



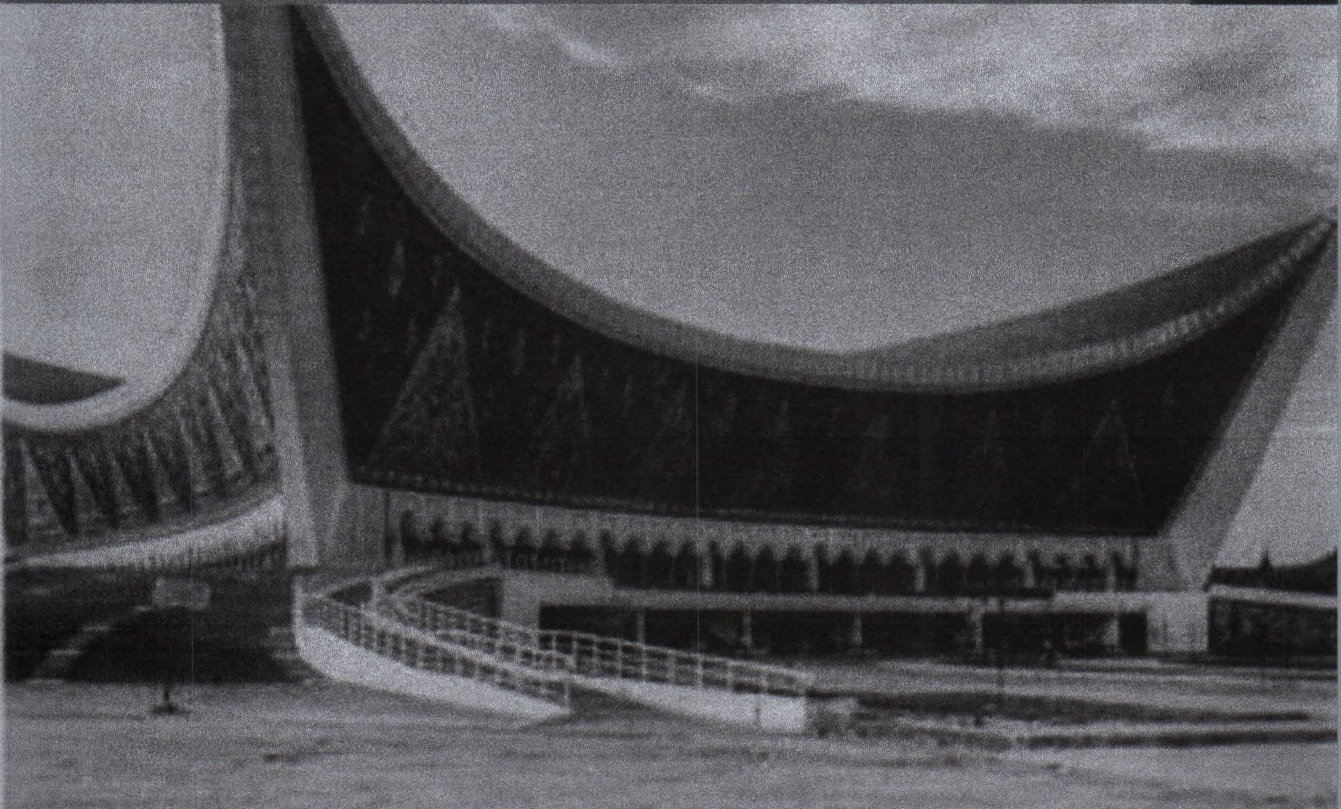
Faculty of Medicine in collaboration with Faculty of Nursing and Faculty of Dentistry

# Conference Program and Abstract Book

International Conference on Medical and Health Research  
(ICOMHeR 2018)

Padang, 13-14 November 2018

Medical and Health Care Improvement Through  
Innovative Research and Interdisciplinary Collaboration



## TABLE OF CONTENTS

Table of contents .....	iii
Opening speech Head of organizing committee.....	1
Opening speech Rector of Andalas University Padang .....	2
Opening speech Dean of Faculty of Medicine, Andalas University Padang	3
Opening speech Dean of Nursing Faculty, Andalas University Padang .....	4
Opening speech Dean of Dentistry Faculty, Andalas University Padang ...	5
Biodata of Speaker 1 (Maimuna Mendy, Ph.D) .....	6
Biodata of Speaker 2 (Bart Scheerder, Ph.D).....	7
Biodata of Speaker 3 (Dr. Amrizal Muhammad Nur, MD, M.Sc, Ph.D) .....	8
Biodata of Speaker 4 (Dr.Andrea Gilkison).....	10
Biodata of Speaker 5 (Prof. Kenneth Yongabi Anchang, Ph.D).....	11
Biodata of Speaker 6 (Dr. Duangthip Duangporn).....	13
Biodata of Speaker 7 (Dr. dr. Wirisma Arif Harahap, Sp.B (K) Onk.....	14
Biodata of Speaker 8 (Prof. Dr. Rizanda Machmud, MD, FISPH., FISCM)....	15
Rundown Schedule .....	17
Presentation Schedule .....	18
Abstract.....	25

Prof. DR. Dr Eryati Darwin,PA(K)  
JL. Veteran 13A Padang



## RELATIONSHIP BETWEEN STRESS AND SEROTONIN TRANSPORTER LEVEL WITH INTERNET ADDICTION IN ADOLESCENT

Eryati Darwin<sup>1</sup>, Yaslinda Yaunin<sup>2</sup>, Adnil Edwin Nurdin<sup>3</sup>

{eryatidarwin@fk.unand.ac.id<sup>1</sup>}

Department Histology, Faculty of Medicine Andalas University<sup>1</sup>, Department Psychiatry, Faculty of Medicine Andalas University, Padang-Indonesia<sup>2</sup>

**Abstract.** Stress is a normal part of life and affects people differently. Some individuals can manage it in a healthy way while others cope their stress with an unhealthy ways. In fact, some people do harmful activities or turn to substances like alcohol and drugs to escape from stress, that can lead to addiction. Evidence shows that serotonin transmission in the central nervous system, with differences in transporter and hormone or neurotransmitter influences is critical in determining coping behavior. To determine affect of stress to internet addiction, we studied the relationship between stress and serotonin transporter level with internet addiction in adolescent. We recruited 681 healthy adolescent subjects (395 females, 286 males) from several senior high schools with inclusion and exclusion criteria. The stress levels were assessed using the Depression Anxiety and Stress Scale (DASS) and internet addiction were assessed using Kimberly Young Internet Addiction Test, respectively. The level of serotonin transporter were measured by Enzyme Linked Immunosorbent Assay (ELISA). From study by using DASS, we found that 292 of 681 adolescent subjects were under stress, consisting of 58.6% female and 41.4% male. Internet addiction were found in 79 of 292 adolescent with stress (55,70% female and 44,30% male). The level of serotonin transporter of the stress adolescent with internet addiction ( $18,37 \pm 19,61$ ) were significantly different with the stress adolescent without internet addiction ( $12,96 \pm 12,08$ ) ( $p < 0,05$ ). From this study we found that serotonin transporters contribute to the occurrence of internet addiction behavior in stressed adolescents

**Keywords:** internet addiction, serotonin transporter, stress

**Relationship Between Stress And Serotonin Transporter Level With Internet Addiction In Adolescent**

Eryati Darwin<sup>1</sup>, Yasinda Yaunin<sup>2</sup> and Adnil Edwin Nurdin<sup>2</sup>

<sup>1</sup> Department Histology, Faculty of Medicine Andalas University <sup>2</sup> Department Psychiatry, Faculty of Medicine Andalas University, Padang-Indonesia

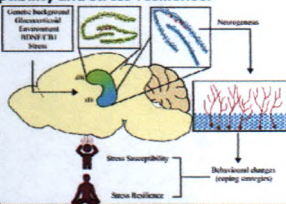
**Introduction**

- Stress is a normal part of life and affects people differently.
- Some individuals can manage it in a healthy way while others cope their stress with an unhealthy ways.
- In fact, some people do harmful activities or turn to substances like alcohol and drugs to escape from stress, that can lead to addiction



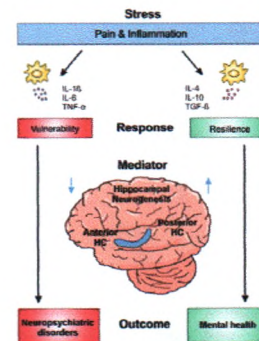
**Brain response to stress**

- The stress response involves activation of a brain region amygdala → sends a signal alerting the organism to the threat.
- Activate HPA axis → release of a cascade of hormones, including cortisol "stress hormone."
- Many factors that can influence hippocampal neurogenesis, particularly on the ventral hippocampus (vHi).
- May modulate behavioural and neuroendocrine outputs → influence stress-susceptibility and stress-resilience.



**Resilience and vulnerability of the human hippocampus**

- Hippocampal neurogenesis can be modulated positively and negatively



- On the contrary, individuals can employ mechanisms of resilience and maintain homeostasis even under negative conditions.
- Alternatively, neurogenesis can be modulated in a positive manner and used as a therapeutic means
- Resilience and vulnerability of the human hippocampus. Hippocampal neurogenesis can be modulated positively and negatively, as indicated with blue arrows.

- Various factors:
  - stress
  - chronic pain
 → can negatively regulate neurogenesis → cause dysregulations of emotional and cognitive functions associated with neuropsychiatric disorders.
- On the contrary, individuals can employ mechanisms of resilience and maintain homeostasis even under negative conditions.
- Alternatively, neurogenesis can be modulated in a positive manner and used as a therapeutic means.

### Stress and Serotonin

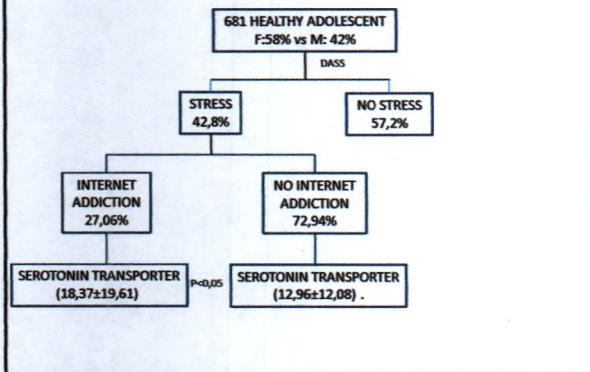
- Stress in the lifespan affects brain systems that control coping outcomes through brain serotonin (5-HT) transmission
- serotonin as a modulator of mood, and a lack of serotonin has been suggested as a factor in the development of depression.
- The serotonin transporter (SERT or 5-HTT) transports serotonin from the synaptic cleft to the presynaptic neuron



### Methods

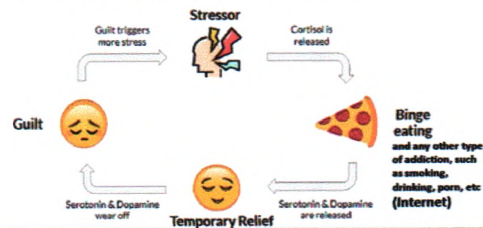
- Healthy adolescent subjects from several senior high schools with inclusion and exclusion criteria.
- The stress levels were assessed using the Depression Anxiety and Stress Scale (DASS)
- Internet addiction were assessed using Kimberly Young Internet Addiction Test, respectively.
- The level of serotonin transporter were measured by Enzyme Linked Immunosorbent Assay (ELISA).

### Results



### Discussion

- Life traumas, damaging mood centers that regulate pleasure and reward, increasing vulnerability to addiction
- When the stressor is beyond the person's ability to cope or adapt, the release of cortisol becomes chronic, and the person goes into distress. This is characterized by feelings of anxiety, depression, and panic.
- A medial prefrontal cortex-amygdala system mediate adaptive and maladaptive stress responses, in which serotonin regulate action engage a prefrontal cortical-amygdala pathway through serotonin receptor to coping behavior.



### Conclusion

- From this study we found that serotonin transporters contribute to the occurrence of internet addiction behavior in stressed adolescents

THANK YOU



ICQMHeR

ICOMHeR



Translational  
Health  
Research.



Interprofessional  
Education and  
Collaboration



Current Issues in  
Health Research  
and Development

# CERTIFICATE

International Conference On Medical  
and Health Research

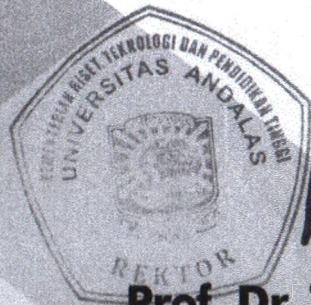
Eryati Darwin

as

**ORAL PRESENTER**

November 13-14<sup>th</sup> 2018

Mercure Hotel Padang, West Sumatra



**Prof. Dr. Tafdil Husni, SE, MBA**

Rector of Andalas University



**Dr. rer. nat. Ikhwan Resmala Sudji, S.Si**

Head Committee