HOSPITAL CLOWNS ON PSYCHOLOGICAL STRESS AND CANCER-RELATED FATIGUE IN PEDIATRIC ONCOLOGY PATIENTS UNDERGOING CHEMOTHERAPY

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INTRODUCTION

Hospital clowns has been shown to enhance emotional and behavioral processes but few studies have comprehensively examined the effectiveness of this intervention using biomarkers.

OBJECTIVE

To evaluate the effect of a clown intervention on the levels of psychological stress and cancer-related fatigue in pediatric oncology patients undergoing chemotherapy.

METHODS

Sixteen patients who met all criteria from a pediatric oncology inpatient unit in a Brazilian hospital participated in this quasi-experimental study. Eight saliva samples were collected, comprising 4 at baseline and 4 after clown intervention (+1h, +4h, +9h, and +13h post-awakening). Salivary cortisol and α -amylase (sAA) levels were determined using ELISA. Stress and fatigue were measured by the Child Stress Scale-ESI™ and the PedsQL™ Multidimensional Fatigue Scale respectively. Non-parametric statistics was used.

RESULTS

The mean age of the patients was 11.4 years. The most prevalent tumor was osteosarcoma (n=6), followed by leukemia (n=4). Most (81.3%, n=13) were primary neoplasia, and 68.7% (n=11) had metastases. In comparison with baseline, the total psychological stress and fatigue levels improved after the clown intervention (p=0.003 and p=0.04, respectively).

Table 1. Scoring of Fatigue and Stress Dimensions in Pediatric Inpatients With Cancer (n = 16) at Baseline and Postintervention

Instrument	Baseline, Mean (SD) ^a	Postintervention, Mean (SD) ^a	P
PedsQL dimensions (self-report)			
General fatigue	69 (19.3)	77.7 (21)	.18
Sleep/rest fatigue	60.1 (22.8)	66.6 (18.4)	.32
Cognitive fatigue	69.9 (25.6)	77.7 (21)	.20
Total PedsQL fatigue score	66.3 (19.6)	81.5 (17.3)	.04 ^b
ESI domains			
Physical reactions	6.7 (5.5)	4.4 (4.2)	.07
Psychological reactions	10.6 (5.9)	7 (6.1)	.04 ^b
Psychological reactions with depressive component	6.4 (4.5)	4.2 (4)	.04 ^b
Psychophysiological reactions	8.2 (4.6)	4 (2.6)	.006 ^b
Total ESI™ score	32.1 (17.6)	19.6 (14.1)	.003 ^b

Salivary cortisol showed a significant decrease following clown intervention at the collection time points +1h, +9h, and +13h (p<0.05); however, α -amylase levels remained unchanged during the chemotherapy protocol.

Table 2 shows that the total stress scores from the pediatric patients correlated positively with cortisol Area Under Curve at baseline (r=.35, P=.03) and at post-intervention (r=.02, P= .04).

Table 2. Spearman Correlation Coefficients of Salivary Cortisol and sAA and ESI and PedsQL Scoring of Pediatric Inpatients with Cancer (n = 16) at Preintervention and Postintervention

	Cortisol AUC		sAA AUC	
	Pre (ρ) ^a	Post (ρ) ^a	Pre (ρ) ^a	Post (ρ) ^a
Total ESI stress score	0.35 .03	0.02 .04	-0.57 .02 ^b	-0.27 .34
Total PedsQL fatigue score	-0.27 .30	-0.26 .36	0.44 .08	0.37 .18

CONCLUSION

These findings provide preliminary evidence that clown intervention merits further study as a way to reduce stress and fatigue in pediatric cancer inpatients, and that self-report and biomarker measures are feasible to collect in this patient group.

REFERENCE

Lopes-Junior LC, Silveira DSC, Olson K, et al. Clown Intervention on Psychological Stress and Fatigue in Pediatric Patients With Cancer Undergoing Chemotherapy. **Cancer Nursing**. 2019 Feb 12. doi: 10.1097/NCC.0000000000000690. [Epub ahead of print]

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