



EFFECTS OF DIGITAL PLAYFUL INTERVENTIONS IN PATIENTS WITH CANCER DURING THE COVID-19 PANDEMIC: A QUASI-EXPERIMENTAL STUDY¹

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ABSTRACT

Objective: to assess the effect of digital playful interventions on quality of life, depression, anxiety, stress and social support in patients with cancer during the COVID-19 pandemic. **Method:** a quasi-experimental study, with 15 patients from a Brazilian non-governmental organization, from August 2020 to October 2021. Digital interventions consisted of storytelling, games, cooking, artistic and body expression. Sociodemographic and clinical questionnaire, quality of life questionnaire, depression, anxiety and stress scales and social support were used, all validated in the Brazilian version. Participants were assessed pre-intervention, post-intervention 1 (after 4 months) and post-intervention 2 (after 10 months). Inferential analysis verified differences between times using generalized linear models and Friedman and Nemenyi non-parametric tests, considering $p \leq 0.05$. **Results:** improved perceived quality of life in post-intervention 2 emotional function compared to pre-intervention time, with statistical significance ($p=0.0020$). Depression ($p=0.0106$), anxiety ($p=0.0002$), stress ($p=0.0032$) and emotional support, positive social interaction ($p<0.0001$) improved with statistical significance post-intervention 1 and post-intervention 2 related to pre-intervention time. **Conclusion:** the interventions contributed to improving emotional quality of life, depression, anxiety, stress, emotional support and positive social interaction in patients with cancer during the pandemic, and can be encouraged among this population.

Keywords: Oncology. Information Technology. Mental Disorders. Social Support. SARS-CoV-2.

INTRODUCTION

Cancer is the main public health concern in the world, and its incidence has increased and is already among the four main causes of premature death in most countries⁽¹⁾. The vulnerability of patients with cancer diagnosed with COVID-19 consists of the worst prognosis with evolution to severe forms of the disease, compared to the general population⁽²⁾. As observed around the world, the COVID-19 pandemic has had an impact on the emotional state and Health-Related Quality of Life (HRQoL) of patients with cancer in Brazil⁽³⁾. In this context, emotional stabilization strategies aimed at developing connections and emotional bonds between patients and

professionals of the Oncology Care Network (RAO - *Rede de Atenção Oncológica*) safely, through Digital Information and Communication Technologies (DICT), are recommended. Among these, playful activities help to place the thought in the present moment and cause pleasure, helping to reduce acute stress levels⁽⁴⁾.

There are gaps in knowledge on this subject, as playful interventions with patients with cancer usually occur in person, in hospital environments and with the child population⁽⁵⁾. In recent years, advances in the technology of digital health games have allowed the development of tools to support mental health as a complement to therapy, in order to connect patients with professionals and expand access to the treatment of conditions such as

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depression and anxiety⁽⁶⁾. Thus, it is hypothesized that digital playful interventions can help minimize psychosocial impacts and strengthen the social support network of patients with cancer by improving their mental health. This study is justified by the potential that the proposed health intervention represents in offering a way to establish a connection between patients in vulnerable conditions and RAO professionals safely, in a scenario of social distancing conducive to mental disorders. Thus, this study aims to assess the effect of digital playful interventions on quality of life, depression, anxiety, stress and social support in patients with cancer during the COVID-19 pandemic.

METHOD

This is a quasi-experimental study based on pre- and post-intervention⁽⁷⁾. Data collection took place in a non-governmental organization (NGO) located in a municipality in the state of Mato Grosso do Sul, Brazil, between August 2020 and October 2021. This NGO assists patients diagnosed with cancer and their families in vulnerable situations.

The initial population corresponded to a group of 140 patients registered at the NGO diagnosed with cancer, engaged in social projects before the

pandemic: 101 (72%) women and 39 (28%) men. Inclusion criteria were: 1) having active registration in the NGO in 2020; 2) being 18 years or older; 3) having preserved cognitive ability to respond to instruments and participate in interventions; 4) having telephone equipment with WhatsApp®, Google Meet® or Zoom Meet® installed; 5) having internet access; and 6) having digital literacy or have volunteers who can help. Criteria 3 and 6 were considered according to screening carried out by the NGO team and corresponded to patients participating in social projects conducted in the pre-pandemic period and in the NGO's social media group during the pandemic, being later confirmed by self-declaration and/or interactions with the study team. It was considered as an exclusion criterion to present weaknesses or deficiencies that made it impossible to respond to the assessment instruments and participate in the interventions. Participation in less than 75% of intervention activities and verbal manifestation of withdrawal from participation during follow-up was considered as a discontinuity criterion. Of the 140 individuals from the NGO, 49 patients met the inclusion criteria and, therefore, were invited to participate in the study, with an acceptance rate of 71.42% (n=35). Figure 1 shows the participant selection flow⁽⁸⁾.

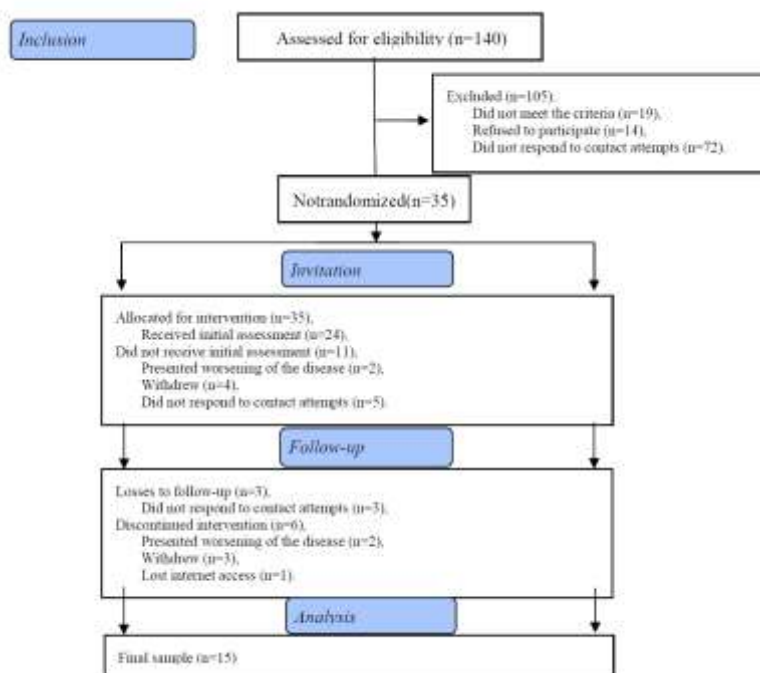


Figure 1. Flowchart adapted from Extension for Pilot and Feasibility Trials Flow Diagram - Consolidated Standards of Reporting Trials (CONSORT)⁽⁸⁾.

The digital playful intervention program consisted of offering recreational activities mediated by medical and nursing students from a public university in Brazil, during remote meetings. The activities took place in groups (WhatsApp®/Google Meet®) and individually (WhatsApp®/Zoom Meet®), lasting approximately one hour each meeting. Scheduling took place once a week on days and times according to participants' and academics' availability. Intervention content was planned according to the individual preferences of participants verified from a characterization questionnaire, and each participant was assigned to an academic mediator, according to their affinity and ability to develop the types of activities preferred by participants. The academics received a 12-hour training in a theater school to mediate playful activities and relationship with patients with cancer through DICT, in a way that allowed the development of skills and competencies to establish solid bonds with participants and conduct playful activities.

Digital interventions were carried out through a manual containing guidelines and content for holding virtual meetings. The material contains information about the importance of active listening, welcoming attitude and identification

of predominant needs and feelings at the time of the meeting. The manual also has a suggested repertoire⁽⁹⁾ for digital recreational activities: storytelling⁽⁵⁾; traditional games⁽¹⁰⁾ (crossword puzzles, word searches, anagrams, puzzles, difference games, treasure hunts, board, bingo); electronic games⁽¹⁰⁾ (quizzes, games, puzzles); artistic expression⁽¹⁰⁾ (singing, dancing, music, literature, works of art); cooking; body expression⁽¹⁰⁾ (mime, magic); and conversations about soap operas, sports and celebrities, available at the link <https://www.flipsnack.com/lacpufms/ombro-amigo-digital.html>. The manual prepared for carrying out playful interventions was submitted to appreciation of understanding and refinement by research members, through a focus group. The methodology adopted in this intervention program regarding mediator training, meeting and program duration of meetings was based on a previous study that demonstrated the effectiveness of playful interventions in the quality of life and social support of patients with chronic diseases⁽¹¹⁾.

Figure 2 shows the flow of actions involved in the development and execution of the intervention program.

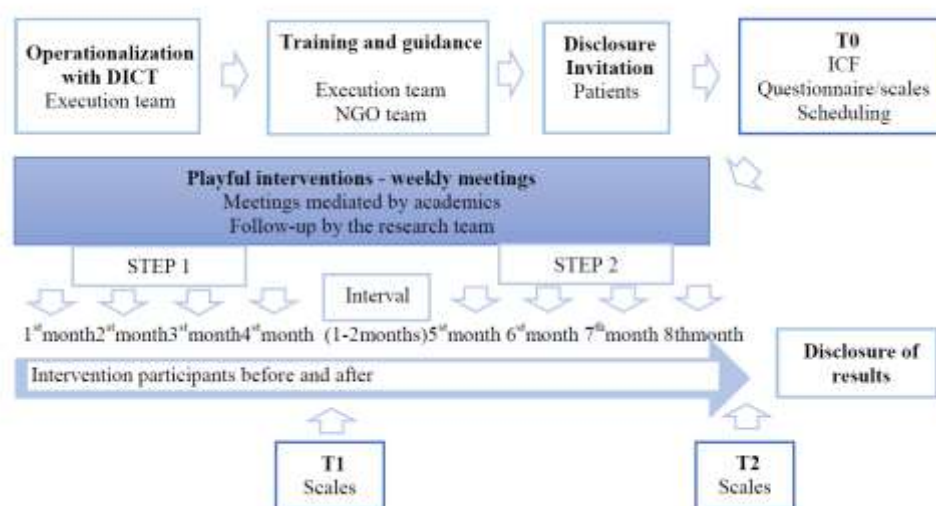


Figure 2. Flowchart prepared by the authors.

Participant characterization and assessment was carried out by the researchers via

WhatsApp® and telephone calls in three moments: pre-intervention (T0); post-

intervention 1 (T1); and post-intervention 2 (T2). The researcher who applied the pre- and post-intervention questionnaires did not participate in intervention implementation. A sociodemographic, clinical and behavioral characterization questionnaire was applied only before the interventions. The instrument used to assess HRQoL was the generic questionnaire for patients with cancer, 30-item European Organization for Research and Treatment of Cancer Core Quality of Life Questionnaire (EORTC-QLQ-C30), version 3.0, adapted and validated for Brazil⁽¹²⁾. The instrument comprises 30 self-administered questions with Likert-type response options, organized into four scales and 15 domains. Scores range from 0 to 100 and are calculated by domain. Internal consistency was adequate, with a satisfactory Cronbach's alpha value = 0.79. The authors authorized its use. The Depression, Anxiety and Stress Scale-Short Form (DASS-21), adapted and validated for Brazilian Portuguese⁽¹³⁾, was used to assess depression, anxiety and stress, containing 21 self-administered Likert-type questions, forming 3 subscales. The scores for each domain range from 0 to 21. Cronbach's alpha values were 0.90 for depression, 0.86 for anxiety, 0.88 for stress and 0.95 for the total of the three subscales. The Medical Outcomes Study - Social Support Survey (MOS-SSS)⁽¹⁴⁾, adapted and validated for the Brazilian population, was used to assess social support level, consisting of Likert-type 19 self-administered questions, broken down into three domains. The scores for each dimension, as well as the global social support scores range from 0 to 100. Cronbach's alpha coefficient was $\Rightarrow$ 0.83 for all domains. Both DASS-2 and MOS-SSS are public domain scales.

All analyzes were performed using the R Core Team (2021) program, with a significance level of 5%. The study factor corresponded to time (three times of the intervention program). The analyzed variables were HRQoL (EORTC-QLQ-C30), depression, anxiety and stress (DASS-21) and social support (MOS-SSS). Initially, descriptive analyzes of all variables were carried out. For this, absolute and relative frequencies were used for categorical variables, and mean, standard deviation, median, minimum and maximum values, for numeric variables.

Inferential analysis verified differences in pre-intervention, post-intervention 1 and post-intervention 2 times, based on generalized linear models for repeated measures over time (scores on DASS-21 and MOSS-SSS) and on Friedman and Nemenyi non-parametric tests (EORTC-QLQ-C30 questionnaire scores). There were no changes in outcomes after the interventions started.

This study met the ethical criteria recommended by the Declaration of Helsinki (2000), Resolutions 466/12 and 510/16 of the Brazilian National Health Council (CNS), in addition to CNS Circular Letter 2/21 and obtained approval from the Research Ethics Committee of the *Universidade Federal do Mato Grosso do Sul*, Brazil, under Opinion 4.254.126/2020 and Certificate of Presentation for Ethical Consideration (CAAE - *Certificado de Apresentação para Apreciação Ética*) 36102820.3.0000.0021. The digital Informed Consent Form (ICF) was sent via WhatsApp® or e-mail with the signature of the researcher in charge.

RESULTS

Most participants in the interventions were female (88.9%), over 50 years old (72.3%), with less than eight years of study (66.7%), living with 1 or 2 family members (55.6%), had breast cancer (66.8%) and were in post-cure follow-up (61.1%). Table 1 presents the results of the 15 participants' descriptive analyzes regarding the quality of life/global health status questionnaire and functional scales scores.

There was a significant increase in the score of the emotional domain of quality of life post-intervention 2 in relation to pre-intervention ($p=0.0020$), indicating that there was an improvement in participants' quality of life between these times. In this domain, the scores, which were below the pre-intervention cut-off point, reached acceptable levels after the playful interventions. The emotional quality of life assessed in this study is equivalent to the feelings of worry, tension, irritability and sadness reported by participants, reflecting participants' psychological distress degree in the context of the disease and the COVID-19 pandemic.

Table 01. Results of analysis of EORTC QLQ-C30 scores, overall health status and functional scales, among participants submitted to playful interventions. Três Lagoas, MS, Brazil, 2022. (n=15)

Variables	Pre-intervention (n = 15)		Post-intervention1 (n = 15)		Post-intervention 2 (n = 15)		p-value*
	Mean (Standard deviation)	Median (Minimum/Maximum)	Mean (Standard deviation)	Median (Minimum/Maximum)	Mean (Standard deviation)	Median (Minimum/Maximum)	
Emotional function	42.8 (30.7)	50.0 (0.0/91.7) ‡	60.6 (27.9)	66.7 (25.0/100.0) †‡	67.2 (20.7)	66.7 (25.0/100.0) †	0.0020
Physical function	69.8 (24.9)	66.7 (26.7/100.0) †	64.0 (25.3)	66.7 (26.7/100.0) †	64.9 (26.6)	73.3 (26.7/100.0) †	0.7047
Role playing	70.0 (32.2)	83.3 (0.0/100.0) †	68.9 (28.8)	66.7 (0.0/100.0) †	68.9 (30.7)	66.7 (16.7/100.0) †	0.8899
Cognitive function	60.0 (29.4)	50.0 (16.7/100.0) †	64.4 (17.7)	66.7 (33.3/100.0) †	64.4 (17.7)	66.7 (33.3/100.0) †	0.8187
Social role	72.2 (34.3)	83.3 (0.0/100.0) †	75.6 (31.4)	83.3 (0.0/100.0) †	76.7 (32.6)	83.3 (16.7/100.0) †	0.7047
Overall health status/QoL	69.4 (23.1)	75.0 (25.0/100.0) †	76.1 (16.9)	75.0 (41.7/100.0) †	78.3 (18.0)	83.3 (33.3/100.0) †	0.7047
Fatigue	37.8 (34.8)	33.3 (0.0/88.9) †	37.0 (27.1)	44.4 (0.0/77.8) †	38.5 (21.4)	33.3 (0.0/77.8) †	0.9355
Nausea/vomiting	10.0 (15.2)	0.0 (0.0/33.3) †	3.3 (6.9)	0.0 (0.0/16.7) †	2.2 (5.8)	0.0 (0.0/16.7) †	0.4204
Pain	45.6 (41.5)	33.3 (0.0/100.0) †	51.1 (28.5)	50.0 (0.0/100.0) †	52.2 (29.5)	50.0 (0.0/100.0) †	0.7047
Shortness of breath	15.6 (21.3)	0.0 (0.0/66.7) †	20.0 (27.6)	0.0 (0.0/100.0) †	11.1 (27.2)	0.0 (0.0/100.0) †	0.5220
Insomnia	28.9 (37.5)	0.0 (0.0/100.0) †	33.3 (41.8)	0.0 (0.0/100.0) †	37.8 (35.3)	33.3 (0.0/100.0) †	0.8052
Loss of appetite	11.0 (20.6)	0.0 (0.0/66.7) †	2.2 (8.6)	0.0 (0.0/33.3) †	6.7 (13.8)	0.0 (0.0/33.3) †	0.5488
Cold	17.8 (30.5)	0.0 (0.0/100.0) †	11.1 (27.2)	0.0 (0.0/100.0) †	15.6 (21.3)	0.0 (0.0/66.7) †	0.7047
Diarrhea	8.9 (26.6)	0.0 (0.0/100.0) †	0.0 (0.0)	0.0 (0.0/0.0) †	0.0 (0.0)	0.0 (0.0/0.0) †	0.8187
Financial problems	75.6 (36.7)	100.0 (0.0/100.0) †	64.4 (36.7)	66.7 (0.0/100.0) †	66.7 (37.8)	66.7 (0.0/100.0) †	0.7047

* Test: generalized linear models.

†, ‡ Distinct horizontal symbols indicate statistically significant difference between times ($p \leq 0.05$).

Table 2 shows a descriptive analysis of DASS-21 scores of the 15 participants. There was a significant decrease in depression ($p = 0.0106$), anxiety ($p = 0.0002$), stress ($p = 0.0032$) scores in post-intervention 1 and post-intervention 2 in relation to pre-intervention. This decrease in the

scores demonstrated, through the comparison between pre-intervention and post-intervention 2 scores, that there was a positive result among participants in emotional aspects, in which the context of a pandemic causes impacts.

Table 02. Results of analysis of DASS-21 scores of participants submitted to playful interventions. Três Lagoas, MS, Brazil, 2022. (n=15)5)

Variables	Pré-intervenção (n = 15)		Pós-intervenção 1 (n = 15)		Pós-intervenção 2 (n = 15)		p-value*
	Mean (Standard deviation)	Median (Minimum/Maximum)	Mean (Standard deviation)	Median (Minimum/Maximum)	Mean (Standard deviation)	Median (Minimum/Maximum)	
Depression	6,3 (6,3) †	5,0 (0,0/21,0)	3,3 (3,5) ‡	2,0 (0,0/13,0)	3,0 (3,3) ‡	3,0 (0,0/13,0)	0,0106
Anxiety	3,8 (3,6) †	3,0 (0,0/12,0)	1,7 (1,6) ‡	1,0 (0,0/5,0)	1,1 (1,6) ‡	0,0 (0,0/5,0)	0,0002
Stress	6,1 (4,7) †	7,0 (0,0/14,0)	3,5 (2,4) ‡	4,0 (0,0/7,0)	3,5 (2,4) ‡	4,0 (0,0/7,0)	0,0032

Friedman and Nemenyi non-parametric tests

†, ‡ Distinct horizontal symbols indicate statistically significant difference between times ($p \leq 0.05$)

Table 3 shows descriptive results of MOS-SSS that analyzes functional social support and comparisons between times. In the assessment made post-intervention 1 and post-intervention 2, a significant decrease in the score of the affective, informational domain ($p = 0.0036$) and a significant increase of the emotional, positive social

interaction domain ($p < 0.0001$) can be observed in relation to pre-intervention. Thus, there was an improvement in the social support of the participants in relation to the availability of close people with whom to have fun, relax and exchange or show love and affection; needs that are affected by the restrictions imposed by the pandemic.

Table 03. Results of analyzes of MOS-SSS scores of functional social support of participants submitted to playful interventions. Três Lagoas, MS, Brazil. (n=15)

Variables	Pré-intervenção (n = 15)		Pós-intervenção 1 (n = 15)		Pós-intervenção 2 (n = 15)		p-value*
	Mean (Standard deviation)	Median (Minimum/Maximum)	Mean (Standard deviation)	Median (Minimum/Maximum)	Mean (Standard deviation)	Median (Minimum/Maximum)	
Material	6,3 (6,3) †	5,0 (0,0/21,0)	3,3 (3,5) ‡	2,0 (0,0/13,0)	3,0 (3,3) ‡	3,0 (0,0/13,0)	0,0106
Affective, informational	3,8 (3,6) †	3,0 (0,0/12,0)	1,7 (1,6) ‡	1,0 (0,0/5,0)	1,1 (1,6) ‡	0,0 (0,0/5,0)	0,0002
Emotional, positive social interaction	6,1 (4,7) †	7,0 (0,0/14,0)	3,5 (2,4) ‡	4,0 (0,0/7,0)	3,5 (2,4) ‡	4,0 (0,0/7,0)	0,0032

*Friedman and Nemenyi non-parametric tests.

†, ‡ Distinct horizontal symbols indicate statistically significant difference between times ($p \leq 0.05$), Friedman and Nemenyi non-parametric tests.

There was no observation or report of damage or unwanted effects in the study participants after the playful interventions.

DISCUSSION

The sociodemographic and clinical profile of patients in this study are compatible with current statistics in Brazil, according to which cancer predominates among women, with breast cancer being the most frequent type among them, and age above 50 years, the risk factor for the disease⁽¹⁵⁾.

This study demonstrated that the HRQoL of patients with cancer improved in the emotional aspect after interventions. This data corroborates the results of another randomized study⁽¹⁶⁾ based on interventions with digital games, carried out with 76 women with breast cancer undergoing cytotoxic chemotherapy, which also demonstrated an improvement in patients' psychological status after interventions. The results of an exploratory and cross-sectional survey⁽¹¹⁾ carried out in Spain with 2.346 adults, which assessed perceived quality of life associated with DICT use during social distancing, also confirm that they have improved HRQoL, especially psychological well-being and satisfaction with life. A systematic review⁽¹⁷⁾ that analyzed the effectiveness of social interventions during isolation found that some evidence-based digital interventions, involving bonds with volunteers or close people, had a positive impact on the emotional QoL of older adults during the pandemic.

The present study showed that digital playful interventions were effective in reducing the depression perceived by participants, corroborating the results of a randomized clinical trial⁽¹⁸⁾ that also demonstrated an improvement in depressive mood in patients with breast cancer diagnosed with mild to moderate depression, after participating in an intervention based on a digital game.

An improvement in anxiety levels of patients with cancer was also demonstrated during the present study, confirming the result of a survey⁽¹⁹⁾ involving women with breast cancer undergoing surgery who participated in a recreational intervention based on immersion in virtual reality (VR), during physiotherapy

sessions, which showed an increase in positive emotions (joy and happiness) and a decrease in anxiety after the interventions, with a more intense effect in participatory than contemplative immersion. Researchers⁽²⁰⁾ who critically analyzed exergames' opportunities and challenges (electronic games that capture and virtualize real body movements) as a coping strategy during the COVID-19 pandemic pointed out that such intervention induces beneficial acute and chronic physiological changes in the body, which can improve anxiety levels in populations with chronic diseases. They recommend exergames to improve social isolation during the pandemic and combat anxiety disorders, as it is a pleasant, easy-to-use tool that can be shared with friends and family.

Participants in this study also had a reduction in stress levels after participating in digital playful interventions, as demonstrated in an exploratory study⁽²¹⁾ based on interventions with VR games with biofeedback with the aim of training stress mentality. This study demonstrated that both healthy participants and patients with stress had a more positive stress mindset after the intervention. Another study⁽²²⁾ also corroborates this by demonstrating the effectiveness of a playful intervention based on music with 26 hospitalized patients with cancer in reducing stress, with a statistically significant decrease in the mean of salivary cortisol after the intervention. However, that study applied a single session of three songs through headphones and individually, unlike this study, in which music constituted one of the playful intervention activities, being applied in a context of digital interaction.

In the present study, social support improved in the emotional aspect and positive social interaction among patients with cancer after digital interventions, with a very expressive result ($p < 0.0001$). A theoretical-reflective study on new perspectives of mental health care in the context of a pandemic points out that psychosocial care services and researchers at public universities are in the process of incorporating virtual technologies that ensure emotional support of the population in the context of crisis, in order to ensure people's psychosocial well-being. Among these resources, mention should be made of online

channels with therapeutic listening chat for welcoming people with suggestions for movies and readings, healthy food recipes, therapy for pets, poetry and others, in addition to availability of booklets, folders, podcasts, videos and others teaching exercises and practices in mental health to deal with anxiety, sadness, and mourning in times of isolation⁽²³⁾.

The small number of participants in the study was a limitation, although the impact of the interventions was significant on the patients who participated. It is believed that low digital literacy levels, concerns about online security and privacy, digital poverty and audiovisual deficits may have been barriers to the successful implementation of interventions. Another limitation is the fact that the intervention manual was not previously validated with specialists in the subject.

CONCLUSION

Digital playful interventions improved emotional quality of life, depression, anxiety,

stress and, mainly emotional support, positive social interaction of patients with cancer during the COVID-19 pandemic.

The relevance of this study consisted in demonstrating positive psychosocial effects in a vulnerable population through incorporating technology that represented a way to develop a connection between patients and RAO professionals safely in a scenario of social distancing conducive to mental disorders. Thus, the results of this study may guide the planning and implementation of this type of intervention, which may be mediated by professionals from the RAO multidisciplinary team or by duly trained and supervised community volunteer members.

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EFEITOS DE INTERVENÇÕES LÚDICAS DIGITAIS EM PACIENTES ONCOLÓGICOS NA PANDEMIA DA COVID-19: ESTUDO QUASE-EXPERIMENTAL

RESUMO

Objetivo: avaliar o efeito de intervenções lúdicas digitais na qualidade de vida, depressão, ansiedade, estresse e apoio social em pacientes oncológicos na pandemia da Covid-19. **Método:** estudo quase-experimental, com 15 pacientes de uma organização não governamental brasileira, de agosto de 2020 a outubro de 2021. As intervenções digitais consistiram em contar histórias, jogos, culinária, expressão artística e corporal. Foram utilizados: questionário sociodemográfico e clínico, questionário de qualidade de vida, escalas de depressão, ansiedade e estresse e apoio social, todos validados em versão brasileira. Os participantes foram avaliados nos tempos: pré-, pós-intervenção 1 (após 4 meses) e pós-intervenção 2 (após 10 meses). A análise inferencial verificou diferenças entre os tempos utilizando modelos lineares generalizados e testes não paramétricos de Friedman e Nemenyi, considerando-se $p \leq 0,05$. **Resultados:** a percepção da qualidade de vida melhorou na função emocional pós-intervenção 2 em relação ao tempo pré-intervenção, com significância estatística ($p=0,0020$); depressão ($p=0,0106$), ansiedade ($p=0,0002$), estresse ($p=0,0032$) e apoio emocional, interação social positiva ($p<0,0001$) melhoraram com significância estatística pós-intervenção 1 e pós-intervenção 2 relacionadas ao tempo pré-intervenção. **Conclusão:** as intervenções contribuíram para melhorar a qualidade de vida emocional, depressão, ansiedade, estresse, apoio emocional e interação social positiva em pacientes oncológicos na pandemia, podendo ser estimuladas nesta população.

Palavras-chave: Oncologia. Tecnologia da Informação. Transtornos Mentais. Apoio Social. SARS-coV-2.

EFFECTOS DE LAS INTERVENCIONES DIGITALES EN PACIENTES ONCOLÓGICOS EN LA PANDEMIA DE COVID-19: ESTUDIO CUASI-EXPERIMENTAL

RESUMEN

Objetivo: evaluar el efecto de intervenciones lúdicas digitales en la calidad de vida, depresión, ansiedad, estrés y apoyo social en pacientes oncológicos en la pandemia de Covid-19. **Método:** estudio cuasi-experimental, con 15 pacientes de una organización no gubernamental brasileña, de agosto de 2020 a octubre de 2021. Las intervenciones digitales consistieron en contar historias, juegos, culinaria, expresión artística y corporal. Fueron utilizados: cuestionario sociodemográfico y clínico, cuestionario de calidad de vida, escalas de depresión,

ansiedade y estrés y apoyo social, todos validados en versión brasileña. Los participantes fueron evaluados en los tiempos: pre, posintervención1 (tras 4 meses) y posintervención2 (tras 10 meses). El análisis inferencial encontró diferencias entre los tiempos, utilizando modelos lineales generalizados y prueba no paramétricas de Friedman y Nemenyi, considerándose $p \leq 0,05$. **Resultados:** la percepción de la calidad de vida mejoró en la función emocional posintervención2 en relación al tiempo preintervención, con significación estadística ($p=0,0020$); depresión ($p=0,0106$), ansiedad ($p=0,0002$), estrés ($p=0,0032$) y apoyo emocional, interacción social positiva ($p<0,0001$) mejoraron con significación estadística posintervención1 y posintervención2 relacionadas al tiempo preintervención. **Conclusión:** las intervenciones contribuyeron a mejorar la calidad de vida emocional, depresión, ansiedad, estrés, apoyo emocional e interacción social positiva en pacientes oncológicos en la pandemia, pudiendo ser fomentadas entre esta población.

Palabras clave: Oncología. Tecnología de la Información. Trastornos Mentales. Apoyo Social. SARS-coV-2.

REFERENCES

- Bray F, Ferlay J, Soerjomataram I, Siegel RL, Torre LA, Jemal A. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin* [Internet]. 2018; 68(6):394-424. DOI: <https://doi.org/10.3322/caac.21492>
- Silva TTM, Araújo NM, Sarmento SDG, Castro GLT, DantasDV, Dantas, RAN. Impact of Covid-19 in patients with cancer: A scoping review. *Texto contexto - enferm*. [Internet]. 2021; 30:e20200415. DOI: <https://doi.org/10.1590/1980-265X-TCE-2020-0415>
- Király O, Potenza MN, Stein DJ, King DL, Hodgins DC, Saunders JB, et al. Preventing problematic internet use during the Covid-19 pandemic: Consensus guidance. *Compr Psychiatry* [Internet]. 2020;100: e152180. DOI: <https://doi.org/10.1016/j.comppsych.2020.152180>
- Brasil. Ministério da Saúde; Fundação Osvaldo Cruz, Escola de Governo Fiocruz Brasília. Recomendações e orientações em saúde mental e atenção psicossocial na Covid-19. Brasília, DF (BR): Fiocruz [Internet]. 2020. Disponível em: <https://www.arca.fiocruz.br/handle/icict/44264>
- Frygner-Holm S, Russ S, Quitmann J, Ring L, Zyga O, Hansson M, et al. Pretend play as an intervention for children with cancer: a feasibility study. *J Pediatr Oncol Nurs* [Internet]. 2020; 37(1): 65-75. DOI: <http://doi.org/10.1177/1043454219874695>
- Games for Mental Health (Special Issue). *Games Health J* [Internet]. 2021; 10(5): 293-4. Disponível em: <https://www.liebertpub.com/doi/full/10.1089/g4h.2021.7021.cfp.2>
- Marin AH, Schaefer MP, Lima M, Rolim KI, Fava DC, Feijó LP. Delineamentos de Pesquisa em Psicologia Clínica: Classificação e Aplicabilidade. *Psicol cienc prof* [Internet]. 2021; 41: e221647. DOI: <https://doi.org/10.1590/1982-3703003221647>
- Eldridge SM, Chan CL, Campbell MJ, Bond CM, Hopewell S, Thabane L, Lancaster GA; PAFS consensus group. CONSORT 2010 statement: extension to randomised pilot and feasibility trials. *BMJ* [Internet]. 2016; 2: 64. DOI: <https://doi.org/10.1136/bmj.i5239>
- Banskota S, Healy M, Goldberg EM. 15 Smartphone Apps for Older Adults to Use While in Isolation During the COVID-19 Pandemic. *West J Emerg Med* [Internet]. 2020; 21(3):514-25. DOI: <https://doi.org/10.5811/westjem.2020.4.47372>
- Tong F, Yu C, Wang L, Chi I, Fu F. Systematic review of efficacy of interventions for social isolation of older adults. *Front Psychol* [Internet]. 2021;12: e554145. DOI: <https://doi.org/10.3389/fpsyg.2021.554145>
- Santos FRD, Pinto S, Pessalacia JDR, Luchesi BM, Silva LAD, Marinho MR. Effects of clown activities on patients eligible for palliative care in primary health care. *Rev Bras Enferm* [Internet]. 2021; 74(5): e20200431. DOI: <https://doi.org/10.1590/0034-7167-2020-0431>
- Campos JADB, Spexoto MCB, Silva WR da, Serrano SV, Marôco J. European Organization for Research and Treatment of Cancer Quality of Life Questionnaire Core 30: factorial models to Brazilian cancer patients. *Einstein (São Paulo)* [Internet]. 2018; 16(1). DOI: <https://doi.org/10.1590/S1679-45082018AO4132>
- Vignola RC, Tucci AM. Adaptation and validation of the Depression, Anxiety and Stress Scale (DASS) to Brazilian portuguese. *J Affect Disord* [Internet]. 2014; 155:104-9. DOI: <https://doi.org/10.1016/j.jad.2013.10.031>
- Zanini DS, Peixoto EM, Nakano TC. Escala de Apoio Social (MOS-SSS): Proposta de Normatização com Referência nos Itens. *Trends in Psychology* [Internet]. 2018; 26(1). DOI: <https://doi.org/10.9788/TP2018.1-15Pt>
- Brasil. Ministério da Saúde; Instituto Nacional de Câncer José Alencar Gomes da Silva. Estimativa 2020: incidência de câncer no Brasil. Rio de Janeiro, RJ (BR): INCA [Internet]. 2019. Disponível em: <https://www.inca.gov.br/publicacoes/livros/estimativa-2020-incidencia-de-cancer-no-brasil>
- Kim HJ, Kim SM, Shin H, Jang JS, Kim YI, Han DH. A mobile game for patients with breast cancer for chemotherapy self-management and quality-of-life improvement: randomized controlled trial. *J Med Internet Res* [Internet]. 2018;20(10):e273. DOI: <https://doi.org/10.2196/jmir.9559>
- Del Castillo-Rodríguez JA, Ramos-Soler I, López-Sánchez C, Quiles-Soler C. Information and communication technologies and quality of life in home confinement: Development and validation of the TICO scale. *PLoS ONE* [Internet]. 2020;15(11): e0241948. DOI: <https://doi.org/10.1371/journal.pone.0241948>
- Kim SM, Kim HJ, Hwang HC, Hong JS, Bae S, Min KJ, et al. The effects of a serious game on depressive symptoms and anxiety in breast cancer patients with depression: a pilot study using functional magnetic resonance imaging. *Games Health J* [Internet]. 2018; 7(6): 409-17. DOI: <https://doi.org/10.1089/g4h.2017.0183>
- Buche H, Michel A, Piccoli C, Blanc N. Contemplating or acting? Which immersive modes should be favored in virtual reality during physiotherapy for breast cancer rehabilitation. *Front Psychol* [Internet]. 2021; 12: e631186. DOI: <https://doi.org/10.3389/fpsyg.2021.631186>
- Viana RB, de Lira CAB. Exergames as coping strategies for anxiety disorders during the covid-19 quarantine period. *Games Health J* [Internet]. 2020; 9(3):147-9. DOI: <https://doi.org/10.1089/g4h.2020.0060>
- Maarsingh BM, Bos J, Van Tuijn CFJ, Renard SB. Changing stress mindset through stressjam: a virtual reality game using biofeedback. *Games Health J* [Internet]. 2019;8(5):326-31. DOI: <https://doi.org/10.1089/g4h.2018.0145>
- Santos MS, Thomaz FM, Jomar RT, Abreu AMM, Taets, GGCC. Music in the relief of stress and distress in

cancer patients. Rev. Bras. Enferm. [Internet]. 2021; 74(2):e20190838. DOI: <https://doi.org/10.1590/0034-7167-2019-0838>

23. Wünsch CG, Freitas BHB, Rézio LA, Gaíva MAM,

Kantorski LP. O cuidado ao jovem em sofrimento mental na pandemia covid-19: uma reflexão teórica. Cienc Cuid Saúde [Internet]. 2021;200. DOI:

<https://doi.org/10.4025/ciencuidsaude.v20i0.58805>

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