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Situational diagnosis and occupational therapy interventions in a pediatric onco-hematological intensive care unit

Diagnóstico situacional e intervenções de terapia ocupacional em unidade de terapia intensiva onco-hematológica pediátrica

Diagnóstico situacional e intervención de terapia ocupacional en la unidade de cuidados intensivos pediátricos onco-hematológico

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Mariana de Paiva Franco[1]
Aide Mitie Kudo[2]

The objective of this study was to trace the situational diagnosis of a Pediatric Onco-hematological Intensive Care Unit (POICU) and verify the possible interventions of Occupational Therapy (OT). This is a retrospective and descriptive experience report carried out in 2014, considering the period of four months after insertion of OT in the POICU of a tertiary hospital in the city of São Paulo. Based on the understanding of the patients' profile and the dynamics of the Unit, it was possible to create an assessment instrument. For the period studied, 25 out of 29 hospitalized children aged over 7 years and diagnosed with leukemia were admitted to the hospital in conscious or sedated state at the moment of hospitalization, and the length of hospitalization was up to 7 days. Occupational Therapy performed 97 interventions: assessment, guidance to caregivers, bed positioning, Assistive Technology. The clinical experience made it possible to affirm that OT has competence to intervene in the case of patients and families in the space of Pediatric Onco-hematological Intensive Care Unit, significantly contributing to the multiprofessional team and to the quality of life of the patients/careers assisted.
Descriptors: Occupational therapy; Pediatric intensive care units; Hospital oncology service.

O objetivo deste estudo foi traçar o diagnóstico situacional de uma Unidade de Terapia Intensiva Onco-hematológica Pediátrica (UTIOP) e verificar as possíveis intervenções de Terapia Ocupacional (TO). Este é um relato de experiência retrospectivo e descritivo, realizado em 2014 considerando o período de quatro meses após a inserção da TO na UTIOP de um Hospital terciário da cidade de São Paulo. A partir da compreensão do perfil dos pacientes e da dinâmica da Unidade, foi possível a elaboração de um instrumento de avaliação. Para o período a TO atendeu 25 de 29 crianças internadas, com predominância de idade de até 7 anos e diagnóstico de leucemia, com a condição de internação de consciente ou sedado e tempo de internação de até 7 dias. a TO realizou 97 intervenções: avaliação, orientações aos cuidadores, posicionamento no leito, Tecnologia Assistiva. A partir da experiência clínica pode se afirmar que o TO possui competência para intervir junto aos pacientes e seus familiares no espaço da Unidade de Terapia Intensiva Pediátrica e Oncológica, contribuindo significativamente com a equipe multiprofissional e na qualidade de vida dos pacientes/cuidadores assistidos.
Descritores: Terapia ocupacional; Unidades de terapia intensiva pediátrica; Serviço Hospitalar de Oncologia.

El objetivo de este estudio fue trazar el diagnostico situacional de una Unidad de Terapia Intensiva Onco-hematológica Pediátrica (UTIOP) y verificar las posibles intervenciones de Terapia Ocupacional (TO). Este es un relato de experiencia retrospectivo y descriptivo, realizado en 2014 considerando el período de cuatro meses después de la inserción de la TO en la UTIOP de un Hospital terciario de la ciudad de São Paulo. A partir de la comprensión del perfil de los pacientes y de la dinámica de la Unidad, fue posible la elaboración de un instrumento de evaluación. Para el periodo la TO atendió 25 de 29 niños internados, con predominio de edad de hasta 7 años y diagnóstico de leucemia, con la condición de internación de consiente o sedado y tiempo de internación de hasta 7 días. La To realizó 97 intervenciones: evaluación, orientaciones a los cuidados, posición en el lecho, Tecnología Asistida. A partir de la experiencia clínica se puede afirmar que el TO posee competencia para intervenir junto a los pacientes y de sus familiares en el espacio de la Unidad de Terapia Intensiva Pediátrica y Oncológica, contribuyendo significativamente con el equipo multiprofessional y en la calidad de vida de los pacientes/cuidadores asistidos.
Descriptores: Terapia ocupacional; Unidades de cuidado intensivo pediátrico; Servicio de oncología en hospital.

[1]Occupational Therapist. Mental Health Specialist. Neuro-paediatric Intervention Specialist. ORCID: 0000-0001-7933-1256 E-mail: mariana.franco@hc.fm.usp.br
[2] Occupational Therapist. Expert in Hospital Administration. Hospital Service Supervisor and Coordinator of the Occupational Therapy Service of the Instituto da Criança do Hospital de Clínicas da Faculdade de Medicina da Universidade de São Paulo. ORCID: 0000-0003-2233-5701 E-mail: aide.kudo@hc.fm.usp.br

INTRODUCTION

Cancer in children and adolescents between 0 and 19 years old embodies a set of diseases that present particular characteristics, mainly in relation to clinical behavior and histopathology.

These are considered rare diseases, corresponding to 1% to 3% of all malignant tumors. In Brazil, children and young people represent 7% of cases of deaths caused by cancer, being considered the greatest source of disease-related mortality. In 2013, there were 2,835 deaths by cancer among children and young people aged 1 to 19 years. The most common neoplasm diagnoses in childhood are leukemias, central nervous system tumors, lymphomas, neuroblastomas, Wilms' tumor, retinoblastoma, germ cell tumor, osteosarcoma, and sarcomas[1].

Over the past 40 years, progress in treatment of cancers in childhood and adolescence has been significant, with success in 70% of cases when diagnosed early and treated in specialized centers[2].

The growing advance of scientific knowledge, technology for diagnosis, and therapeutic resources has contributed to the effectiveness of the treatment of children with onco-hematological pathologies; however, the evolution of the disease itself and clinical complications with risk of death during treatment are still a reality. At this stage, the resources of intensive care units are fundamental to overcome this critical stage of treatment[3].

Intensive Care Units are characterized as spaces with a structure capable of providing specialized assistance to critically ill patients who require rigorous and intensive control of vital parameters and who are under a potential risk of death[4]. These facts require continuously specialized multiprofessional attention, specific materials and technologies required for diagnosis, monitoring and therapy.

Regarding the Pediatric Intensive Care Unit, this does not differ from the Adult Unit, and is defined, according to Resolution nº 7 of February 24, 2010, of the Ministry of Health, as a critical area for hospitalization of critically ill patients aged 29 days to 14 or 18 years, and this limit varies according to each institution[5].

Due to these conditions, intensive care patients are usually patients with the following features: in clinically severe/critical situation; with unstable hemodynamics; with altered level of consciousness (either awake, in coma or in induced coma); under continuous monitoring of vital signs; in need for mechanical ventilation (patients with respiratory insufficiency); with peripheral venous access or central infusion of medications, drains and probes; constantly manipulated by professionals due to invasive clinical procedures, control and administration of medications; and bedridden[3].

As for the physical environment, ICUs are characterized as closed, restricted and limited units for the access of people; with the beds separated by curtain walls, arranged in a way that allows the continuous observation by professionals; use of various monitoring and basic life support equipment such as mechanical ventilators (MVs), vital signs monitors, equipment for continuous infusion and fluid control; continuous and collective, and usually artificial, lighting; with intermittent noise due to equipment with sound alerts[3].

Still in relation to Resolution nº 7 of February 24, 2010, of the Ministry of Health, the eighteenth article recommends that Adult and Pediatric Intensive Care Units should guarantee Occupational Therapy assistance by its own or outsourced means[5].

Given this, occupational therapists inserted in the multiprofessional team of the Intensive Care Units are able to contribute to the integral care to patients and their relatives.

The perspective of the occupational therapist considering the individual in his personal, social and affective aspects can minimize the suffering caused by the process of illness and hospitalization through occupational therapeutic resources appropriate to the intensive care environment and to the clinical conditions of the patient[6].

Occupational Therapy acts in the prevention and promotion of actions for the maintenance of occupational performances that enable the improvement of health, quality of life and autonomy of the patients, responsible for analyzing and promoting the patients' occupational life in its different aspects[7].

In the pediatric hospital context, Occupational Therapy focus on health promotion, seeking alternatives to enhance the quality of life of patients and the re-signification of the daily life that was interrupted by the illness and the hospitalization[8].

Professional work in this context should cover physical, organic and functional aspects, as well as the psychosocial aspects inherent to the course of the disease, treatment and hospitalization, such as pain and rupture of daily life, imminent risk of death, as well as expectations of the patients and their families regarding the treatment and the care and the impacts in their daily life and intra- and extra-hospital routine[7].

In this sense, the field of action is broad, including physical aspects of functionality; prevention of pressure ulcers due to immobility and confinement to bed rest; help in communication and interaction with patients; and emotional aspects arising from the patient's clinical state and the stressful environment of the intensive care unit.

Thus, the objective of this study was to trace the situational diagnosis of a Pediatric Onco-hematological Intensive Care Unit (POICU) and to verify the possible interventions of OT.

METHOD

The present study is characterized as an experience report that seeks to present the retrospective analysis of the actions of Occupational Therapy undertaken from April/2014 to August/2014, during the initial insertion of occupational therapy in an Intensive Care Unit of the Pediatric Onco-hematological Unit of a specialized Tertiary Hospital, linked to a Higher Education Institution of the city of São Paulo.

The process of insertion of Occupational Therapy began in the first half of April 2014, concomitantly with the inauguration of this Unit. In August 2014, it was considered necessary to carry out a retrospective analysis, tracing a situational diagnosis of the Intensive Care Unit and seeking to understand the patients' profile, the dynamics of the unit and possible occupational therapy interventions in this context.

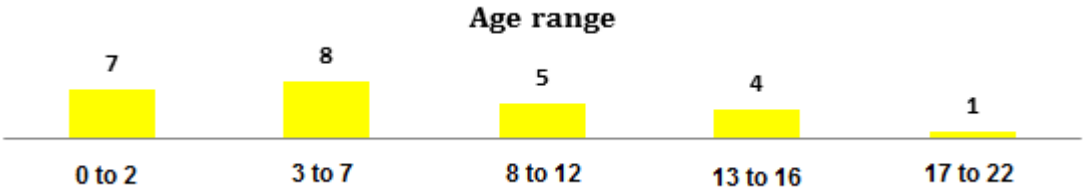
This is a descriptive study, carried out by means of clinical observations, records of hospitalizations, personal and clinical data contained in the medical charts and record of interventions performed by the reference occupational therapist of the Unit, and clinical discussion with a multiprofessional team. Data were analyzed and presented as graphs.

RESULTS

The activities of the POICU began in the second half of April 2014, with operational capacity of seven beds, but only with three active beds in the period of analysis.

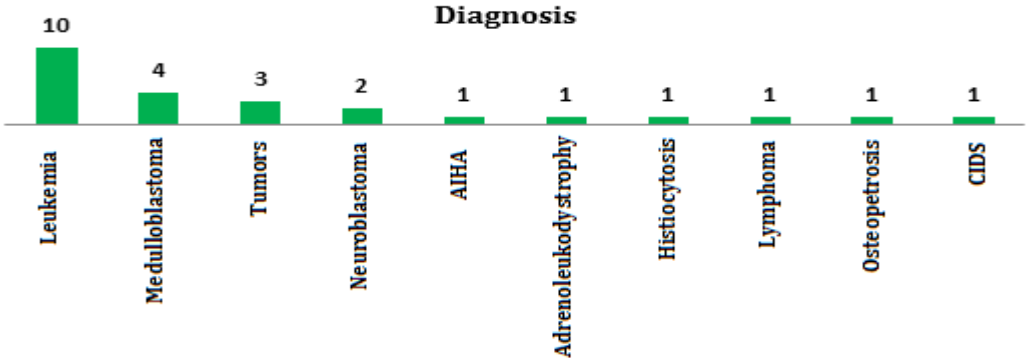
The target audience was patients aged 0 to 18 years with diagnosis of Onco-hematological diseases or who had undergone Hematopoietic Stem Cell Transplantation (HSCT). During this period (2nd fortnight from April to 1rst fortnight of August 2014), the unit provided assistance to 29 patients.

The inclusion of Occupational Therapy in this context occurred concurrently with the inauguration of the Unit and in this period, 25 patients aged between 5 months and 22 years, with a predominance of 0 to 8 years of age, were assisted by the Occupational Therapy Service (Graph 1).



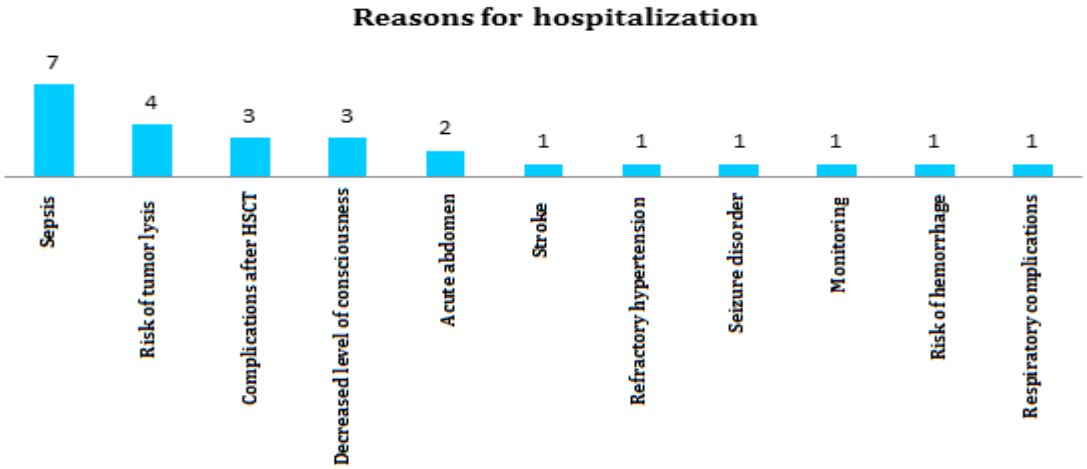
Graph .1 Age range of pediatric ICU inpatients admitted between April and August 2014. HC-FMUSP, 2014.

As for the baseline diagnosis, the following pathologies were observed: leukemias (AML and ALL) (40%), CNS tumors (28%) – among which medulloblastoma had the highest prevalence (16%) -, neuroblastoma (8%), autoimmune hemolytic anemia (AIHA) (4%), adrenoleukodystrophy (4%), combined immunodeficiency syndrome (CIDS) (4%), osteopetrosis (4%) and histiocytosis (4%), according to Graph 2.



Graph 2. Diagnosis of pediatric ICU inpatients admitted between April and August 2014. HC-FMUSP, 2014.

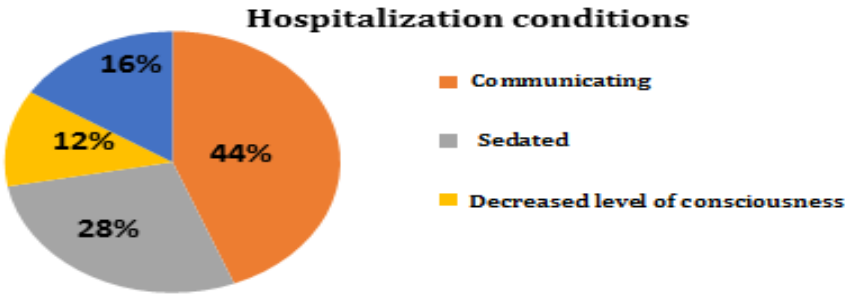
The reasons for transfer to the POICU were: sepsis (28%), risk of tumor lysis (16%), decreased level of consciousness (12%), complications after HSCT (12%), acute abdomen (8%), followed by risk of hemorrhage (4.8%), stroke (4.8%) refractory hypertension (4.8%), seizure disorder (4.8%) and respiratory complications (4.8%), as shown in Graph 3.



Graph 3. Reasons for admission to the pediatric ICU between April and August 2014. HC-FMUSP, 2014.

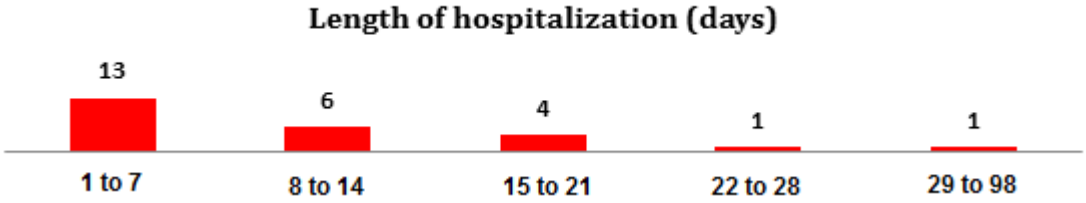
As for the conditions presented by the patients during the interventions in the issue of communication/interaction, there were four categories: communicating; sedated, decreased level of consciousness; and, sedated/ communicating. Patients with verbal or nonverbal communication were included in the category 1 - communicating.

Those who were unable to establish any type of communication due to lowered level of consciousness were included in category 2 - decreased level of consciousness. Those who did not establish contact due to the need of using medications for sedation due to their clinical condition and/or need for orotracheal intubation (OTI) were included in category 3 - sedated. The category 4 - sedated/communicating referred to those with whom the occupational therapist performed interventions in two different moments, during the period of sedation and after extubation, as shown in the Graph 4.



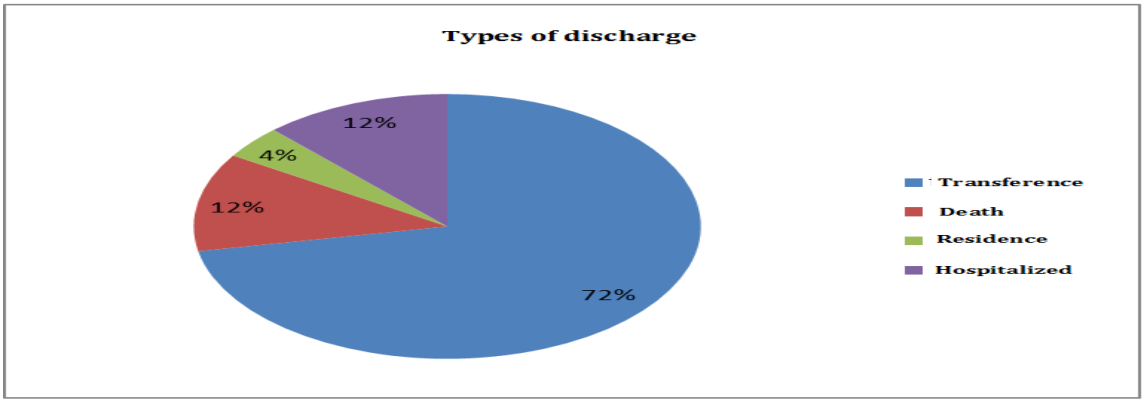
Graph 4. Conditions of pediatric ICU inpatients admitted between April and August 2014. HC-FMUSP, 2014.

As for the length of stay in the POICU of the patients assisted by Occupational Therapy, there was a variation between 1 and 98 days. There was a higher prevalence of 1 to 7 days, representing 52% of the cases, followed 8 to 14 days in 24% of the cases, 15 to 21 days in 16%, 22 to 28 days in 4%, and 98 days in 4% of the cases too, as shown in Graph 5.



Graph 5. Length of hospitalization in the pediatric ICU between April and August 2014. HC-FMUSP, 2014.

As for discharge, there were three types: death, residence and transference. Transferences were made to other units linked to the mentioned hospital and return to the original healthcare unit, according to Graph 6.



Graph 6. Types of discharge from the pediatric ICU between April and August 2014. HC-FMUSP, 2014.

In the analyzed period, 97 Occupational Therapy interventions were implemented. They were: assessment, guidance to caregivers, bed positioning, Assistive Technology - evaluation and preparation of upper-limb orthotics and adaptation to play; realization of activity of interest; and embracement of parents or companions.

DISCUSSION

The findings in this study regarding leukemia (40%) and tumors of the central nervous system (CNS) as the main diagnoses of patients treated in this Unit are in agreement with what is described by INCA, 2017, where leukemias attain the largest percentage (26%), followed by lymphomas (14%) and tumors of the central nervous system in the pediatric population. INCA also estimated occurrence of 12,600 new cases of cancer in the age group from zero to 19 years in 2017[9].

Regarding the conditions of interaction presented by the patients, it was observed that the majority was classified in category 1 - communicating (44%), which made possible a great variation of strategies for occupational therapy. Yet, it is worth mentioning that, due to the absence of a semi-intensive care unit in this institution, patients with demands for this type of care are admitted to the POICU; changes in this profile are expected with the implementation of the semi-intensive care unit.

An evaluation form was designed to identify patient and/or family follow-up demands, considering the needs presented by the patient and/or caregiver, the clinical conditions and/or the conditions of communication and interaction of the patients.

Some key aspects for assessment in the context of occupational therapy[3] are:

- occupational history;
- family/social support network;
- impact of hospitalization (patient/caregiver);
- change in occupational performance;
- history of illness;
- clinical conditions;
- level of consciousness;
- perceptual-cognitive alterations;
- neuromuscular-skeletal changes;
- neurologic psychomotor development.

The evaluation encompasses the patients' physical and emotional aspects and should guide the line to establish the occupational therapy program. In the ICU, the conduct of Occupational Therapy should be centered on the clinical, functional, emotional and cognitive state of the patients. Prior consultation of medical records before the intervention is fundamental to learn the previous clinical history, such as surgeries and hospitalizations[10].

Based on the appropriation of the routine and understanding of the specific equipment inserted in the ICU context, the occupational therapist feels more confident, with possibilities to expand his practice, identifying strategies for interventions, despite the clinical instability and severity of the patients under medical treatment[11].

The main objectives of occupational therapy interventions in a PICU are[3]:

Patients

- re-signification of daily life;
- minimization the impact of hospitalization in the ICU;
- prevention of possible deformities, edema, pressure points and pain (patients sedated or bedridden);
- maintenance of occupational performance;
- maintenance of functional capacity;
- monitoring of neurologic psychomotor development (infants);
- assistance to patients and caregivers in the termination process.

Environment

- spatial temporal orientation;
- privacy;
- individuality;
- reduction of adverse stimuli (noise, illumination).

Caregivers

- Guidance, reception and *empowerment*.

The early and intensive intervention of Occupational Therapy is effective to prevent delirium in hospitalized adults, reduce their length of hospitalization and increase the

level of motor functional independence at the moment of discharge[12].

The ICU environment is known to be an adverse and unfriendly place due to the noise produced by equipment, the need for invasive procedures and practices, and a high level of stress[11].

However, it is worth mentioning the possibilities of intervention focused on this scope, from the team's awareness regarding noise reduction, and activities aimed at the spatial orientation of these patients after prolonged periods in this context.

In the case of a pediatric unit, the Statute of the Child of the Adolescent (SCA) advocates the presence of a reference companion of the child throughout the hospitalization period[13]. Thus, within a pediatric ICU, there are adult companions in all the day shifts, and a close look of the multiprofessional team is necessary for these companions.

Occupational Therapy intervention should also cover parental care, since the family of a child hospitalized in an Intensive Care Unit also experiences the suffering caused by the hospitalization and uncertainty regarding the clinical picture of the patient[14].

It is also deemed as necessary the inclusion of caregivers, whenever possible, in the less complex care procedures with the child, aiming to maintain the bond and the occupational roles, described by AOTA as one of the instrumental activities of daily living (IADL)[15].

The implementation of caregiver groups represents a strategy of intervention for these people. These groups would be a space that allows parents to share feelings and experiences brought about in the whole process of hospitalization in an ICU[14].

In the ICU environment, the problems experienced by the patients (severity of their health condition, need for ventilatory support, sedation, tracheostomy, pressure ulcers, altered level of consciousness) may interfere with the interventions of the multiprofessional team, such as Occupational Therapy, and lead to distress and impotence[11].

CONCLUSION

Although occupational therapists are considered members of healthcare teams by the Ministry of Health, the insertion of these professionals in this field is unusual and their specific scientific production is restricted.

Based on clinical experience, it can be stated that occupational therapists have competence to intervene in the situation of patients and their families in the space of Pediatric and Oncology Intensive Care Units, significantly contributing to the multiprofessional team and to the quality of life of the patients/caregivers assisted.

The work of occupational therapists contributes to the guarantee of integral attention to patients, providing them quality of life during the hospitalization, encompassing the functional and playful aspects, and favoring their occupational performance.

In some cases, the intervention is focused on the care for caregivers due to the patients' severe clinical conditions, and the care and empowerment of care through counseling during this period and post-discharge.

The present study was relevant for the identification of the profile of patients treated at a Pediatric Onco-Hematologic Intensive Care Unit, understanding of this context and of the insertion of the professional in the multiprofessional team, and for contributing to this still growing field of professional activity.

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CONTRIBUTIONS
Mariana de Paiva Franco was responsible for writing, organization of the data and final revision. **Aide Mitie Kudo** contributed in the design, writing and final review

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