

INTERNATIONAL RESEARCH PROJECT „DIURNAL AND CIRCADIAN RHYTHMS AND LIFE STYLE HABITS – BEHAVIORAL SPECIFICS”

Assoc. Prof. Milada Krejčí, PhD¹, Assoc. Prof. Tetsuo Harada, PhD², Kai Wada^{1,2}

¹ Dept of Health Education, Faculty of Education, University of South Bohemia, České Budějovice, **Czech Republic**

² Laboratory of Environmental Physiology, Faculty of Education, Kochi University, Kochi, **Japan**

The research cooperation started in 2007

Assoc. Prof. Tetsuo Harada, PhD - Assoc. Prof. Milada Krejčí, PhD



Introduction

Internet communication, mobile phone, mid-night TV, convenience store opened 24hrs are included in nowadays live. Playing games on the display is widely spread among children in the world and the opportunities to play in the nature outside decrease due to it.

Research cooperation base

- to solve the problems of life style and mental health of Czech and Japanese children and youth, especially evening type preferences and mental changes between circadian typology and life style habits of Japanese and Czech children and youth.
- to analyze the role of sport and physical activities according circadian typology;
- to realize an intervention program to promote the active life style including adequate movement regime and mental health support.

Methods

- Comparative methods and correlation links between evening type preference and mental changes and between circadian typology and life style habits of Japanese and Czech children and youth using of the **standardized questionnaire (Torsvall, Åkerstedt, 1980)**
- By elected samples will be used **laboratory methods of collecting saliva to analysis the melatonin and serotonin concentration** and system to measure core body temperature.

2007 – 2008

pilot research study in infants aged 3 - 6 years old

697 (360 girls, 337 boys) Japanese infants and 627 (305 girls, 322 boys) Czech infants

Main results:

- Czech children were more morning-typed than Japanese children, while Czech parents were more evening-typed than Japanese parents.
- M-E scores (morningness – eveningness) of Czech infants were much higher than those of their parents (Mann-Whitney U-test, $z=-12.33$, $P=5.97 \times 10^{-10}$), whereas those of Japanese infants were relatively similar to those of their parents (Mann-Whitney U-test, $z=-2.09$, $P=0.03$).
- Czech children were depressed more frequently than Japanese ones who were more frequently angry than the Czech children.
- Infants who were angry often were significantly more evening-typed in both countries (Mann Whitney U-test, Czech: χ^2 -value=13.02, $df=3$, $P=0.0045$; Japan: χ^2 -value=12.87, $df=3$, $P=0.0049$).

Results have shown that de-synchronization of the circadian clock system is accompanied by emotional instability and depressed mood.

Aim of research cooperation for 2010-2012

- to survey the problems of life style, circadian typology and mental health of Czech and Japanese children and youth till age of 18 (1200 Czech and 1200 Japanese participants, males 50% and females 50%);
- to analyze the role of sport and physical activities according circadian typology;
- to realize an intervention program - mental health support;

Project time-schedule 2010 - 2012

Planning for 2010

- The basic study and a questionnaire work - employment for the distribution of investigators schedule and collecting of the data and employment for the analysis of the data.
- Field of experimental study, laboratory work - to measure the amount of movements, collecting saliva to analysis the melatonin and serotonin concentration, system to measure core body temperature (rectal and oral temperature), employment for the analysis of the data.
- 2 weeks stay of Prof. Tetsuo Harada, PhD – comparative work, research project presentation at the University of South Bohemia.

Planning for 2011

- To continue in the basic study and a questionnaire work in different age and gender groups of children and youth, employment for collecting of data and the data analysis.
- Intervention program: realization of interventional program in school education process (health education strategies at schools) and family education, involvement of parents (intervention courses for parents), employment for the analysis of the data.
- Presentation of papers in Czech, Japan and abroad journals and in congresses.

Planning for 2012

- To finish intervention study - evaluation of intervention effects, employment for the analysis of the data.
- Seminar for teachers organized in University of South Bohemia in Faculty of Education in May 2012.
- Presentation of papers in journals in Czech Republic and abroad. Publication of an monograph concludes results, evaluation, education strategies and optimalization of the circadian rhythms by respecting of children and youth specifics.

Thank you for your attention!

