Revista de Enfermagem e Atenção à Saúde
REAS
ARTIGO ORIGINAL
DOI: 10.18554/reas.v7i2.2130

RELAXATION WITH GUIDED IMAGERY AND HEALTH-RELATED QUALITY OF LIFE IN PATIENTS DURING CHEMOTHERAPY

RELAXAMENTO COM IMAGEM GUIADA E QUALIDADE DE VIDA RELACIONADA À SAÚDE DE PACIENTES DURANTE QUIMIOTERAPIA

RELAJACIÓN CON IMAGEM GUIADA Y LA CALIDAD DE VIDA RELACIONADA CON LA SALUD DE LOS PACIENTES DURANTE LA QUIMIOTERAPIA

Adriana Cristina Nicolussi[1], Fernanda Mara Coelho Cardozo[2], Juliana Maria de Paula[3], Namie Okino Sawada[4]

ABSTRACT

Objective: to evaluate the effects of relaxation and guided imagery on health-related quality of life during chemotherapy. **Methodology:** quasi-experimental study performed with 152 cancer patients in two chemotherapy centers. The instrument *Quality of Life Questionnaire-Core30* was used and the *Mann-Whitney* and *Wilcoxon* tests were performed. **Results:** at Time 1, both groups (control and intervention) presented the most common symptoms: pain, fatigue, insomnia and loss of appetite. When groups were compared, statistically significant differences were found in Time 1 – with the control group presenting better scores of global quality of life (p=0,0090), social function (p=0,0116), nausea/vomiting (p=0,0303). With respect to the intervention group, at Time 2, best results were for physical function (p=0,0318) and at Time 3 for physical (p=0,0004), emotional (p=0,0235) and role function (p=0,0003), fatigue (p=0,0011) and nausea/vomiting (p=0,0256). Comparing the times, the control group presented impairment in physical, emotional and social functions, and also in nausea/vomiting and constipation, while the intervention group presented improvement in the emotional function. **Conclusion:** relaxation and guided imagery did improve the quality of life of patients undergoing chemotherapy.

Descriptors: Neoplasms; Chemotherapy; Relaxation; Imagination; Oncology Nursing.

*Artigo extraído da tese intitulada: "Relaxamento com imagem guiada: influência sobre a qualidade de vida relacionada à saúde de pacientes com câncer durante o tratamento quimioterápico". Escola de Enfermagem de Ribeirão Preto, Universidade de São Paulo, 2012.

[1] Enfermeira. Doutora em Ciências. Professor Adjunto do Departamento de Enfermagem na Assistência Hospitalar do Curso de Graduação em Enfermagem da Universidade Federal do Triângulo Mineiro (UFTM).
[2] Enfermeira, Mestre em Enfermagem pela Escola de Enfermagem de Ribeirão Preto da Universidade de São Paulo (EERP-USP). Executiva de vendas Becton Dickinson Brasil (BD Brasil). Ribeirão Preto, São Paulo, Brasil.
[3] Enfermeira. Doutoranda da Escola de Enfermagem de Ribeirão Preto da Universidade de São Paulo (EERP-USP).
[4] Enfermeira. Doutora em Enfermagem. Docente da Escola de Enfermagem de Ribeirão Preto da Universidade de São Paulo (EERP-USP).

RESUMO

Objetivo: avaliar os efeitos do relaxamento com imagem guiada sobre a qualidade de vida relacionada à saúde de pacientes durante quimioterapia. **Metodologia:** estudo quase-experimental realizado com 152 pacientes adultos com câncer em dois centros de quimioterapia. Utilizou-se instrumento *Quality of Life Questionnaire–Core30*. Foram realizados Testes *Mann-Whitney* e *Wilcoxon*. **Resultados:** no Tempo 1, ambos os grupos (controle e intervenção) apresentaram sintomas mais comuns: dor, fadiga, insônia e perda de apetite. Na comparação entre grupos, foram encontradas diferenças estatisticamente significativas no Tempo1, com o grupo controle apresentando melhores escores de qualidade de vida global (p=0,0090), função social (p=0,0116), náuseas/vômitos (p=0,0303); já em Tempo2, função física (p=0,0318) e Tempo3 para funções física (p=0,0004), emocional (p=0,0235), desempenho de papel (p=0,0003), fadiga (p=0,0011), náuseas/vômitos (p=0,0256), os melhores resultados foram para o grupo intervenção. Comparando-se os tempos, grupo controle apresentou prejuízo nas funções física, emocional e social, náuseas/vômitos e constipação, enquanto grupo intervenção apresentou melhora na função emocional. **Conclusão:** relaxamento com imagem guiada proporcionou melhora na qualidade de vida dos pacientes durante quimioterapia.

Descritores: Neoplasias; Quimioterapia; Relaxamento; Imaginação; Enfermagem Oncológica.

RESUMEN

Objetivo: evaluar el efecto de la relajación con imagen guiada en la calidad de vida relacionada con la salud de los pacientes durante la quimioterapia. **Metodología:** estudio cuasi-experimental en 152pacientes con cáncer en dos centros de quimioterapia. Utilizamos instrumento Q*uality of Life Questionnaire-Core30*.Se realizaron las pruebas de *Mann-Whitney* y *Wilcoxon*.**Resultados:**Tiempo1 en grupos (control y intervención) fueron los síntomas más frecuentes: dolor, fatiga, insomnio y pérdida de apetito. En la comparación entre los grupos, se encontraron diferencias estadísticamente significativas en Tiempo1, con el grupo de control que presenta mejores puntuaciones de calidad de vida global (p=0,0090), función social (p=0,0116), náuseas/vómitos (p=0,0303); mientras Tiempo2, para la función física (p=0,0318) y Tiempo3 a las funciones físicas (p=0,0004), emocionales (p=0,0235), desempeño del rol (p=0,0003), fatiga (p=0,0011), náuseas/vómitos (p=0,0256), con mejores resultados para el grupo de intervención. La comparación de los tiempos, el grupo de control mostró deterioro en las funciones físicas, emocionales y sociales, náuseas/vómitos y estreñimiento, mientras que el grupo de intervención mostró mejoría en la función emocional. **Conclusión:** relajación con imagen guiada proporcionada mejora en la calidad de vida de los pacientes durante la quimioterapia.

Descriptores: Neoplasias; Quimioterapia; Relajación; Imaginación; Enfermería Oncológica.

INTRODUCTION

The demographic profile of Brazil has changed due to the urbanization process. Industrialization, advances in science and technology, new life styles and exposure to risk factors have caused changes in the morbidity and mortality profile, bringing attention to chronic-degenerative diseases, including cancer.[1]

When an individual faces the cancer diagnosis, the fear of the disease and the several repercussions it causes in life may

lead him/her to lose his/her main role in society and to cease to play his/her functions of father/mother, son, daughter, worker, spouse. Now he/she is identified as a cancer patient.[2]

Technological advances in the treatment of cancer have increased remission and survival, including disease-free survival, tumor response and overall survival.[3] However, chemotherapy still causes physical and psychological symptoms such as nausea, vomiting, loss of apetite, fatigue, insomnia, anxiety.[4]

The side effects of chemotherapy affect the Health-Related Quality of Life (HRQoL) of patients. Such term refers to aspects most directly associated with diseases or health interventions, it is multidimensional and requires health professionals to make use of health procedures that alleviate these symptoms, improving patients´ HRQoL. Studies on this subject have become frequent.[2-4]

Complementary therapies have been widely used in cancer treatment centers in the United States due to the immediate positive impact on patient´s stress and suffering, its relatively easy application and also due to the sense of control that is achieved,[5] especially mind-body therapies that have been used to decrease the side effects of treatments and to improve HRQOL.[4,6-8]

Mind-body therapies are based on the interaction between brain (physiological), mind (thoughts), body and behavior, in which emotional, mental, social, spiritual and behavioral factors can directly affect health and promote well being.[9-10]

Mind-body practices include a wide and diverse group of procedures administered or taught by a practitioner, such as acupunture, massage therapy, meditation, chinese medicine, yoga and relaxation techniques (breathing exercises, guided imagery and muscle relaxation).[11]

Mind-body therapies can be fundamental to transforming the meaning of cancer and to dealing effectively with the stress that is inevitably brought by the disease. Its use has provided better coping and has consequently decreased the psychological vulnerability to stress and its physiological consequences.[12]

Each patient may choose any of the therapies and experience specific physiological benefits, such as: decreased stress, improved sleep, mood and pain, decreased stress hormones and improved immunity. Each time they feel the benefits of the techniques they are trying, they also reinforce the sense of control over their lives and feelings, regardless of the pain, hopelessness and powerlessness they may feel.[12]

Relaxation with Guided Imagery (RGI) therapy was used in this study. Relaxation consists of flexing and extending different muscle groups successively.[7,13] Guided imagery is the use of mental visualization, leading the person to focus thought on pleasing images to replace negative and stressful feelings..[7,13] RGI therapy has been used in cancer patients to reduce chemotherapy side effects and to improve HRQoL.[2-4,6-8]

In view of the above, the conduction of this research is justified by the importance of studies with prospective design that provide follow-up of the beneficial effects of RGI. Therefore, the objective of this study was to evaluate the effects of RGI on HRQoL of patients undergoing chemotherapy.

METHODS

This is a quantitative and quase-experimental study, with before-after and non-equivalent control group[14], carried out in two chemotherapy centers in inner cities of the São Paulo State. Research was conducted between May 2009 and December 2011.

Inclusion criteria were: age over 18 years old, diagnosed with cancer, starting chemotherapy and being assisted by the Unified Health System (SUS in portuguese).

After weekly survey of the patients who were starting treatment, those who fulfilled the inclusion criteria were approached by the researcher, who explained the research objectives. After that, a purposive sampling was carried out, in which the researcher intentionally selects individuals to take part in the population to be studied.[14] Therefore, those who agreed to participate and receive intervention were allocated to the Intervention Group (IG)(n=73) and those who were not to receive intervention but who accepted to participate in the study were directed to the Control Group (CG) (n=79). All individuals signed and received a copy of the Informed Consent Form (ICF)

Both groups (IG and CG) were submitted to the traditional chemotherapy treatment, the one recommended by the Institution and by the physician responsible for the patient, since there was no interest in changing conduct, prescriptions or care provided. Sociodemographic and clinical data were collected from the medical records and from patients themselves. Both groups responded to the *Quality of Life Questionnaire-Core30*(QLQ-C30)[15] by the *European Organization for Research and Treatment of Cancer* (EORTC), which is a validated HRQoL instrument for the Brazilian population[16] for specific use in cancer patients, assessed in three times:

Time 1(T1) - chemotherapy beginning (baseline), Time 2 (T2) after three months and Time 3 (T3) after six months.

QLQ-C30 is a HRQoL questionnaire that assesses functional outcomes and relevant symptoms among cancer patients. It contains 30 questions which, according to the grouping proposed by EORTC, will constitute the following scales: General Health Status/Quality of Life (GHS/QoL); physical, cognitive, emotional, social and role performance functions; scale and symptom items that evaluate fatigue, pain, nausea/vomiting, dyspnea, insomnia, loss of appetite, constipation and diarrhea, and also an item that evaluates financial impact.[7,15]

According to EORTC guidelines, these scales and items generate scores which are transformed on a scale from 0 to 100, having zero as the worst functioning and 100 as the best functioning on GHS/QoL. When considering scales and items regarding symptoms and financial impact, the reverse occurs – scores closer to zero indicates fewer symptoms and closer to 100 indicates more symptoms.[15]

The first session of intervention was performed on the first day of the chemotherapy treatment with the presence of the researcher. RGI was carried out through a 15 minute CD recording. The CD recording conducts the patient to breathing and relaxation movements on various aspects of the body. It then suggests patients to imagine themselves in a safe place, to visualize the location of the cancer and its defense cells destroying it while the body is invigorating. Right after, patients are suggested to visualize pleasing images of what they enjoy doing but can not do now because of the illness. They are then guided to picture that, when cured, they will be able to perform it again – an exercise to create confidence that it will happen. In the end, patients are asked to thank themselves for dedicating time for their own and for their health in order to continue living. At last they are asked to start moving around and slowly opening their eyes to return to the environment.

After the first session, patients received a copy of the CD and were instructed to carry out other sessions at home (at least twice a week) during the course of the treatment. The researcher also conducted subsequent sessions on days when patients came to the institution for treatment.

To analyze data, we used STATA SE program version 12.0. Mean and standard deviation were calculated for descriptive analysis. The *Mann-Whitney* e *Wilcoxon* tests were used to show significant differences (p<0,05) in the descriptions of the behaviors of the variables taken two by two.

The research was approved by the Research Ethics Committee of the Nursing School of Ribeirão Preto – USP, protocol nº 1002/2009. Identity was kept confidential.

RESULTS

T1 sample (*baseline*) consisted of 152 patients, with IG=73 and CG=79. The total initial sample (IG and CG) was predominantly composed of women (55,92%) aged between 40 and 59 years old (54,61%), married (57,24%), retired or housewives (46,71%), catholics (70,39%), resident in the host city of chemotherapy centers (52,63%), with low level of schooling – elementary education (65,79%).

The most common cancers were: breast (23,68%), intestinal (21,05%) and gastric (12,50%). Most patients had been submitted to surgery (76,97%) and some also experienced radiotherapy (27,63%). With respect to chemotherapy, most patients (76,97%) reported side effects such as: nausea, vomiting, constipation or diarrhea, fatigue, weakness, pain, insomnia, loss of appetite, complaints of irritability and physical malaise.

With regards to the psychometric charaacteristics of QLQ-C30 instrument, *Alpha de Cronbach* coefficient was calculated. For the CG, at T1 α=0,832, at T2 α=0,855 and at T3 α=0,868. For the IG, at T1 α=0,862, at T2 α=0,871 and at T3 α=0,867, indicating reliability of the instrument in the three times for both groups.

Table 1 shows the mean and standard deviation in QLQ-C30 scales for CG and IG at T1, T2 and T3.

Table 1- Mean and standard deviation of the QLQ-C30 scales at T1, T2 and T3, control group and intervention group.
São Paulo, Brazil, 2012.

Scales and symptoms	CG* Mean (Sd)T1	CG* Mean (*Sd*)T2	CG* Mean (*Sd*)T3	IG* Mean (*Sd*)T1	IG* Mean (*Sd*)T2	IG* Mean (*Sd*)T3
GHS/QoL*	79,5 (21,7)	76,7 (20,9)	77,4 (19,6)	70,0 (24,2)	74,7 (19,9)	81,3 (15,0)
PF*	71,6 (24,9)	65,3 (27,6)	60,8 (25,5)	74,4 (21,6)	76,7 (21,4)	78,4 (20,5)
RP*	55,5 (40,2)	53,5 (37,1)	46,8 (34,2)	60,2 (38,0)	62,3 (36,2)	72,9 (30,1)
EF*	66,1 (29,5)	60,9 (29,8)	56,9 (28,3)	60,2 (28,4)	63,6 (30,7)	70,5 (26,7)
CF*	78,7 (26,8)	77,4 (26,7)	70,8 (26,4)	74,8 (31,0)	80,1 (25,6)	76,5 (29,7)
SF*	84,1 (25,3)	76,3 (31,2)	73,1 (30,5)	69,6 (36,4)	71,7 (36,0)	78,3 (27,4)
FAG*	32,2 (30,2)	41,0 (33,1)	46,5 (30,4)	32,7 (29,6)	32,0 (28,5)	26,4 (26,0)
NAV*	6,1 (14,9)	17,2 (21,1)	20,8 (24,2)	13,1 (23,9)	10,9 (16,4)	10,7 (16,7)
PAIN*	36,1 (35,8)	45,1 (39,4)	39,6 (42,2)	40,7 (37,5)	33,3 (33,2)	31,8 (32,1)
DYS*	9,6 (25,0)	11,2 (26,9)	13,9 (32,1)	12,2 (24,4)	9,7 (22,4)	8,8 (20,4)

INS*	33,2 (39,5)	38,5 (41,4)	40,1 (40,6)	31,3 (35,8)	27,4 (34,7)	25,8 (37,5)
LAP*	17,7 (34,0)	20,9 (33,1)	15,9 (28,2)	29,2 (43,3)	21,1 (33,3)	8,8 (23,9)
CON*	13,0 (28,9)	22,5 (35,0)	26,9 (33,3)	19,5 (30,8)	18,3 (29,9)	17,7 (31,3)
DIA*	6,3 (17,7)	6,9 (17,1)	4,1 (11,0)	8,2 (21,3)	9,7 (22,4)	6,6 (16,6)
FD*	29,4 (39,5)	25,7 (38,3)	33,2 (39,5)	25,9 (38,5)	14,3 (25,7)	16,9 (27,0)

*CG: control group; IG: intervention group; GHS/QoL: general health status/quality of life; PF: physical function; RP: Role performance; EF: Emotional Function; CF: Cognitive Function; SF: Social Function; FAG: fatigue; NAV: nausea/vomiting; PAIN: pain; DYS: dyspnea; INS: insomnia; LAP: loss of appetite; CON: constipation; DIA: diarrhea; FD: financial difficulties.

It was verified that, at T1 (*baseline*), CG patients had satisfactory scores of GHS/QoL, physical, emotional, cognitive and social functions (scores 50,0 to 70,0) and regular role performance (escore<50,0). As for IG, satisfactory scores were found for GHS/QoL and for the five functional scales (scores 50,0 to 70,0). At the symptom scales, fatigue, pain, insomnia and loss of appetite were the most frequent symptoms for both groups.

Considering the functional scales, results were satisfactory (scores 50,0 to 70,0) for CG and IG, except for the role performance for CG that reimained regular (scores <50,0) whereas in the scales of symptoms, fatigue, pain, insomnia and loss of appetite prevailed, with an increase in constipation for CG.

At T3, the scores of functional scales for IG remained satisfactory, while for the CG the emotional function had a decine, and along with the role performance scale, regular scores were observed. In the symptoms scales, there was a reduction of the symptoms in the IG which still referred to fatigue, pain and insomnia, whereas in the CG the symptoms increased except for loss of appetite and diarrhea which decreased in comparison to T1.

Aiming at comparing HRQoL domains between groups at T1, T2 and T3, Table 2 presents *Mann-Whitney* Test of QLQ-C30 scales between CG and IG at the three times.

Table 2- *Mann-Whitney* Test of the QLQ-C30, at the three times between control group and intervention group. São Paulo, Brasil, 2012.

VariablesCG /IG*	*z(T1)*	*p(T1)*	*z(T2)*	*p(T2)*	*z(T3)*	*p(T3)*
GHS/QoL*	2,612	0,0090**	0,686	0,4927	-0,796	0,4259
PF*	-0,440	0,6602	-2,147	0,0318**	-3,515	0,0004**
RP*	-0,797	0,4255	-1,292	0,1963	-3,611	0,0003**
EF*	1,577	0,1148	-0,565	0,5723	-2,265	0,0235**
CF*	0,545	0,5860	-0,542	0,5881	-1,549	0,1215
SF*	2,525	0,0116**	0,480	0,6314	-0,879	0,3796
FAG*	-0,181	0,8564	1,434	0,1517	3,264	0,0011**
NAV*	-2,166	0,0303**	1,818	0,0690	2,232	0,0256**
PAIN*	-0,715	0,4743	1,587	0,1125	0,399	0,6902

DYS*	-1,278	0,2013	-0,083	0,9339	0,302	0,7623
INS*	0,083	0,9336	1,358	0,1744	1,807	0,0707
LAP*	-1,504	0,1327	0,114	0,9094	1,698	0,0896
CON*	-1,929	0,0538	0,486	0,6268	1,768	0,0770
DIA*	-0,459	0,6462	-0,328	0,7431	-0,498	0,9182
FD*	0,586	0,5578	1,421	0,1554	1,985	0,0472**

*CG: control group; IG: intervention group; GHS/QoL: general health status/quality of life; PF: physical function; RP: Role performance; EF: Emotional Function; CF: Cognitive Function; SF: Social Function; FAG: fatigue; NAV: nausea/vomiting; PAIN: pain; DYS: dyspnea; INS: insomnia; LAP: loss of appetite; CON: constipation; DIA: diarrhea; FD: financial difficulties. ***p*<0,05.

Statistically significant differences (*p*<0,05) were observed at T1 between groups for GHS/QoL (*p*=0,009), social function (*p*=0,0116), nausea/vomiting (*p*=0,0303), with CG showing better scores on these functions than IG in the beginning of the chemotherapy treatment, moment at which the two groups had not yet received any intervention or treatment.

At T2 there were statistically significant differences for physical function (*p*=0,0318) and at T3 for physical function (*p*=0,0004), emotional function (*p*=0,0235), role performance (*p*=0,0003), fatigue (*p*=0,0011), nausea/vomiting (*p*=0,0256), with the best scores found in the IG – what indicates that these scales and symptoms improved for this group with the complementary therapy performed during the times.

Tables 3, 4 and 5 presents the *Wilcoxon* test of QLQ-C30 scales in the Control and Intervention groups, comparing T1xT2, T1xT3 and T2xT3 respectively, with *p*< 0,05 being considered significant.

Table 3- W*ilcoxon* test of the QLQ-C30 in the control and intervention groups comparing times (T1xT2). São Paulo, Brazil, 2012.

Variables	CG* *z*	CG* *p*	IG* *z*	IG* *p*
GHS/QoL1xGHS/QoL2*	1,726	0,0844	-0,111	0,9120
PF1xPF2*	2,861	0,0042**	-0,539	0,5901
RP1xRP2*	1,272	0,2033	0,032	0,9742
EF1xEF2*	2,526	0,0115**	-0,855	0,3925
CF1xCF2*	0,627	0,5306	-1,385	0,1662
SF1xSF2*	2,461	0,0138**	-0,496	0,6202
FAG1xFAG2*	-2,984	0,0028	-0,305	0,7604
NAV1xNAV2*	-3,815	0,0001**	-1,123	0,2616
PAIN1xPAIN2*	-1,490	0,1363	1,053	0,2924
DYS1xDYS2*	-1,220	0,2226	0,043	0,9659
INS1xINS2*	-0,998	0,3182	0,337	0,7363
LAP1xLAP2*	-1,758	0,0787	0,130	0,8963

CON1xCON2*	-2,126	0,0335**	0,732	0,4644
DIA1xDIA2*	-1,093	0,2746	-0,523	0,6010
FD1xFD2*	0,549	0,5833	1,733	0,0832

*CG: control group; IG: intervention group; GHS/QoL: general health status/quality of life; PF: physical function; RP: Role performance; EF: Emotional Function; CF: Cognitive Function; SF: Social Function; FAG: fatigue; NAV: nausea/vomiting; PAIN: pain; DYS: dyspnea; INS: insomnia; LAP: loss of appetite; CON: constipation; DIA: diarrhea; FD: financial difficulties. **p<0,05.

Statistically significant differences were found in Table 3 from T1 to T2 for the CG in the scales for physical function (p=0,0042), emotional function (p=0,0115), social function (p=0,0138), nausea/vomiting (p=0,0001) and constipation (p=0,0335), indicating decreased function and increased symptoms for this group. However, there were no statistically significant differences for the IG.

Table 4 - *Wilcoxon* test of the QLQ-C30 in the control and intervention groups comparing times (T1xT3). São Paulo, Brazil, 2012.

Variables	CG*	CG*	IG*	IG*
	z	*p*	*z*	*p*
GHS/QoL1xGHS/QoL3*	1,629	0,1032	-1,366	0,1719
PF1xPF3*	3,053	0,0023**	-0,468	0,6398
RP1xRP3*	2,066	0,0388**	-1,312	0,1896
EF1xEF3*	2,383	0,0172**	-2,305	0,0212**
CF1xCF3*	2,199	0,0279**	0,118	0,9059
SF1xSF3*	2,988	0,0028**	-0,319	0,7496
FAG1xFAG3*	-3,636	0,0003**	0,657	0,5111
NAV1xNAV3*	-3,943	0,0001**	-1,961	0,0499**
PAIN1xPAIN3*	-0,499	0,6175	0,240	0,8100
DYS1xDYS3*	-1,913	0,0557	0,517	0,6049
INS1xINS3*	-1,579	0,1144	-0,125	0,9008
LAP1xLAP3*	-0,890	0,3734	1,797	0,0723
CON1xCON3*	-2,490	0,0128**	0,810	0,4179
DIA1xDIA2*	0,000	1,0000	0,378	0,7057
FD1xFD3*	-1,859	0,0630	-0,527	0,5980

*CG: control group; IG: intervention group; GHS/QoL: general health status/quality of life; PF: physical function; RP: Role performance; EF: Emotional Function; CF: Cognitive Function; SF: Social Function; FAG: fatigue; NAV: nausea/vomiting; PAIN: pain; DYS: dyspnea; INS: insomnia; LAP: loss of appetite; CON: constipation; DIA: diarrhea; FD: financial difficulties. **p<0,05.

In Table 4, showing results from T1 to T3, there were statistically significant differences for the CG in the scales concerning physical function (p=0,0023), emotional function (p=0,0172), cognitive function (p=0,0279), social function (p=0,0028), role performance (p=0,0388), fatigue (p=0,0003), nausea/vomiting (p=0,0001) and constipation (p=0,0128), again with decreased functions and increased symptoms. For the IG there was an increase in the emotional function (p=0,0212) and a decrese in nausea/vomiting (p=0,0499), indicating

that intervention contributed for this improvement.

Table 5 - *Wilcoxon* test of the QLQ-C30 in control group and intervention group, comparing times (T2xT3) São Paulo, Brazil, 2012.

Variables	CG* *z*	CG* *p*	IG* *z*	IG* *p*
GHS/QoL2xGHS/QoL3*	0,701	0,4835	-1,130	0,2586
PF2xPF3*	1,892	0,0584	0,954	0,3402
RP2xRP3*	1,563	0,1181	-1,212	0,2256
EF2xEF3*	1,593	0,1111	-0,546	0,5850
CF2xCF3*	2,127	0,0334**	0,882	0,3776
SF2xSF3*	2,062	0,0392**	0,038	0,9698
FAG2xFAG3*	-0,931	0,3518	-0,030	0,9758
NAV2xNAV3*	-1,531	0,1257	-0,106	0,9157
PAIN2xPAIN3*	0,804	0,4213	-1,037	0,2999
DYS2xDYS3*	-0,022	0,9828	0,291	0,7713
INS2xINS3*	-0,486	0,6269	-0,689	0,4909
LAP2xLAP3*	1,324	0,1854	2,504	0,0123
CON2xCON3*	-1,325	0,1851	-0,493	0,6221
DIA2xDIA2*	1,150	0,2500	0,398	0,6907
FD2xFD3*	-2,574	0,0101	-2,542	0,0110

*CG: control group; IG: intervention group; GHS/QoL: general health status/quality of life; PF: physical function; RP: Role performance; EF: Emotional Function; CF: Cognitive Function; SF: Social Function; FAG: fatigue; NAV: nausea/vomiting; PAIN: pain; DYS: dyspnea; INS: insomnia; LAP: loss of appetite; CON: constipation; DIA: diarrhea; FD: financial difficulties.**p<0,05.

Table 5 shows that for the CG there were statistically significant differences from T2 to T3 in the scales of cognitive function (p=0,0334) and social function (p=0,0392), indicating decrease in them. For the IG there were no statistically significant differences.

DISCUSSION

This is a study conducted in Brazil to evaluate the use of RGI and acupuncture in

the HRQoL of chemotherapy patients. Results were statistically significant, showing an increase in the GHS/QoL and in the emotional and social functions, along with a decrease in fatigue and loss of apetite for the IG and an increase in the GHS/QoL for the CG ($p \leq 0,05$). Significant difference was found in the comparison between the after-chemotherapy scores of the QLQ-C30 in the GHS/QoL of CG and IG ($p \leq 0,001$), indicating positive effects of interventions.[3]

It is also a quasi-experimental study carried out with breast cancer patients who experienced guided imagery. The presence of nausea/vomiting induced by chemotherapy was assessed. After the third session, significantly lower mean scores were found in the frequency and severity of nausea/vomiting before and after chemotherapy ($p<0,05$)[4] - corroborating this research.

Another quasi-experiment conducted RGI in breast cancer patients prior to chemotherapy, then, these patients were given a CD to perform RGI daily at home for seven days after chemotherapy, with both groups receiving self-care guidelines. The IG presented significant decrease in insomnia, pain, restlessness, inability to concentrate, numbness, anxiety and depression in pretest and posttest moments. The CG presented significant increase in nausea/vomiting, loss of apetite, constipation, abdominal distension and heartburn.[6]

In our research, when comparing changes between times in the CG, several significant differences were found in the QLQ-C30 scales, demonstrating a loss in functions and an increase in symptoms, that is, because they did not receive any intervention, the chemotherapy treatment actually caused a deficit in the HRQoL of these patients. At what concerns the IG, although it showed significant improvement only from T1 to T3 in two scales of the instrument, it can be suggested that the intervention prevented injuries in other scales and also brought benefits to this group during treatment.

When looking among the groups, statistically significant differences were found for general and specific symptoms such as insomnia, abdominal distension, depression and numbness, as well as psychological symptoms such as anxiety and depression.[6] In this study, comparing the groups, RGI brought benefits to the IG, which reported improvement in functions.

A clinical trial tested the efficacy of RGI in patients undergoing chemotherapy. IG patients had lower levels of fatigue and pain, in addition to showing better HRQoL from pre-intervention to post-intervention when compared to the CG levels that presented more fatigue and pain and less

HRQoL at follow-up. Symptoms of nausea/vomiting were significantly less frequent in the IG when compared to the CG.[7]

Randomized research with cancer patients organized in four groups: one receiving guided imagery, other receiving relaxation, other receiving RGI and another receiving usual care. Pain, fatigue and sleep disturbance were assessed at the beginning and after 30 and 60 days. Patients from the three intervention groups reported a high degree of satisfaction and had improvements regarding fatigue and insomnia, however pain remained a problem for most.[8]

A study with cancer patients undergoing chemotherapy also had sleeping and fatigue assessed. Improvement in such symptoms were verified with relaxation with guided imagery. That stresses the importance of initiating relaxation before chemotherapy in order to decrease the frequency and severity of these symptoms during treatment.[17]

Another research investigated the supervised multimodal exercise intervention and found that after six weeks of intervention there was a significant reduction of cancer-related fatigue in patients during chemotherapy. However, no statistically significant effect was found for general Quality of Life.[18]

Randomized study with breast cancer survivors (>6 weeks after treatment) was performed in: live group (LG) – experienced guided imagery with the presence of a therapist; telemedicine group (TG) – experienced guided imagery with therapist assistance via audiovisual technology and CG. Results revealed less fatigue, less cognitive dysfunction and less sleep disturbance in the groups receiving interventions (LG and TG) compared to the CG throughout follow-up (p<0,01). Changes in fatigue, cognitive dysfunction, sleep disorders, HRQoL and QoL specific for breast cancer were clinically significant. There were no differences between LG and TG.[19]

These reported studies found that the IG showed improvement regarding symptoms of nausea/vomiting[4], fatigue[8,17-19], insomnia[8,17,19], cognitive function[19] and HRQoL.[19]

In the studies comparing intervention with control, it was verified that the CG had increased nausea/vomiting, loss of appetite, constipation, abdominal distension and heartburn[6], fatigue and pain, with decreased HRQoL[7] while IG showed improvements in insomnia, pain, restlessness, concentration level, anxiety and depression[6], with decreased fatigue, pain and nausea/vomiting[7], indicating that the intervention was effective for the

patients who went through complementary therapies.

Therefore, literature[3-4,6-8,17-19] on the use of complementary therapies corroborates the results of our study, which demonstrated that RGI reduced symptoms caused by chemotherapy and consequently improved HRQoL in patients who experienced it.

CONCLUSIONS

When investigating HRQoL, it was observed that, at the beginning of the study – when patients had not yet undergone chemotherapy or intervention – results were similar for both groups, with pain, insomnia and loss of appetite being the most frequent symptoms. In addition to these symptoms, the CG also showed deficits in the role performance function.

In comparisons between groups and times, statistically significant differences were found indicating improvement in function (emotional and role performance) and symptoms (nausea/vomiting, pain, insomnia and loss of appetite) for the IG and worsening or decrease in the CG. Such results can be understood as a reflection of the RGI intervention performed in the IG.

As limitating factors, we can mention the low adherence of patients to remain in the research, and the small and heterogeneous sample in relation to the type of cancer that does not allow generalizing the results found.

Finally, it is suggested that new studies be carried out with a specific type of cancer and with a larger sample – that could evaluate and confirm the beneficial effects of complementary therapies to these specific groups, given that the investigated literature does support the use of these therapies, having shown positive results in improving the symptoms and the HRQoL of these patients.

REFERENCES

1. Instituto Nacional de Câncer José Alencar Gomes da Silva, Coordenação de Prevenção e Vigilância. Estimativa 2018: incidência de câncer no Brasil [Internet]. Rio de Janeiro: Inca; 2017 [citado em 26 abr 2018]. Disponível em: www.inca.gov.br/estimativa/2018/estimativa-2018.pdf

2. Nicolussi AC. Relaxamento com imagem guiada: influência sobre a qualidade de vida relacionada à saúde de pacientes com câncer durante o tratamento quimioterápico. [tese]. Ribeirão Preto, SP: Escola de Enfermagem de Ribeirão Preto, Universidade de São Paulo; 2012. 158p.

3. Sawada NO, Zago MMF, Galvão CM, Cardozo FMC, Zandonai AP, Okino L, et al. The outcomes of visualization and acupuncture on the quality of life of adult cancer patients receiving chemotherapy. Cancer Nurs. 2010; 33(5):E21-8. doi: 10.1097/NCC.0b013e3181d86739

4. Hosseini M, Tirgari B, Forouzi MA, Jahani Y. Guided imagery effects on chemotherapy induced nausea and vomiting in Iranian breast cancer patients. Complement Ther Clin Pract. [Internet]. 2016 [citado em 26 abr 2018]; 25:8-12. Disponível em: https://doi.org/10.1016/j.ctcp.2016.07.002
5. Costa AIS, Reis PED. Técnicas complementares para controle de sintomas oncológicos. Rev Dor. [Internet]. 2014 [citado em 26 abr 2018]; 15(1):61-4. Disponível em: http://www.scielo.br/pdf/rdor/v15n1/1806-0013-rdor-15-01-0061.pdf
6. Chen SF, Wang HH, Yang HY, Chung UL. Effect of relaxation with guided imagery on the physical and psychological symptoms of breast cancer patients undergoing chemotherapy. Iran Red Crescent Med J. [Internet]. 2015 [citado em 26 abr 2018]; 17(11):e31277. Disponível em: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4698327/pdf/ircmj-17-11-31277.pdf
7. Charalambous A, Giannakopoulou M, Bozas E, Marcou Y, Kitsios P, Paikousis, L. Guided imagery and progressive muscle relaxation as a cluster of symptoms management intervention in patients receiving chemotherapy: a randomized control trial. PLoS ONE. [Internet]. 2016 Jun 24 [citado em 26 abr 2018]; 11(6): e0156911. Disponível em: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4920431/pdf/pone.0156911.pdf
8. Nooner AK, Dwyer K, DeShea L, Yeo TP. Using relaxation and guided imagery to address pain, fatigue and sleep disturbances: a pilot study. Clin J Oncol Nurs. [Internet]. 2016 [citado em 26 abr 2018]; 20(5):547-52. Disponível em: http://web.a-ebscohost-com.ez33.periodicos.capes.gov.br/ehost/pdfviewer/pdfviewer?vid=3&sid=16a38ac6-d34f-47a1-a686-51143ef80c6e%40sessionmgr4007.
9. Barton DL, Pachman DR. Clinical trials in integrative therapies. Semin Oncol Nurs. [Internet]. 2012 [citado em 26 abr 2018]; 28(1):10-28. Disponível em: https://www.sciencedirect.com/science/article/pii/S0749208111000969?via%3Dihub. doi:10.1016/j.soncn.2011.11.003
10. Kwekkebomm KL, Cherwin CH, Lee JW, Wanta B. Mind-body treatments for the pain-fatigue-sleep disturbance symptom cluster in persons with cancer. J Pain Symptom Manage. [Internet]. 2010 [citado em 26 abr 2018]; 39(1):126-38. Disponível em: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3084527/pdf/nihms286299.pdf
11. National Center for Complementary and Integrative Health. Complementary, alternative, or integrative health: what's in a name? [Internet]. 2016 Jun [citado em 26 abr 2018]. Disponível em: https://nccih.nih.gov/health/integrative-health
12. Gordon JS. Mind-body medicine and cancer. Hematol Oncol Clin North Am. [Internet]. 2008 [citado em 26 abr 2018]; 22(4):683-708. Disponível em: https://doi.org/10.1016/j.hoc.2008.04.010
13. National Center for Complementary and Integrative Health. Relaxation techniques for health [Internet]. 2016 May. [citado em 26 abr 2018]. Disponível em: https://nccih.nih.gov/health/stress/relaxation.htm
14. Polit DF, Beck CT, Hungler BP. Fundamentos de pesquisa em enfermagem: métodos, avaliação e utilização. 5ed. Porto Alegre: Artmed; 2004.
15. Aaronson NK, Ahmedzai S, Bergman B, Bullinger M, Cull A, Duez Nj, et al. The European Organization for Research and Treatment of Cancer QLQ-C30: a quality-of-Life instrument for use in international clinical trials in oncology. J Natl Cancer Inst. [Internet]. 1993 [citado em 26 abr 2018]; 85(5):365-76. Disponível em: https://doi-org.ez33.periodicos.capes.gov.br/10.1093/jnci/85.5.365
16. Brabo EP, Paschoal MEM, Biasoli I, Nogueira FE, Gomes MCB, Gomes IP, et al. Brazilian version of the QLQ-LC13 lung cancer module of the European Organization for Research and Treatment of Cancer: preliminary reliability and validity

report. Qual Life Res. [Internet]. 2006 [citado em 26 abr 2018]; 15(9):1519-24. Disponível em: https://link.springer.com/content/pdf/10.1007%2Fs11136-006-0009-9.pdf
17. Demiralp M, Oflaz F, Komurcu S. Effects of relaxation training on sleep quality and fatigue in patients with breast cancer undergoing adjuvant chemotherapy. J Clin Nurs. [Internet]. 2010 [citado em 26 abr 2018]; 19(7-8):1073-83. Disponível em: https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1365-2702.2009.03037.x
18. Andersen C, Rorth M, Ejlertsen B, Stage M, Moller T, Midtgaard J, et al. The effects of a six-week supervised multimodal exercise intervention during chemotherapy on cancer-related fatigue. Eur J Oncol Nurs. [Internet]. 2013 [citado em 26 abr 2018]; 17:331-9. Disponível em: https://doi.org/10.1016/j.ejon.2012.09.003
19. Freeman LW, White R, Ratcliff CG, Sutton S, Stewart M, Palmer JL, et al. A randomized trial comparing live and telemedicine deliveries of an imagery-based behavioral intervention for breast cancer survivors: reducing symptoms and barriers to care. Psychooncology. [Internet]. 2015 [citado em 26 abr 2018]; 24(8):910-8. Disponível em: https://onlinelibrary.wiley.com/doi/epdf/10.1002/pon.3656

RECEIVED: 05/05/17
APPROVED: 23/07/18
PUBLISHED: 09/18