be further explored.” G Paul Amminger, MD, of the medical University of Vienna concluded.

Clinical trials have demonstrated beneficial effects of Omega – 3 polyunsaturated fatty acids supplementation in patients with schizophrenia. It has been proposed that dysfunctional fatty acid metabolism may be a contributing factor in many psychotic conditions.

Snapshot – Low Vitamin D and Asthma

Low levels of vitamin D in children has been associated with higher rates of airway hyperactivity, increased inhaled corticosteroid use and higher rates of asthma related hospitalisation. In adult asthmatics a correlation has been found between low levels of vitamin D and poor lung function, increased airway reactivity and a reduced response to steroid treatment.

A cross sectional study of 161 Costa Rican children is the first to directly link clinical asthma severity to low Vitamin D levels. Subsequent In vitro experiments had found that the presence of vitamin D affected airway cells response to steroidal medication.

Snapshot – Sun exposure during pregnancy may strengthen baby's bones

The children of women who increase their sun exposure during the last months of their pregnancy, have been found to more likely have stronger, healthier bones, the benefits of which may last their whole lives.

A recent study reported by the *Journal of Clinical Endocrinology and Metabolism*, examined bone scans on almost 7,000 10-year-olds and found children whose mothers had their last trimester of pregnancy during the sunnier months tended to have larger bones.

Scientists explained that this is likely due to increased levels of Vitamin D. Vitamin D, is naturally manufactured by the skin when exposed to sunlight. It is also found in foods such as salmon, mackerel and tuna. The findings are significant as those with stronger bones in early life, have less risk of fracture in later life. Studies have shown that pregnant women are frequently deficient in Vitamin D and just a few minutes of sun exposure as often as possible could significantly boost their Vitamin D levels.

Contact

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Snapshot – Curcumin may prevent Nicotine-related Cancers

Curcumin, an organic compound commonly used in curries and Indian cooking may inhibit the adverse effects caused by tobacco use in patients with head and neck cancer who continue to smoke. The study, which was presented at the 2009 American Academy of Otolaryngology – Head and Neck Surgery Foundation Annual Meeting in San Diego.

The study used an in vitro model of a variety of head and neck cancer cell types. The cancer cells were pre-treated with curcumin and the nicotine was introduced to simulate a clinical situation. The results were that the curcumin was able to block nicotine from activating cancer causing cells.

Each year an estimated 500,000 new cases of head and neck cancers are diagnosed worldwide. There is a high rate of recurrence, as many patients continue to smoke even after successful treatment. The researchers have found a safe, bioactive food compound that could not only be used as a chemopreventive agent, but could be used to block nicotine's harmful effects.

Snapshot – Tai Chi Benefits for Seniors

A gentle martial art combining slow movement and meditation, *tai chi* consists of a series of postures, motions and breathing exercises designed to build strength, restore balance and increase flexibility while helping a person attain a heightened state of being.

Tai chi is suitable for people of all ages and fitness levels. Due to its gentle nature is particularly beneficial and popular among the elderly. In studies, carried out at the Case Western Reserve University in Cleveland, Ohio and the Oregon Research Institute, among the older population it has been found that elderly with arthritic conditions that practice *tai chi* can reduce pain levels therefore increase mobility and physical functioning.

Investigators found that people who practice *tai chi* showed significant physical improvement compared to those who remained inactive.

In an interview with Reuters Health, researchers explained that *tai chi* may reduce pain by increasing circulation, which could help stimulate the repair of damaged joints and joint surfaces.

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Cognitive Decline in At Risk Adults and the Effects of a Multivitamin/Mineral Supplement

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Introduction

Ageing is a universal process to all life forms. In humans the most obvious and commonly recognised consequence of ageing is energy decline concomitantly with deficits in cognitive functioning. These changes can equate to disruption of episodic memory a commonly encountered trait in ageing populations. The scientific literature suggests that nutrition plays an important part in slowing down cognitive decline and that therefore this process may be improved with a multi-micronutrient intervention. The clinical rationale for this improvement is thought to be partly due to a resultant reduction in blood homocysteine levels. Multivitamins/minerals are commonly used supplements in the general population but their effects on cognition are contentious.

Methodology

This study investigated the effects of a multivitamin/mineral supplementation on cognition in adults medically determined to be at risk of cognitive decline. The study was a double blind, randomized, placebo controlled study with 60 healthy male participants. Cognitive testing was conducted prior to and then following 8 weeks supplementation with either a multivitamin/mineral formula or placebo. Participants were supplemented with 1 tablet daily, during or immediately after a meal. Blood samples for testing (red blood cell folate; vitamin B₁₂; homocysteine) were collected from participants in the morning following an overnight fast.

Results

Multivitamin/mineral supplementation significantly improved performance on an episodic memory task ($p < .01$), with no change in the placebo group. Moreover blood homocysteine levels were significantly reduced following supplementation with the multivitamin/mineral preparation ($p < .001$) but not with placebo.

Discussion

Eight weeks supplementation with a multivitamin/mineral preparation was able to improve performance on an episodic memory task. Multivitamin/mineral supplements may be useful in enhancing cognition in people at risk of cognitive decline. Effects of supplementation on other cognitive tasks will be also discussed.

“...blood homocysteine levels were significantly reduced following supplementation ...”



Evaluation of the Effects of a Psychosocial Intervention on Mood, Coping, and Quality Of Life in Cancer Patients

Nicola Reavley, PhD, Julie F Pallant, PhD, and Avni Sali, MBBS, PhD

It was hypothesized that participation in a psychosocial intervention incorporating meditation, social support, positive thinking, and a low-fat, vegetarian diet would have beneficial effects on mood, coping, and quality of life (QOL) in cancer patients. This article describes the sociodemographic, medical, and psychological characteristics of participants in a psychosocial intervention designed for cancer patients. It also describes program impact in terms of Profile of Mood States, Mini-Mental Adjustment to Cancer, and Functional Assessment of Chronic Illness Therapy. Compliance with program recommendations for 3 months and effects on

adjustment were also explored. Improvements in all measures were found at program completion, with spiritual well-being particularly linked to improvement in QOL. The results suggest that the program has significant beneficial effects on adjustment but that these may not be fully maintained at follow-up, possibly because of difficulty in incorporating program recommendations into everyday life, increasing disease severity, and lack of accountability.

Keywords: psychosocial intervention; meditation; quality of life; coping; spirituality; emotional well-being

Introduction

Although cancer is the leading cause of death in Australia, improvements in screening, detection, and treatment mean that 5-year survival rates for some of the most common cancers are now more than 80%.¹ As a result of this, increasing numbers of people are surviving the acute phases of the disease and must learn to live with cancer as a chronic illness. In this context, researchers in the medical and behavioral sciences have explored the process of adjustment to cancer, in which a person learns to cope with the psychological effects of the disease, solve cancer-related problems, and gain control over life events affected by cancer.

A diagnosis of cancer has the potential for enormous physical and psychosocial consequences. Patients may experience various psychosocial problems at different stages of their illness,²⁻⁵ and distress may persist long after initial diagnosis and treatment.^{6,7} Evidence suggests that psychological adaptation to cancer is influenced by various disease, demographic, and psychosocial factors,

including personality factors, coping abilities, and social support.⁸ Because interpretations of life events vary so widely between people, much research on adjustment to cancer has centered on an individual's coping response to the cancer experience. Coping patterns, including attitudes toward illness, predict long-term adjustment and the ability to live with illness.⁹⁻¹² Social support may also have an important role to play in helping cancer patients adjust to the disease.¹³⁻¹⁵

Concern about the well-documented negative psychosocial consequences of cancer has led to the development of psychological treatment programs for patients. They include cognitive and behavioral interventions, supportive psychotherapy, informational and educational treatments, social support by nonprofessionals, and other therapies such as art and music therapies. It is generally agreed that psychosocial support for cancer patients is beneficial.^{16,17} However, it is less clear which type of therapy is most beneficial for which patients. In addition, as part of a growing trend of interest in alternative medicine, many cancer patients explore complementary and alternative treatments. Lifestyle-oriented approaches are among the most popular, and interventions that address the mind to affect the body are also of great interest.^{18,19}

For many people, the cancer experience raises concerns about the meaning of life and death, and for spiritually oriented people, these concerns evoke spiritual issues.²⁰ Anecdotal reports suggest that such concerns

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play a role in motivating patients to participate in interventions. Several studies have shown that religion and spirituality are significantly associated with subjective well-being²⁰; improved adjustment to cancer^{21,22}; the management of symptoms²³; reduced hostility, anxiety, and social isolation^{24,25}; hope and positive mood states^{26,27}; and overall well-being and quality of life (QOL) in patients with several types of cancer, including breast cancer,^{28,29} gynecological cancer,³⁰ and prostate cancer.³¹ Brady et al³² found spiritual well-being to be associated with QOL to the same degree as physical well-being. The significant association between spirituality and QOL remained after controlling for core QOL domains as well as other possible confounding variables. Furthermore, spiritual well-being was found to be related to the ability to enjoy life even when disease symptoms had an impact on other areas of functioning.

The increasing popularity of nonmainstream cancer treatments raises complex ethical and practical issues for both patients and the medical profession. In view of the prevailing commitment to evidence-based medicine, it is vital to scientifically research complementary treatments and ensure that both patients and practitioners are well-informed. There is also a need to better understand the characteristics of those who are drawn to complementary treatments and the mechanisms by which such interventions might exert their effects.

The programs run by The Gawler Foundation are designed to help cancer patients and their families learn how to cope with cancer. The foundation is located in a purpose-built center in a rural setting approximately 70 km from Melbourne, Australia. It is one of a small number of centers that have been established to provide such psychosocial interventions for cancer patients in a residential setting. The programs incorporate relaxation, stillness meditation as developed by Ainslie Meares³³; gentle yoga plus encouragement to exercise daily; a positive state of mind; a low-fat vegetarian diet; overcoming obstacles to peace of mind; finding meaning and purpose in life; and drawing on effective support. The 10-day residential program is run by program founder and cancer survivor Ian Gawler and qualified, experienced counseling and medical staff and costs approximately AU\$2500. Attendance at the programs with a partner/support person is recommended where possible, and group size is typically around 30 to 40 people.

The hypotheses tested in the current study were as follows:

1. Participation in a psychosocial intervention such as that described can lead to improvements in emotional well-being, mental adjustment to cancer, and QOL, and lower salivary cortisol levels.
2. During the follow-up period, greater compliance with program recommendations would be linked to

greater emotional well-being, more effective coping, and greater QOL.

Method

Participants planning to attend the residential program were sent a letter explaining the purpose of the study. On arrival at the foundation, program participants were again reminded about the study by the staff and referred to the principal investigator if they wished to be involved. These participants were given time to fill out an initial questionnaire of the standardized measures before the commencement of the program. Ethics approval for the study was obtained from Swinburne University of Technology Ethics Committee.

At the end of the 10-day residential program, those participants who had filled in the questionnaires on the first day were approached by the researcher and given the same set of standardized questionnaires and also a questionnaire assessing their meditation experience for the duration of the program. They were also given a reply-paid envelope and asked to post these back to the principal investigator as soon as possible.

At 3, 6, and 12 months after completion of the intervention, participants were posted a package containing the standardized instruments, a questionnaire designed to assess both compliance with the recommendations of the programs and meditation experience and a reply-paid envelope in which these could be sent back.

Questionnaires

The initial questionnaire consisted of questions covering sociodemographic, disease, and treatment details. A single-item measure of social support was also included, which Blake and McKay³⁴ found to be a good predictor of mortality. The item reads "How many people do you have near you that you can readily count on for help in times of difficulty, such as watch over children or pets, give rides to hospital or store, or help when you are sick." Response options are 0, 1, 2 to 5, 6 to 9, or 10 or more. Responses of 0 or 1 indicate a low tangible assistance, 2 to 5 or more indicate high assistance. The lifestyle assessment section included questions about moderate, hard, and very hard physical activity undertaken by participants in the preceding week. These types of questions have been used in other studies as they are relatively simple and have been validated against physiological measures of fitness.³⁵ Other questions covered meditation history and details of current practice, attendance at church or other religious institution, participation in psychosocial interventions, dietary habits, and lifestyle changes.

The postprogram questionnaires included a number of questions aimed at assessing the depth and quality of

meditation practice during the program along with the standardized measures given before program commencement. The follow-up questionnaire included questions about meditation type, time spent practicing, and the depth and quality of meditation practice. Other questions included those on exercise, diet, participation in psychosocial interventions, and treatment in the last 3 months.

Measures

The following validated measures were used to assess patients at baseline before the residential program began; after 10 days when the program ended; and at 3, 6, and 12-month follow-up.

Profile of Mood States (POMS). The POMS³⁶ is a 65-item, self-administered, adjective checklist designed to measure affective states. It provides a score for Total Mood Disturbance (TMD), ranging from -32 (best) to 200 (worst), as well as a score for each of 6 subscales: Tension-Anxiety, Depression-Dejection, Anger-Hostility, Vigor-Activity, Fatigue-Inertia, and Confusion-Bewilderment. The POMS is self-administering and takes about 3 to 5 minutes to complete. On all subscales except Vigor-Activity, a higher score indicates poorer outcome. It has been shown to have good internal consistency (ranging from .87 to .95 for the subscales), test-retest reliabilities that range from 0.65 to 0.74, and concurrent validity.³⁶ It has also been shown to be sensitive to emotional changes within patient groups.³⁷ The POMS has been widely used in intervention studies with cancer patients for measuring mood outcome.³⁸⁻⁴⁰ In this sample, Cronbach's α for the TMD score was .89, and it was .85 for Tension-Anxiety, .88 for Depression-Dejection, .80 for Anger-Hostility, .88 for Vigor-Activity, .90 for Fatigue-Inertia, and .78 for Confusion-Bewilderment.

The Functional Assessment of Chronic Illness Therapy—Spirituality (FACIT-Sp). The FACIT-Sp is a QOL measure that focuses on issues of managing a chronic illness. It has been developed with an emphasis on patients' values and concerns rather than on those issues that are of clinical concern to medical practitioners. It is self-administered and ranked on a 5-point Likert Scale. The FACIT-Sp comprises the FACT-G (general) and 12 additional items specifically related to spirituality. The FACT-G is a 27-item general scale that measures 4 areas of QOL: Physical Well-being, Social Well-being, Emotional Well-being, and Functional Well-being. The FACT-G has undergone rigorous validation and has been shown to have good concurrent and construct validity, internal consistency, and test-retest reliability.^{41,42} It takes around 5 to 10 minutes to complete. Normative data exist for cancer patients.^{43,44} The Spiritual Well-being Scale of the FACIT focuses on the existential aspects of spirituality and faith. It has 12

items and taps into the dimensions of religiosity (faith factor) and spirituality (meaning and peace factor), and the wording of items does not assume a belief in God. Items cover issues such as having a reason to live, finding purpose or meaning in one's life, finding strength or comfort in one's faith, and the effect the illness has on one's faith. The internal consistency for this measure was .87,⁴¹ and further validity and reliability testing demonstrates that the FACIT-Sp is a psychometrically sound measure of spiritual well-being for people with cancer.⁴⁵ In this sample, Cronbach's α coefficients were .75 for the total FACIT-Sp and .62 for FACT-G, .75 for Physical Well-being, .79 for Social Well-being, .58 for Emotional Well-being, .74 for Functional Well-being, and .75 for Spiritual Well-being.

The Mini-Mental Adjustment to Cancer (Mini-MAC). The Mini-MAC Scale⁴⁶ is a refined and shortened version of the MAC Scale⁴⁷ and measures a patient's attitude toward dealing with cancer. Specifically, it assesses the psychological adjustment styles of Fighting Spirit, Fatalism, Helplessness-Hopelessness, Anxious Preoccupation, and Cognitive Avoidance. The 29 items are rated on a 4-point Likert Scale ranging from 1 = *definitely does not apply to me* to 4 = *definitely applies to me*. Higher scores on these subscales represent higher endorsement of the attitude associated with the particular subscale. Internal consistency is sound, with Cronbach α coefficients reported to be .76 for Fighting Spirit, .87 for Helplessness-Hopelessness, .74 for Cognitive Avoidance, .62 for Fatalism, and .88 for Anxious Preoccupation. The mini-MAC has been validated on samples of cancer patients in several countries, including Greece,⁴⁸ Hong Kong,⁴⁹ and Italy.⁵⁰ In this sample, Cronbach's α s were .52 for Fighting Spirit, .78 for Helplessness-Hopelessness, .62 for Fatalism, .81 for Cognitive Avoidance, and .85 for Anxious Preoccupation.

Statistical Analysis

The SPSS (v13) data analysis software package was used for statistical analysis. In the present study, it was considered important to interpret all results, with statistical significance used as an additional descriptive tool rather than as a watertight criterion. Thus, Bonferroni adjustments for multiple comparisons were not made. However, as recommended by Stevens,⁵¹ the α level was increased to a more stringent one ($P < .01$). Where Pearson product moment and Spearman rank order correlation coefficients were calculated, only those relationships with a correlation coefficient greater than 0.30 were considered relevant.⁵² The scores of the POMS Depression-Dejection, Anger-Hostility, and Fatigue-Inertia; Mini-MAC Helplessness-Hopelessness and Fighting Spirit; and FACIT-Sp Physical Well-being and Social Well-being subscales were not

Table 1. Sociodemographic Characteristics of Participants

Gender	N	Mean (SD)			Maximum
		Age/Years	Median	Minimum	
Female	75	50.4 (9.87)	50	24	78
Male	37	53.2 (11.07)	55	23	73
Total	112	51.3 (10.32)	52	23	78

	N	Percentage
Relationship Status		
De facto	14	12.5
Divorced	11	9.8
Married	69	61.6
Separated	2	1.8
Single	12	10.7
Unknown	1	0.9
Widowed	3	2.7
Total	112	100.0
Education level		
Primary	1	0.9
Secondary	39	34.8
Tertiary	49	43.8
Postgraduate	22	19.6
Unknown	1	0.9
Total	112	100.0
Employment status		
Working	75	67.0
On leave	1	0.9
Semiretired	1	0.9
Retired	32	28.6
Unknown	3	2.7
Total	112	100.0

normally distributed, and for ease of interpretation, non-parametric statistical procedures, including Wilcoxon signed rank tests, were used when comparing all variables. All change scores were found to be normally distributed, and parametric tests were used for the analyses of these scores.

Results

Sample Characteristics

The study involved 112 patients recruited consecutively over a period of 14 months. This represented a response rate of approximately 50%. A description of the sociodemographic characteristics of participants is given in Table 1. Overall, 68 (60.7%) participants had metastatic disease, and the median time since diagnosis was 15 months (mean [M] = 26.9, [SD] = 36.5). The most common type of cancer among participants was breast cancer, with 31 women (27.7% of participants) having been diagnosed with this disease. Only 7 (6.3%) reported having had no conventional treatment; 78 (69.6%) participants reported receiving 2 or more treatments, and when asked about

current treatment, 43 (38.4%) participants reported still undergoing conventional treatment, whereas 53 (47.3%) patients were not. In the current study, 92 (82.1%) participants reported a high level of support, whereas 15 (13.4%) reported a low level.

Precomparisons and Postcomparisons

Group median at baseline and after program completion were compared for all measures using Wilcoxon signed rank tests. The results are given in Table 2. Despite the relatively low baseline POMS measures, scores on all subscales (other than Vigor-Activity) were reduced, indicating lower mood disturbance after program completion. As indicated in Table 2, the mean POMS TMD scores were significantly reduced after the intervention, and scores on the subscales Tension-Anxiety, Depression-Dejection, Anger-Hostility, Fatigue-Inertia, and Confusion-Bewilderment were also significantly reduced. The score on the Vigor-Activity subscale was significantly greater. All changes in POMS measures were therefore as hypothesized.

All Mini-MAC Scale scores, with the exception of Fatalism, showed improved coping after the intervention. All FACIT-Sp QOL measures (other than social functioning) were significantly improved after program completion (see Table 2). Thus, changes in QOL measures were largely as hypothesized.

Comparison of those who improved after the intervention with those who did not. To further understand the characteristics of those who improved after the intervention and those who did not, the sample was divided into those whose POMS TMD scores showed improved mood after program completion and those whose POMS TMD scores showed worse emotional functioning. This was also done for the FACIT-Sp.

Mean baseline POMS TMD scores were significantly different between the 2 groups, with higher scores in those who improved than in those who worsened (improved = 17.66 [SD = 23.02]; worsened = -2.57 [SD = 12.56]; $t(84) = 3.84$; $P < .001$). Mean baseline FACIT-Sp scores were lower among those who improved than among those who worsened (improved = 126.14 [SD = 11.23]; worsened = 113.03 [SD = 16.46]; $t(105) = 3.52$; $P = .001$). Thus, those who benefited least had a relatively high QOL to begin with.

Three-Month Follow-up

Follow-up questionnaires were sent to all participants 3 months after program completion. At this time, 69 responses were received, 26 from men and 43 from women. At 3-month follow-up, 12 participants were reported as having died and 4 had formally withdrawn from the study.

Table 2. Baseline and Program Completion Comparisons for All Measures

	Baseline		Program Completion		Wilcoxon Signed Rank Test	
	Median Score	n	Median Score	n	z	P
POMS						
Total Mood Disturbance	7	100	-9	87	-5.79	<.01 ^a
Tension-Anxiety	5	101	1	99	-6.66	<.01 ^a
Depression-Dejection	5	105	4	99	3.53	<.01 ^a
Anger-Hostility	6	104	3.50	100	6.06	<.01 ^a
Vigor-Activity	18	107	21	104	-4.12	<.01 ^a
Fatigue-Inertia	8	105	4	103	-3.76	<.01 ^a
Confusion-Bewilderment	2	102	0	101	-4.45	<.01
Mini-MAC						
Helplessness-Hopelessness	11	109	8	109	-5.94	<.01 ^a
Anxious Preoccupation	19	106	15	105	-6.63	<.01 ^a
Fighting Spirit	14	106	15	104	3.98	<.01 ^a
Cognitive Avoidance	8	107	8	107	-3.74	<.01 ^a
Fatalism	14	104	14	106	-1.81	.070
FACIT-Sp						
FACIT-Sp	116	107	90	108	-6.74	<.01 ^a
FACT-G	84	107	25	109	-2.88	0.04
Physical Well-being	24	107	23	108	3.68	<.01 ^a
Social Well-being	23.15	106	23	108	0.09	0.931
Emotional Well-being	19	105	21	108	-6.10	<.01 ^a
Functional Well-being	20	107	23	109	-5.36	<.01 ^a
Spiritual Well-being	32.50	106	38	108	-6.59	<.01 ^a

^a Significant at the $P < .01$ level.

At 3 months, 58 (84.1%) people reported a current meditation practice, whereas 7 (10.1%) did not. For 56 people (96.6% of those meditating), this included the stillness and visualization meditation methods taught at The Gawler Foundation, and 48 (85.7%) reported benefits in everyday life. For the 31 participants who gave details of the minutes per week spent in meditation, the mean (SD) time spent meditating was 482 (269) minutes per week, the median time was 420 minutes, the minimum time was 75 minutes, and the maximum time was 1260 minutes.

Wilcoxon signed rank tests showed that the score on the Vigor-Activity subscale was significantly reduced after 3 months, whereas scores on the POMS TMD and other subscales were not significantly different (see Table 3). There were no significant differences in any Mini-MAC Scales 3 months after program completion. Physical well-being was reduced, and FACIT-Sp, FACT-G, emotional, functional, spiritual, and social well-being dimensions of QOL improvements were unchanged from program completion to 3-month follow-up (see Table 3).

Assessment of the correlations between measures at baseline showed that Mini-MAC Fatalism and FACIT-Sp Spiritual Well-being were significantly correlated. It has been pointed out that the mini-MAC Fatalism subscale may in fact measure coping functions such as religious coping and faith, positive reappraisal, and acceptance and that these may be linked to spirituality.^{49,53} In light of this, it was hypothesized that Fatalism would be significantly

correlated with Spiritual Well-being, and this was found to be the case (Spearman $\rho = 0.529$, $P < .01$).

Similarly to baseline, at 3-month follow-up, those participants who scored more highly on the Spiritual Well-being subscale of the FACIT-Sp were more likely to have lower scores on the Helplessness-Hopelessness subscale of the Mini-MAC. Thus, unlike some other studies, which have concluded that women low in hope find comfort in religion,⁵⁴ in the current study, Spiritual Well-being seems to be linked to lower hopelessness. This may be illustrated by comments from participants who responded to 3-month follow-up questionnaires:

I have recommitted to God after many years of being away. This is what has given me most peace and happiness. Whatever has happened recently I can honestly say I have felt no stress whatsoever.

I have found a much deeper level of spirituality and feel that God is on my journey with me. I need his support and presence and I found it. I am so happy and so humble and thankful.

Discussion

The observed changes in mood, coping, and QOL suggest that The Gawler Foundation program has beneficial effects in cancer patients. The changes were largely as hypothesized. One of the key components of the intervention is regular meditation which have been

Table 3. Program Completion and 3-Month Follow-up Comparisons for All Measures

	Program Completion		3-Month Follow-up		Wilcoxon Signed Rank Test	
	Median Score	n	Median Score	n	z	P
POMS						
Total Mood Disturbance	-9	87	-3	65	-2.60	.09
Tension-Anxiety	1	99	2	67	-1.72	.086
Depression-Dejection	4	99	3	69	-0.49	.628
Anger-Hostility	3.5	100	4	69	-2.61	.09
Vigor-Activity	21	104	16.5	68	-3.40	.01 ^a
Fatigue-Inertia	4	103	6	68	-2.25	.025
Confusion-Bewilderment	0	101	1	69	-1.85	.064
Mini-MAC						
Helplessness-Hopelessness	8	109	9	66	-2.81	.05
Anxious Preoccupation	15	105	17	67	-1.80	.071
Fighting Spirit	15	104	14	67	-2.07	.038
Cognitive Avoidance	8	107	8	66	-0.39	.694
Fatalism	14	106	15	65	-1.09	.278
FACIT-Sp						
FACT-G	90	108	124	67	-1.92	.055
FACT-G	25	109	88	67	-0.78	.437
Physical Well-being	23	108	25	68	-3.426	.01 ^a
Social Well-being	23	108	23	69	-0.178	.859
Emotional Well-being	21	108	21	67	-0.40	.689
Functional Well-being	23	109	22	68	-2.07	.038
Spiritual Well-being	38	108	37	69	-1.10	.272

^a Significant at the $P < .01$ level.

linked to reduced mood disturbance.^{55,56} Meditation is encouraged as a way to develop the ability to observe the mind's operations nonjudgmentally, leading to the development of more realistic perceptions and greater appreciation of positive as well as negative experiences. Practitioners come to realize that most sensations, thoughts, and emotions are transient and that thoughts are "just thoughts," rather than accurate reflections of reality. This may help reduce the emotional reactivity usually linked to anxiety symptoms,^{57,58} and the increased awareness may bring changes in habitual cognition and patterns of responding, including ruminative thinking.⁵⁹

The Gawler Foundation program also incorporates relaxation techniques and light yoga, and the benefits seen in the current study are supported by other studies that have examined the effectiveness of relaxation training and yoga⁶⁰ in reducing treatment-related symptoms and improving emotional adjustment in cancer patients.^{61,62} This is exemplified by comments from participants such as the following:

When communicating with others about my illness I became very tense. Now I am able to focus on the tense parts of my body and relax them very quickly.

I only do the things I want to and I say no if I am not interested. I let the small things go and make the most of every day. I try not to worry about things that might not happen.

I often look at events and people from the outside instead of being pulled in by the negativity of the person or situation. I know more clearly why I feel a certain way.

As hypothesized, all Mini-MAC Scale scores, with the exception of Fatalism, showed improved coping after the intervention. This is to be expected because positive thinking, fighting spirit, and maintaining realistic optimism and hope in the face of difficult situations are a focus of some of the sessions of The Gawler Foundation program. Studies of meditation interventions suggest that the increased awareness that meditation promotes may bring about improved self-management through different ways of coping with problems.^{59,63}

It is possible that some Mini-MAC Scale scores are less likely than others to change over time, particularly in a period as short as the 10 days used in this study. Nordin et al⁶⁴ suggest that some factors of the MAC and Mini-MAC Scales, including Helplessness-Hopelessness and Anxious Preoccupation should be interpreted as measures of adjustment that can vary over time, whereas other factors such as Fatalism and Cognitive Avoidance may be conceptualized in terms of coping strategies and are therefore less likely to change over time. In support of this view, Grassi et al⁶⁵ found that the antidepressant reboxetine improved Mini-MAC Helplessness-Hopelessness and Anxious Preoccupation scores but not Fighting Spirit, Cognitive Avoidance, and Fatalism scores in breast cancer

patients. However, other studies have shown changes in Fighting Spirit scores after interventions.⁶⁶

FACIT subscale Physical Well-being scores were significantly higher after program completion. The beneficial effects of meditation on pain, sleep, and fatigue would be expected to have a positive impact on physical well-being. One of the aspects on which The Gawler Foundation program focuses is "Finding meaning and purpose in life." Thus, it might be expected that increases in Spiritual Well-being scores would be seen after the program. Other studies have also shown increases in spiritual beliefs and experiences after meditation interventions.^{55,56}

Results also showed that those with poorer emotional functioning and QOL at baseline showed greater benefit after the intervention.⁶⁷⁻⁶⁹ In this study, 21 participants reported poorer emotional functioning after program completion despite the intervention being designed to relieve mood disturbance. It is speculated that in some people, the intervention might increase the ability to express negative emotion, leading to a poorer performance on the psychometric test.⁷⁰ In addition, Speca et al⁷¹ speculate that as one of the aims of mindfulness types of meditation is to focus attention on the present moment, this may have the effect of making someone more aware of negative feelings. This may be a necessary part of learning to deal directly with negative feelings while maintaining hope and realistic optimism.

As an individual's QOL changes over time, so does the basis on which that person makes a QOL judgment. This phenomenon is known as response shift. Schwartz and Sprangers^{72(p1532)} define response shift as "a change in meaning of one's self-evaluation of a target construct as a result of: (a) a change in the respondents' internal standards of measurement; (b) change in respondent's values or (c) a redefinition/reconceptualisation of the target construct." This has important implications for assessing the effects of treatments because a change in QOL may reflect a response shift, a treatment effect, or a complex combination of both. Group intervention participants have reported that meeting people who are worse or better off than themselves led them to change their internal standards of how badly they were doing.⁷³ Group interventions may also help participants reconsider goals that are important to them, and people may learn that it is possible to have a better QOL despite a worsening disease condition.

This response shift is, for many people, a desirable outcome, and in this sense, many interventions, including those run by The Gawler Foundation, aim to teach response shift. This may be even more likely after an intervention incorporating meditation, which focuses on acceptance and having a greater appreciation of positive experiences. It is likely that response shift accounts for some of the QOL improvements seen after the intervention. In a study of Australian community-based self-management programs, Osborne et al⁷⁴ found that response shift

occurred in about 50% of participants, and positive and negative response shifts had profound effects on patient-reported outcomes. No attempt was made to investigate response shift in this study, and further investigation is recommended.

Overall, it seems that improvements in mood disturbance, anxiety, and QOL after the program were largely maintained at 3-month follow-up, although there was a trend toward a decline in improvements. However, scores on the POMS Vigor-Activity and Physical Well-being subscale did decline significantly, providing further support for the importance of response shift. Participants often report that it requires effort to learn new skills and examine life patterns, and this may be too demanding for some people who are dealing with metastatic disease once they return to their home environments. Such results may point to the need for more support for patients to maintain compliance with program recommendations after shorter-term interventions such as the program described here.

Although this study suggests a positive benefit of the program, the results need to be interpreted cautiously because of the lack of a control group. Thus, it cannot necessarily be concluded that improvements are a result of the intervention because these might have happened over time without the intervention. However, it may be reasonable to assume that in a 10-day period overall mood, coping, and QOL would remain relatively stable in most people. It is also difficult in interventions with multiple components, such as diet and meditation, to identify which components are likely to be effective. The main limitations of the follow-up part of the study include lack of a control group, inadequate data on disease state, and significant loss to follow-up.

Conclusion

The observed changes in mood, coping, and QOL suggest that The Gawler Foundation Program has beneficial effects in cancer patients, particularly those whose QOL and emotional well-being are low. This may be largely because of the effects of meditation in reducing anxiety and increasing spiritual well-being. Overall, it seems that improvements in mood disturbance and anxiety were largely maintained at 3-month follow-up, although physical well-being appeared to decline. This may be because of the difficulty in incorporating program recommendations into everyday life, increasing disease severity, and lack of accountability. However, a major difficulty in the discussion of these results is that there is no control group with which to compare the intervention group. It is recommended that future studies compare intervention and control groups and further investigate the phenomenon of response shift.

Acknowledgments

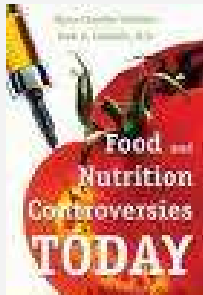
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Recommended Books



“Food and Nutrition Controversies Today, A Reference Guide”
Myrna Chandler Goldstein and Mark A Goldstein, MD

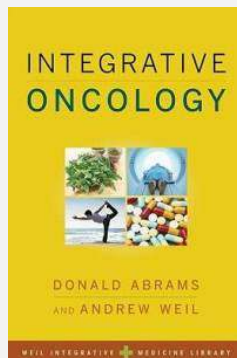
Nutrition and Food Controversies Today serves as a reasonably in-depth introduction to some of the hottest topics regarding health and diet today, from genetically modified foods, antioxidants, to vegetarian and vegan diets. Each chapter is choc-full of studies from all over the world presenting both (or more) sides of the argument. Myrna Goldstein and Mark Goldstein have co-authored several books together, focussing on controversies in current health issues. *Food and Nutrition* draws on their experience together in compiling this

unbiased guide based on strong scientific evidence. Readers are left to weigh up the evidence presented and are provided with a list of references and websites at the conclusion of each chapter for further research. A helpful “Topics For Discussion” section is also provided for each topic, posing some excellent questions to get the ball rolling.

“Integrative Oncology”
Donald Abrams, MD and Andrew Weil, MD

Part of the Weil Integrative Medicine Library, *Integrative Oncology* is designed as a both an accessible overview for medical practitioners and a valuable guide for the

“motivated lay audience”. This user friendly text caters to both readerships, incorporating personal accounts, numerous medical expert contributions, and thoroughly referenced evidence within an easy to read format. Defining integrative oncology as a conventional and complementary approach to the treatment of a whole person living with and beyond cancer, *Integrative Oncology* addresses a wide yet essential range of concerns within this definition. This includes the exploration of the influence of body, mind and spirit on the individual, the role of the spouse and family, and a myriad of other elements recognised as key factors in treatment and recovery within an Integrative approach to cancer.



About Our Organisation

The National Institute of Integrative Medicine (NIIM) formed as a natural development from the Graduate School of Integrative Medicine (GSIM), formerly part of Swinburne University.

The GSIM was founded by Professor Avni Sali in 1997, to educate medical practitioners in Integrative Medicine and also to conduct research into the field of Integrative Medicine.

Integrative Medicine is the blending of conventional and complementary medicine with the aim of using the most appropriate field, be it a single modality or a combination, to provide complete care to the

patient. An emphasis is also placed on the patient becoming an active participant in the healthcare process.

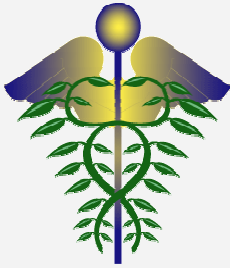
NIIM brings together the teaching, research and practice of Integrative Medicine and its allied activities with the objectives of facilitating improved understanding of the utilisation, safety and limitations, evaluation and development of complementary and alternative medicine (CAM) with mainstream medicine. The research carried out at the Institute is focused on the establishment of a strong evidence base for Integrative Medicine.

The NIIM Courses have

been developed for medical practitioners, providing the tools necessary to assess and implement the principles of Integrative Medicine in health care.

The NIIM Wellness Clinic operates on these principles, drawing on both Complementary and conventional medicine to deliver the widest scope of patient care possible.

NIIM aims to provide health and education opportunities and, in line with the principles of a not-for-profit organisation, make them readily accessible to the public and healthcare practitioners.



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