

ORAL PRESENTER

Humanising Medical  
Education: Lessons  
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RESEARCH  
SYMPOSIUM



# Translation and Validation of Malay Version of Exercise Dependence Scale-21 (EDS21- M)



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# INTRODUCTION

## 1. Exercise Addiction Prevalence

- 3-5% normal active population.
- 7-42% - athletes.
- (no local data)

2. Effect of Exercise Addiction - physically, mentally and socially.

3. Early detection of risk of exercise addiction can prevent the negative impact to the patient with earlier intervention.

5. EDS-21 screening instrument for Exercise Addiction.

Most comprehensive tool available.

Translated and validated to 11 different languages.

4. No available Malay language instrument available for exercise addiction screening.





## LOCAL DATA



National health and morbidity survey (NHMS) 2019 showed that there is a steep increase physical active among Malaysian population

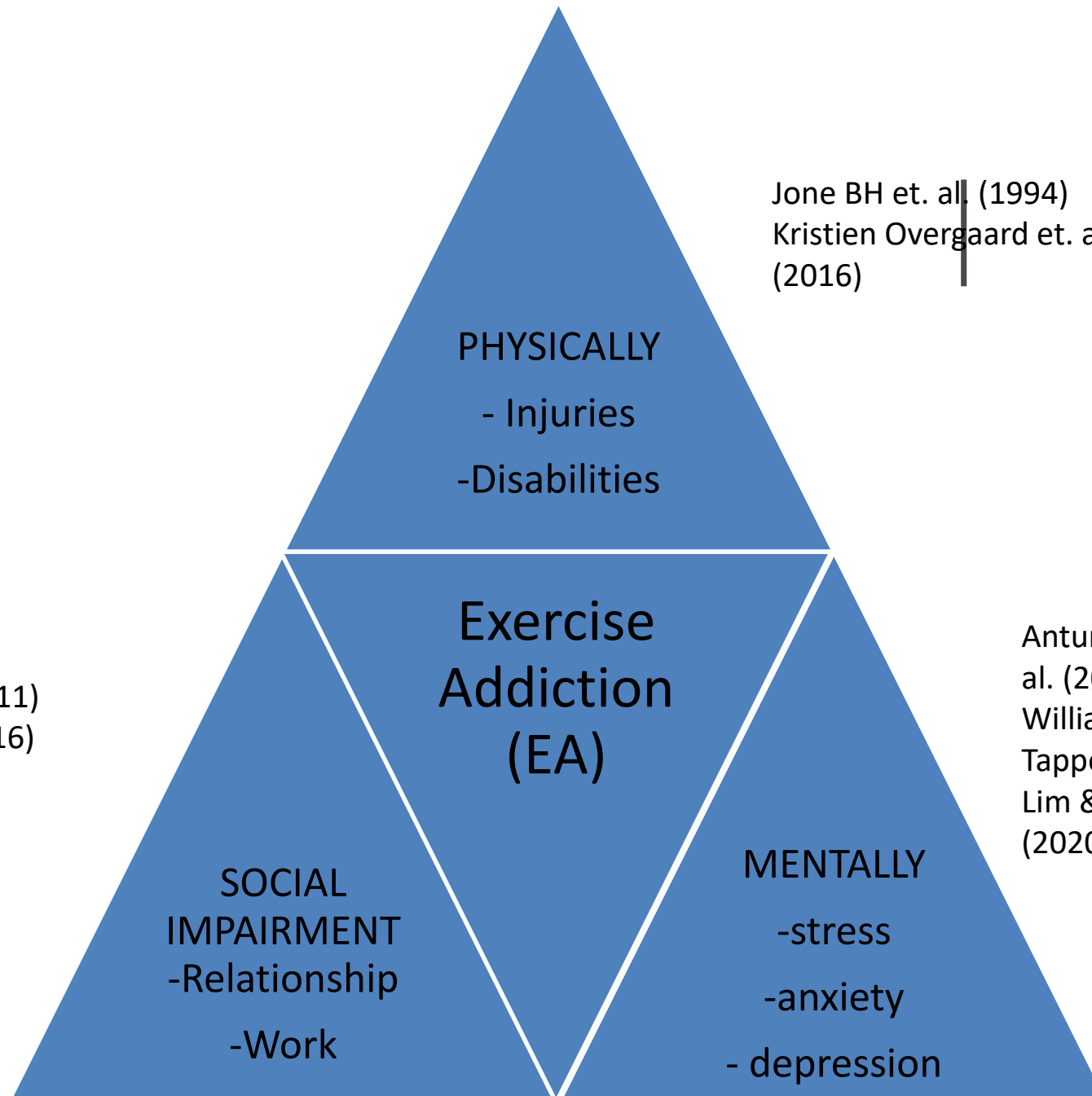
- 64.3% in 2011
- 64.5% in 2015
- 74.9% in 2019

There is no data regarding exercise addiction and its effect among Malaysian.



# Exercise Addiction (EA) Complication

Sussman et al. (2011)  
Szabo A et. al. (2016)  
ASAM



Jone BH et. al (1994)  
Kristien Overgaard et. al.  
(2016)



Antunes H. et.  
al. (2016)  
Williams and  
Tappen (2007)  
Lim & Pranata  
(2020)

# EDS-21 Domain

Heather A. Hausenblas et.  
al. (2002)

Tolerance

Withdrawal

Intention Effect

Lack of Control

Time

Reductions in Other Activities

Continuance





## Exercise Dependence Scale-21

Hausenblas & Symons Downs (2002)

**Instructions.** Using the scale provided below, please complete the following questions as honestly as possible. The questions refer to current exercise beliefs and behaviors that have occurred in the past 3 months. Please place your answer in the blank space provided after each statement.

1 Never	2	3	4	5	6 Always
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1. I exercise to avoid feeling irritable. \_\_\_\_\_
2. I exercise despite recurring physical problems. \_\_\_\_\_
3. I continually increase my exercise intensity to achieve the desired effects/benefits. \_\_\_\_\_
4. I am unable to reduce how long I exercise. \_\_\_\_\_
5. I would rather exercise than spend time with family/friends. \_\_\_\_\_
6. I spend a lot of time exercising. \_\_\_\_\_
7. I exercise longer than I intend. \_\_\_\_\_
8. I exercise to avoid feeling anxious. \_\_\_\_\_
9. I exercise when injured. \_\_\_\_\_
10. I continually increase my exercise frequency to achieve the desired effects/benefits. \_\_\_\_\_
11. I am unable to reduce how often I exercise. \_\_\_\_\_
12. I think about exercise when I should be concentrating on school/work. \_\_\_\_\_
13. I spend most of my free time exercising. \_\_\_\_\_
14. I exercise longer than I expect. \_\_\_\_\_
15. I exercise to avoid feeling tense. \_\_\_\_\_
16. I exercise despite persistent physical problems. \_\_\_\_\_
17. I continually increase my exercise duration to achieve the desired effects/benefits. \_\_\_\_\_
18. I am unable to reduce how intense I exercise. \_\_\_\_\_
19. I choose to exercise so that I can get out of spending time with family/friends. \_\_\_\_\_
20. A great deal of my time is spent exercising. \_\_\_\_\_
21. I exercise longer than I plan. \_\_\_\_\_



# RESEARCH OBJECTIVE

## General Objective

To translate and validate Exercise dependence Scale 21 (EDS21)



## Specific Objectives

1. To translate the EDS-21 into Malay Language.
2. To determine the construct validity of the Malay version of the EDS-21 in the Malaysian population.
3. To determine the reliability of the Malay version of the EDS-21 in the Malaysian population.

## STUDY DESIGN

Cross sectional study.

## DATA COLLECTION PERIOD AND PLACE

March 2021 March 2022 in Kuantan.  
Selection for location of study sampling is by using purposive selection of places.

## STUDY POPULATION

Malaysian that active by WHO definition in selected places

## INCLUSION CRITERIA

Able to understand the Malay language.  
Age at or more than 18 years old.  
Malaysian citizen.  
Active with minimum high intensity exercise >75 minute/week or high/medium intensity exercise >150minute/ week

## EXCLUSION CRITERIA

Illiteracy.

## SAMPLING METHOD

Universal sampling of subject that include all attendee at the selected sampling site and time.

## STUDY TOOL

A. Sociodemographic profile  
B. Exercise dependence scale 21 Malay version (EDS-21M)

## SAMPLE SIZE

≈ 260



# RESEARCH FLOW



Phase 1 - Translation and Face validation.

Phase 2 - Construct validity and reliability test.





# RESULT



No	Original (EDS21)	EDS-21M
1	I exercise to avoid feeling irritable	Saya bersenam untuk mengelakkan rasa mudah marah
2	I exercise despite recurring physical problems	Saya bersenam walaupun menghadapi kecederaan fizikal yang berulang.
3	I continually increase my exercise intensity to achieve the desired effects/benefits.	Saya terus meningkatkan intensiti senaman untuk mencapai kesan / faedah yang diinginkan.
4	I am unable to reduce how long I exercise	Saya tidak dapat mengurangkan jumlah masa saya bersenam
5	I would rather exercise than spend time with family/friends	Saya lebih suka bersenam daripada menghabiskan masa dengan keluarga / rakan
6	I spend a lot of time exercising	Saya menghabiskan banyak masa untuk bersenam.
7	I exercise longer than I intend	Saya bersenam lebih lama daripada yang saya inginkan

10.	I continually increase my exercise frequency to achieve the desired effects/benefit	Saya terus meningkatkan kekerapan senaman untuk mencapai kesan / faedah yang Diinginkan.
11	I am unable to reduce how often I exercise	Saya tidak dapat mengurangkan kekerapan saya bersenam
12	I think about exercise when I should be concentrating on school/work	Saya berfikir tentang senaman ketika saya perlu menumpukan perhatian di sekolah /tempat kerja.
13	I spend most of my free time exercising.	Saya menghabiskan sebahagian besar masa lapang saya untuk bersenam.
14	I exercise longer than I expect	Saya bersenam lebih lama daripada yang saya jangkakan.
15	I exercise to avoid feeling tense	Saya bersenam untuk mengelakkan rasa tegang.

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16	I exercise despite persistent physical problems	Saya bersenam walaupun menghadapi masalah fizikal yang berterusan.
17	I continually increase my exercise duration to achieve the desired effects/benefits	Saya terus meningkatkan jangka masa latihan untuk mencapai kesan / faedah yang diinginkan
18	I am unable to reduce how intense I exercise	Saya tidak dapat mengurangkan intensiti senaman saya.
19	I choose to exercise so that I can get out of spending time with family/friends	Saya memilih untuk bersenam supaya saya dapat mengelak menghabiskan masa dengan keluarga /rakan
20	A great deal of my time is spent exercising	Sebilangan besar masa saya dihabiskan untuk bersenam
21	I exercise longer than I plan	Saya bersenam lebih lama daripada yang saya rancang

## Summary of confirmatory factor analysis



<b>MODEL</b>	<b>RMSEA</b>	<b>CFI</b>	<b>CHISQ/DF</b>
<b>Default model</b>	0.071	0.945	2.291
<b>Level of acceptance</b>	<0.08	>0.9	<3.0



## Cronbach's Alpha (95% Confidence Interval) for every domain

Addiction Domains	Items	Cronbach's Alpha (95% Confidence Interval)	Mean	Std. Deviation	Variance	Skewness	Kurtosis
Withdrawal Effect	Eds1	0.793 (0.745-0.833)	2.94	1.579	2.492	0.352	-0.871
	Eds8		2.76	1.537	2.364	0.499	-0.815
	Eds15		3.27	1.581	2.499	0.070	-1.146
Continuance	Eds2	0.837 (0.799-0.869)	2.45	1.596	2.547	0.893	-0.380
	Eds9		1.69	1.137	1.293	1.764	2.429
	Eds16		2.18	1.419	2.015	1.068	0.084
Tolerance	Eds3	0.868 (0.837-0.894)	3.77	1.435	2.058	-0.215	-0.662
	Eds10		3.53	1.541	2.376	-0.017	-0.982
	Eds17		3.13	1.527	2.331	0.208	-0.897
Lack of Control	Eds4	0.818 (0.776-0.854)	2.69	1.378	1.900	0.544	-0.369
	Eds11		2.49	1.307	1.707	0.750	-0.111
	Eds18		2.40	1.347	1.816	0.828	-0.023
Reduction in other activities	Eds5	0.771 (0.717-0.816)	2.35	1.388	1.928	0.974	0.132
	Eds12		2.33	1.443	2.081	0.916	-0.101
	Eds19		1.99	1.375	1.890	1.380	0.992
Time	Eds6	0.917 (0.897-0.933)	2.83	1.395	1.946	0.566	-0.384
	Eds13		2.69	1.446	2.090	0.632	-0.496
	Eds20		2.39	1.370	1.877	0.894	0.013
Intention	Eds7	0.912 (0.892-0.929)	2.82	1.474	2.172	0.486	-0.696
	Eds14		2.82	1.473	2.170	0.435	-0.779
	Eds21		2.67	1.454	2.113	0.573	-0.617



# Cronbach's Alpha for total Item



	<b>N of Items (construct)</b>	<b>Cronbach's Alpha</b>
<b>1.</b>	21 items	0.954



## Conclusion:

The Malay version of EDS21 is a valid, reliable, and locally accepted questionnaire that can be used in the Malaysian population.

However, a locally developed questionnaire may be made in the future to produce a better statistical accepted questionnaire.

