T.C.

YEDİTEPE UNIVERSITY

INSTITUTE OF HEALTH SCIENCES

DEPARTMENT OF PHYSIOTHERAPY AND REHABILITATION

EFFECTS OF MOBILE GAMING ON PHYSICAL ACTIVITY AND EMOTIONAL HEALTH AGGRESSION IN UNIVERSITY STUDENTS OF RAHIM YAR KHAN, PAKISTAN

MASTER THESIS

MUHAMMAD IRFAN MAHAIS, PT

ISTANBUL-2022

T.C.

YEDİTEPE UNIVERSITY

INSTITUTE OF HEALTH SCIENCES

DEPARTMENT OF PHYSIOTHERAPY AND REHABILITATION

EFFECTS OF MOBILE GAMING ON PHYSICAL ACTIVITY AND EMOTIONAL HEALTH AGGRESSION IN UNIVERSITY STUDENTS OF RAHIM YAR KHAN, PAKISTAN

MASTER THESIS

MUHAMMAD IRFAN MAHAIS, PT

SUPERVISOR PROF. DR. RASMI MUAMMER

ISTANBUL-2022

THESIS APPROVAL FORM

Institute : Yeditepe University Institute of Health Sciences

Programme : MSc. Physiotherapy and Rehabilitation

Title of the Thesis : Effects of mobile gaming on Physical Activity and Emotional Health Aggression in University students of Rahim Yar Khan, Pakistan

Owner of the Thesis : Mahais, Muhammad Irfan

Examination Date : 13-12-2022

This study have approved as a Master Thesis in regard to content and quality by the Jury.

	Title, Name-Surname (Institution)
Chair of the Jury:	Prof.Dr.Rasmi Muammer Yeditepe Univesity Physiotherapy and Rehabilitation
Supervisor:	Prof.Dr.Rasmi Muammer Yeditepe Univesity Physiotherapy and Rehabilitation
Member/Examiner:	Dr Öğr Üyesi Sule Badilli Hantal Yeditepe University Physiotherapy and Rehabilitation
Member/Examiner:	Dr Öğr Üyesi Tansu Birinci Istanbul Medinyet Univesity Physiotherapy and Rehabilitation

APPROVAL

This thesis has been deemed by the jury in accordance with the relevant articles of Yeditepe University Graduate Education and Examinations Regulation and has been approved by Administrative Board of Institute with decision dated ..... and numbered .....

Prof. Dr. Bayram YILMAZ

Director of Institute of Health Sciences

DECLARATION

I hereby declare that this thesis is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which has been accepted for the award of any other degree except where due acknowledgment has been made in the text.

Muhammad Irfan Mahais

DEDICATION

I would like to dedicate my thesis to my beloved Parents and Brothers and specially to my lovely Sister Sadia who is the gift from ALLAH as she is the Angel of ALLAH PAK.

ACKNOWLEDGEMENTS

I would like to express my deepest appreciation to my Advisor Professor Rasmi MUAMMER who continually provides me all support, guidance and encouragement.for the continuous support of my project.

I am extremely grateful to him for providing these opportunities. Foremost, I would like to express my sincere gratitude to my respected Head of Physiotherapy and Rehabilitation Department Prof. Dr. Feryal Subasi for her valuable suggestions.

Beside my advisor, I thanks to my parents and siblings for their motivation in the previous pandemic period.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVATIONS

ADHD Attention Deficit/Hyperactivity Disorder

CD Condut Dısorder

ODD Oppostıonal Defıant Dısorder

TV Televısıon

CVA Cerebovascular Accıdent

IGD Internet Gamıng Dısorder

IPAQ Internatıonal Physıcal Actıvıty Questıonaıre

B/W Between

KFUEIT Khawaja Fareed Unıversıty Of Engıneerıng And Informatıon Technology

Yr's Years

NBC Natıonal Bıoethıcs Commıttee

SAS-SV Smartphone Scale-Short Versıon

SPSS Statıstıcal Package For Socıal Scıences

ABSTRACT (English)

Mahais,M.I. (2022).Effects of mobile gaming on Physical Activity and Emotinoal Health Aggression in University Students of Rahim Yar Khan, Pakistan. Yeditepe University, Institute of Health Sciences, Department of Physiotherapy and Rehabilitation, MSc. thesis, Istanbul

The aim of the study was to determine the effects of playing games on physical and emotional health by excessive usage of mobile. The study includes 385 participants (212F,173M;) from Khawaja Fareed University of Engineering and Information Technology, Rahim Yar Khan, Pakistan. In this study IPAQ, Aggression and smartphone addiction short version questionnaire were used. According to the results 26.8% found that their work missed due to excess usage of mobile phone, 19.2% strongly agreed that they had very tough to concentrate in class, 24.2% felt strain in wrist and neck region while 15.8% strongly agreed that they could not do any work without having smartphone. On the other hand, 22.6% strongly agreed that their mood change without smartphone, 17.1% strongly agreed that they still thought about mobile while holding in hands, 24.2% strongly agreed that they scroll their mobile again and again not to overlook gossips while on the other hand 218(56.2%) were too energetic. The study gives knowledge to people to decrease in mobile gaming time and aggression thus increase their physical activity.

Keywords: Physical Activity, Mobile Gaming, Emotinoal Health Aggression

ÖZET

Mahais, M.I. (2022) Pakistan, Rahim Yar Khan Üniversitesi Öğrencilerinde mobil oyun oynamanın, fiziksel aktivite ve duygusal sağlık üzerindeki saldırganlık etkisi.Yeditepe Üniversitesi Sağlık Bilimleri Enstitüsü Fizyoterapi ve Rehabilitasyon Anabilim Dalı, MSc. tez, İstanbul.

Bu çalışmanın amacı telefonda oyun oynayanların, aşırı derecelerde mobil oyun oynamalarının fiziksel ve duygusal sağlıkları üzerindeki etkilerini araştırmaktır. Çalışma, Pakistan, Rahim Yar Khan, Khawaja Fareed Üniversitesi'nin Mühendislik ve Bilişim Teknolojileri bölümünden 385 katılımcı (212K,173E) ile gerçekleştirişmiştir. Bu çalışmada IPAQ, Saldırganlık ve telefon bağımlılığı anketi kısa versiyonu soruları kullanılmıştır. Elde edilen sonuçlara göre, 26.8% 'lik kesim aşırı telefon kullanımından işlerine geç kaldıklarını, 19.2% 'lik kısım derslerine odaklanmada zorlandıklarını, 24.2% 'lik kısım bilek ve boyunda gerginlik hissettiklerini, 15.8% 'lik kısım ise telefonları olmadan herhangi bir iş yapamadıklarını belirttiler. Diğer bir taraftan, 22.6% 'lik bir kesim akıllı telefonları olmadığında ruh hallerinin değiştiğini, 17.1% ise telefonları elindeyken bile hala telefonlarını düşündüklerini, 24.2% kesim ise herhangi bir şeyi kaçırmamak için telefonda sürekli olarak gezindiklerini söyledi, Bunun yanında 218 (56.2% 'lik kesim) ise çok enerjikti.
Sonuç olarak telefon oyunlarına ayrılan sürenin ve agresyonun azaltılması fiziksel aktivitelere ayrılabilecek zamanı arttıracakdır.

Anahtar kelimeler

Fiziksel Aktivite, Mobil Oyun, Duygusal Sağlık Saldırganlığı

1. INTRODUCTION

Mobile gaming is the most common leisure activity of today era. This enhance the sedentary life style of the young generation of university going student. They spend much more time on mobile gaming, which decrease their physical activity and alters the emotional health of the young generation.Now a day's mobile gaming addiction is worse than any other addiction. In different studies, the association between the mobile gaming and aggression is positively associated. It changes the psychological behavior of the young generation, which leads them to aggressive behavior.[1]

The major part of adult population using multimedia like mobile phones, laptops,these all the gadgets had bad effects on their physical and mental well-being. It also decreases the physical activity due to more time spend on using mobile phone for gaming.[2]

Anger issues were most causes for referring to cure within the growing population. Many childhood problems are related to these technologies. (ADHD; prevalence of 5%),(CD; prevalence of 4%), and (ODD; prevalence of 3.3%), these all features are related to the anger and anger or aggression like feelings in young adults.

In today's world, the substantial usage of online gaming is becoming a trend for which it became necessary now to study its consequences on humans.[3]

Daily physical fitness program increase chances in the prevention of heavy weight gain and mortal diseases; however, in the American population the less than half population is active. Play stations, laptops, TV and cell phones, increase the sitting posture life style of the people and their physical activity reduced due to all time spend on mobile devices. When a person use mobile waste much more time on it and his physical outdoor activity is decreased which cause decline in its quality of life.[4]

Gamification may enhance the personal physical activity and work ability it may increase the intellectual health of the mobile gamer. Gamification may reduce the physical activity of the gamer. Mobile gaming may change the emotional changes in mobile gamer. The aggression is produced in people who are addicted to mobile gaming.[5]

Mobile game players had decreased moderate to vigorous PA. The player having more sedentary life style having more chance to increase the chances of disease in future. [6]

Being active is important for health. Mankind who were operative minister to increase their life span, have low risk of many diseases including cardiac problems, CVA, type 2 diabetes and anxiety. In addition different stages of cancer, and were apt to carry in good shape.

In ex researches, the relationship b/w online gaming and its outcome on PA and aggression was studied and it shows that the online gaming had major reaction on the PA and it can changed the mental state of well-being. IGD was uncontrolled and repetative make use of gadgets such as mobile phones, tablets, and computers,develop in notable settlement of day-to-day task and discomfort.[7]

In Pakistan there were recently many cases reported against the online gaming like PUBG but no research study was established for the effects of online gaming in Pakistan changing the behavior of young population,so this was the main gap of my study. The handy and easy to handle device design increase their harming use, and strong evidence had suggested that mobile technology disturb important social relationship and youth participation in games and activities. (e.g.,creative play, gathering in nearby homes, and lunch or dinner time activities.[8]

2. LITERATURE REVIEW

Sema can, et al conducted a study in 2019.on effects of gaming on physical activity. Study was descriptive analytical design. There were 387 peoples recruited in that study was the students of hitit university. The goal of that study was to assess relation b/w mobile gaming and physical activity. The IPAQ was used to collect data of the study, which was pretested for validity. This study concludes that the increase in mobile gaming time decrease the physical activity.[9]

Jeffery g ONG et al, conducted a clinical experimental study in 2019.72 students were recruited in this study. The role of that study was to assess the correlation between mobile gaming and the aggression. The reactive-proactive aggression questionnaire was used to collect data. This study concluded that the mobile gaming demise the proactive aggression.[10]

Tim althoff, et al, (2016) pilot a cross-sectional review, the objective of study was to quantify the impression of gaming on PA program. The data of pokeman-go peformer was prevail by web browser queries and the physical activity was manoeuvre by means of accelerometer. This study concluded that the game increased the minor level physical activity.[9]

Juyeon oh et al, conducted a cross-sectional survey in Korea in 2019. The main purpose of that research s was to determine the mobile phone dependency effects on mental health like aggressive behavior. Data was collected from 1937 through self-administered questionnaire. This study concluded that students having allergic problem with aggression having more dependency on mobile phone.[12]

S.M GRUSSER, et al conducted a study in 2017 was held in university students. Descriptive study was performed and there were 7069 students playing games recruited in that study. The study aimed to check the relationship in between mobile gaming addiction and aggression in adults. The buss parry aggression questionnaire used to obtain data. This study concludes that the mobile gamers have more aggression than non-gamers do.[11]

Mehwash mahroof, et al lead overview in 2016 to check the relationship between mobile addiction games and physical traits like aggression. The population of study was the university students. The sample size was 123 students. The aggression questionnaire was used to collect data. This study concludes that there was the relation between personality traits and mobile gaming addiction is associated.[12]

Denis Pasco, et al conducted a study in 2016 on outcomes of mobile gaming addiction on physical activity. The study design was experimental. The population of that study was university students. The sample size was 163. The purpose of that study was to associate the mobile game addiction and physical activity. The IPAQ was use to collect data. This study concludes that bike active video game may increase physical activity.[6]

Petr kweton, et al conducted study on 128 students to check the aggression and violence among mobile video gamers. The study aimed to check the connection b/w aggression and mobile gaming. Survey come to an end that the mobile may enhance the intellectual behavior of the player.[13]

3. MATERIALS AND METHODS

3.1. Subjects

The study was Descriptive cross-sectional study. The population of study was Students of KFUEIT, Rahim Yar Khan, Pakistan. A total of 385 students (155M,205F;17-30years) who met inclusion criteria were included in the study.

For determination of sample size with confidence interval approach is calculated by Cochran's formula given below [14]

$$n = \frac{Z^2 pq}{E^2}$$

where Z was confidence level which was 95%and mentioned as 1.95

P was level of precision which if known by authentic website use it otherwise standard value is 0.5

Q is 1-p

E was margin of error which was standard use 5% or 0.05

By putting values in formula Sample size was 385

Another method was by using epi tool calculator with values

With true proportion value is P =0.5

Desired precision was e= 0.05 also known as margin of error z Confidence interval z=0.95

Convenient sampling technique was used

3.2.1. Inclusion criteria

- University students using mobile and playing online games on mobile more than 2-4 hours/day.
- Having inactive life style
- Willingly and volunteer to respond in research
- Age between 17-30 years' old
- Having use of mobile for more than 1 year

3.2.2. Exclusion criteria

- Emotionally intelligent students were excluded from the study.
- Students having less use of mobile on online gaming not more than half an hour.
- Any health-related problems history or diagnosed pathology
- Any history of traumatic or surgery related to upper and lower limbs
- Received any medical attention or treatment in the last six months because of a health problem
- Any diagnosed neuro problems
- Incomplete questionnaires

3.3. Study Process

After the approval of authorities and ethical reviewer board of the concerned university study was conducted. An informed consent from KHWAJA FAREED UNIVERSITY OF ENGINEERING AND INFORMATION TECHNOLOGY was signed to confirm the proceeding of study in Rahim Yar Khan, Pakistan. Data collection was begun from the consent to the data provider. In this study, three different questionnaire forms were implemented to collect data from the student population. The IPAQ, aggression questionnaire and the smartphone addiction scale[15] were used to collect data for above variables. The data collection procedure was only proceeding once the informed consent form was filled. The particulars of the research explained to the participants before the data collection and any query regarding questionnaire was answered on the spot.

3.4. Study Protocol

First, the International Physical Activity Questionnaire was used, and then the Aggression Questionnaire and (SAS-SV) were applied to all participants respectively.

3.5. Data Analysis

Statistical Package Analyze for Social Sciences (SPSS) version 23 was used for analysis and calculation of data. Mean and standard deviation was calculated for quantitative variables and frequency or percentages for categorical variables.

4. RESULTS

In this study the mean age of the respondents was 20.61±1.45 years with minimum and maximum ages of 17-30 years respectively.

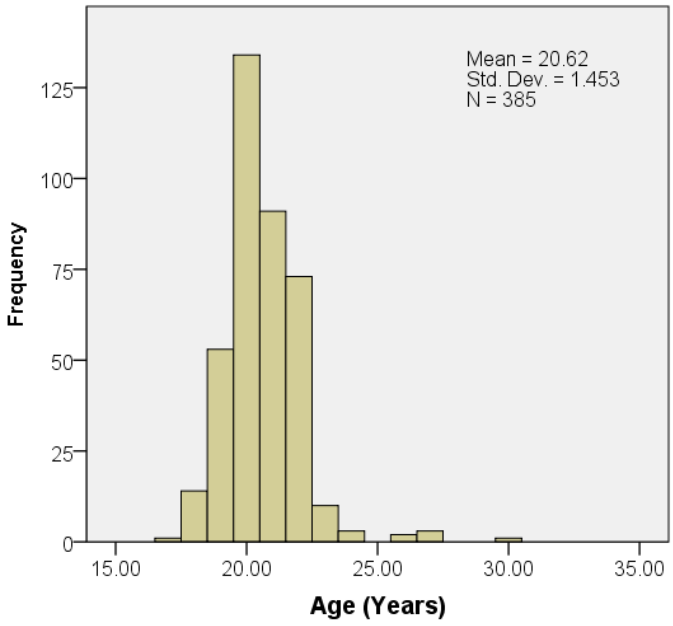


Fig 1; Distribution of age (years)

In this study 173(44.9%) patients were male and 212(55.1%) patients were females.

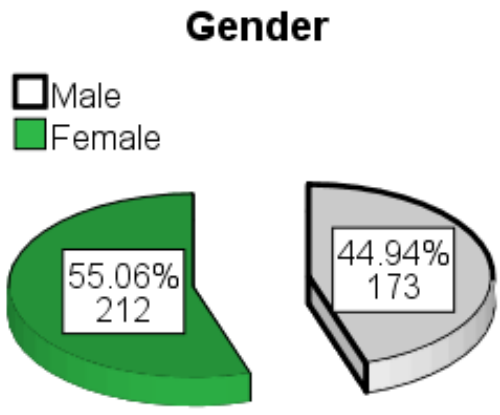


Fig 2; Distribution of gender

According to this study, 103(26.8%) respondents strongly agreed that they missed planed work due to smartphone use, 74(19.2%) respondents strongly agreed the they had a hard time concentrating in class while doing assignment, 93(24.2%) respondents strongly agreed that they felt pain in the wrists or at the back of the neck while using and 61(15.8%) respondents strongly agreed that they will not be able to stand not having a smartphone.

Table 1 Frequency distribution of 1-4 question of mobile gaming and physical activity tool

		Strongly agree	Agree	Neither	Disagree	Strongly Disagree
Missing planed work due to smartphone use	n	103	196	28	20	38
	%	26.8	50.9	7.3	5.2	9.9
Having a hard time concentrating in class while doing assignment	n	74	181	60	49	21
	%	19.2	47.0	15.6	12.7	5.5
Feeling pain in the wrists or at the back of the neck while using	n	93	147	65	53	27
	%	24.2	38.2	16.9	13.8	7.0
Will not be able to stand not having a smartphone	n	61	155	60	88	21
	%	15.8	40.3	15.6	22.9	5.5

In this study 87(22.6%) respondents strongly agreed that they felt impatient and fretful when they are not holding their smartphone, 66(17.1%) respondents strongly agreed that they had smartphone in their mind eve when they are holding their smartphones. 93(24.2%) respondents strongly agreed with the statement that they constantly checking their smartphone so as not to miss conversation.

Table 2 Frequency distribution of 5-8 question of mobile gaming and physical activity tool

		Strongly agree	Agree	Neither	Disagree	Strongly Disagree
Feeling impatient and fretful when I am not holding my smartphone	n	87	129	51	76	42
	%	22.6	33.5	13.2	19.7	10.9
Having my smartphone in my mind even when I holding my smartphone	n	66	122	73	81	43
	%	17.1	31.7	19.0	21.0	11.2

I will never give up using my smartphone even when my daily life	n	64	121	67	89	44
	%	16.6	31.4	17.4	23.1	11.4
Constantly checking my smartphone so as not to miss conversation	n	93	132	58	82	20
	%	24.2	34.3	15.1	21.3	5.2

In this study 69(17.9%) respondents strongly agreed that using their smartphone longer that they had intended, 71(18.4%) respondents strongly agreed that the people around them tells that they use their smartphone too much, 26(6.8%) respondents strongly agreed that given enough provocation they may hit another person and 33(8.6%) respondents strongly agreed with the statement that they had become so mad that they have broken things.

Table 3 Frequency distribution of 9-12 question of mobile gaming and physical activity tool

		Strongly agree	Agree	Neither	Disagree	Strongly Disagree
Using my smartphone longer than I had intended	n	69	178	57	48	33
	%	17.9	46.2	14.8	12.5	8.6
The people around me tell me that I use my smartphone too much	n	71	110	92	58	54
	%	18.4	28.6	23.9	15.1	14.0
Given enough provocation I may hit another person	n	26	96	144	69	50
	%	6.8	24.9	37.4	17.9	13.0
I have become so mad that I have broken things	n	33	87	92	83	90
	%	8.6	22.6	23.9	21.6	23.4

According to this study 56(14.5%) respondents reported that they often find themself disagreeing with people, 29(7.5%) respondents strongly agreed that their friends says that they are somewhat argumentative, 45(11.7%) respondents strongly agreed with the statement that when they frustrated, they let their irritation show and 37(9.6%) respondents strongly agreed that some of their friends thought that they are a hothead.

Table 4 Frequency distribution of 13-16 question of mobile gaming and physical activity tool

		Strongly agree	Agree	Neither	Disagree	Strongly Disagree
I often find myself disagreeing with people	n	56	120	84	82	43
	%	14.5	31.2	21.8	21.3	11.2
My friends say that I am somewhat argumentative	n	29	179	96	54	27
	%	7.5	46.5	24.9	14.0	7.0
When frustrated I let my irritation show	n	45	144	91	57	48
	%	11.7	37.4	23.6	14.8	12.5
Some of my friends think I am a hothead	n	37	119	86	87	56
	%	9.6	30.9	22.3	22.6	14.5

The study results showed that 41(10.6%) respondents strongly agreed that they had trouble controlling their temper, 38(9.9%) respondents strongly agreed with the statement that at tome they felt they had gotten a raw deal out of life, 30(7.8%) respondents strongly agreed that other people always seem to get the breaks, 60(15.6%) respondents strongly agreed that they are suspicious of overly friendly stranger.

Table 5 Frequency distribution of 17-20 question of mobile gaming and physical activity tool

		Strongly agree	Agree	Neither	Disagree	Strongly Disagree
I have trouble controlling my temper	n	41	119	94	85	46
	%	10.6	30.9	24.4	22.1	11.9
At times I feel I have gotten a raw deal out of life	n	38	117	104	96	30
	%	9.9	30.4	27.0	24.9	7.8
Other people always seem to get the breaks	n	30	133	107	70	45
	%	7.8	34.5	27.8	18.2	11.7
I am suspicious of overly friendly strangers	n	60	160	57	71	37
	%	15.6	41.6	14.8	18.4	9.6

In our study the mean total score of mobile gaming tool was 54.62±13.97 with minimum and maximum values if 20 & 100 scores respectively.

Table 6 Descriptive statistics of total score of mobile gaming and physical activity tool

Total Score	N	385
	Mean	54.62
	Std. Deviation	13.97
	Minimum	20.00
	Maximum	100.00

According to this study 57(14.8%) respondents reported that they had a job or do any unpaid work outside.

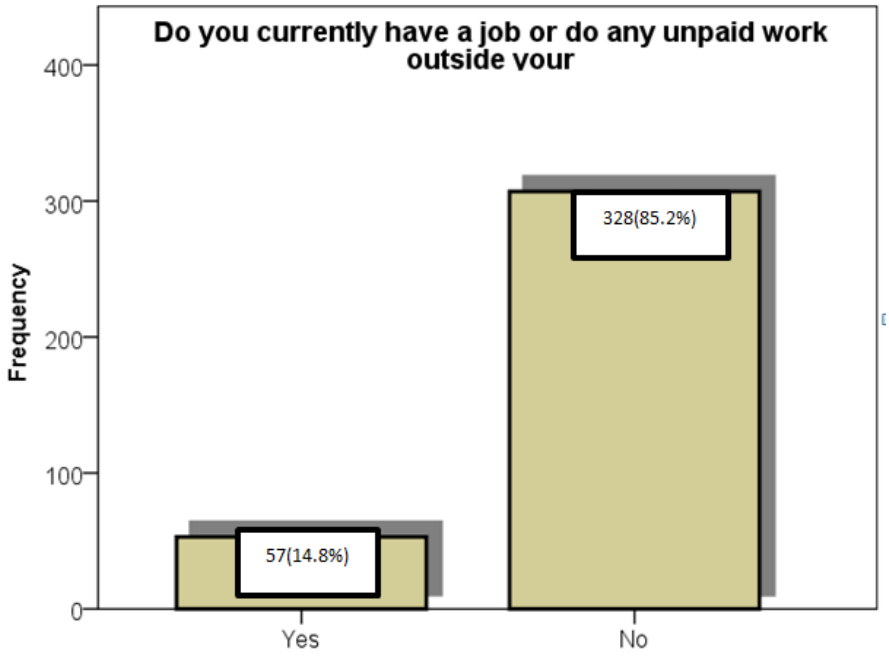


Fig 3; Distribution of "do you currently have a job or do any unpaid work outside

In this study one- and two-day vigorous activity was found in 15(3.9%) and 14(3.6%) respondents respectively, three-day activity was found in 12(3.1%) respondents and 4 days activity was noted in 16(4.2%) respondents.

Table 7 Distribution of "During the last 7 days vigorous physical activities as part of your work" of the respondents

During the last 7 days vigorous physical activities as part of your work		Frequency	Percent
Days/ week	1	15	3.9
	2	14	3.6
	3	12	3.1
	4	16	4.2
	No	328	85.2
Total		385	100.0

In our study no moderate activity during last 7 days related to job was found in 328(85.2%) respondents.

Table 8 Distribution of "last 7 days moderate activity as part of your work days per week" of the respondents

Last 7 days moderate activity as part of your work days per week		Frequency	Percent
Days/week	2	10	2.6
	3	16	4.2
	4	9	2.3
	5	12	3.1
	6	10	2.6
	No	328	85.2
	Total	385	100.0

One hours/ day moderate activity was noted in 22(5.7%) respondents, two and three hours/day moderate physical activity was noted in 17(4.4%) and 18(4.7%) respondents respectively. The mean time of moderate activity as part of work/job was 24.65±13.91 minutes.

Table 9 Distribution of "moderate physical activities as part of your work" of the respondents

Moderate physical activities as part of your work		Frequency	Percent
Hours/day	1	22	5.7
	2	17	4.4
	3	18	4.7
	No	328	85.2
	Total	385	100.0
Minutes/day	Mean±SD	24.65±13.91 minutes	

No job-related walk at least 10 minutes was noted in 328(85.2%) respondents. The mean work-related walk 10 minutes of the respondents was 109.47±42.61 minutes.

Table 10 Distribution of "walk at least 10 minutes as part of work" of the respondents

Walk at least 10 minutes as part of work		Frequency	Percent
Hours/day	1	20	5.2
	2	27	7.0
	3	10	2.6
	No Job-related walking	328	85.2
Minutes/day	Mean±SD	109.47±42.61	

In this study 186(48.3%) respondents travel of motor vehicle. One hour traveling was noted in 81(43.5%) respondents, two hours traveling was noted in 88(47.3%) respondents and three hours travelling was noted in 17(9.1%) respondents. The mean travelling on motor vehicle was noted in 99.35±38.45 minutes/week.

Table 11 Distribution of "last 7 days travel on motor vehicle" of the respondents

Last 7 days travel on motor vehicle		Frequency	Percent
Travel of motor vehicle	Yes	186	48.3
	No	199	51.7
	Total	385	100.0
Travel on bicycle (Hours/week)	One	81	43.5
	Two	88	47.3
	Three	17	9.1
Minutes/week	Mean±SD	99.35±38.45	

During last 7 days 205(53.2%) respondents reported that they walk for atleast 10 minutes from one place to other. The mean walks for atleast 10 minutes from one place to other of the respondents was 0.55±0.17 hours/day and it the mean walk for atleast 10 minutes from one place to other of the respondents was 9.8±14.66 minutes/day.

Table 12 Distribution of "last 7 days travel on motor vehicle" of the respondents

		Frequency	Percent
Last 7 days walk for atleast 10 minutes from one place to other	Yes	205	53.2
	No	180	46.8
	Total	385	100.0
Hours/day	Mean±SD	0.55±0.17	
Minutes/day	Mean±SD	9.8±14.66	

According to this study the vigorous activity like lifting chopping shoveling in garden yard during last 7 days was noted 179(46.5%) respondents. The mean time of this activity was 1.56±0.49 hours/day and the mean time of this activity 12.84±5.39 minutes/day.

Table 13 Distribution of "last 7 days vigorous activity lifting chopping shoveling in garden yard" of the respondents

		Frequency	Percent
Last 7 days vigorous activity lifting chopping shoveling etc in garden yard	Yes	179	46.5
	No	206	53.5
	Total	385	100.0
Hours/day	Mean±SD	1.56±0.49	
Minutes/day	Mean±SD	12.84±5.39	

According to this study moderate physical activity atleast 10 minutes was noted in 202(52.5%) respondents in which ≤3 hours/day was noted in 72(35.6%) respondents.

Table 14 Distribution of "last 7 days moderate physical activity atleast 10 minutes" of the respondents

		Frequency	Percent
Last 7 days moderate physical activity atleast 10 minutes etc	Yes	202	52.5
	No	183	47.5
	Total	385	100.0
Hours/day	≤3	72	35.6
	>3	130	64.4

The mean time of spending on walking days of the respondents was 12.84±5.39 minutes. Moderate activity during last 7 days was found in 220(57.1%) respondents, ≤ 3days moderate activities was noted in 88(22.9%) respondents and walk atleast 10 minutes during last 7 days was noted in 216(56.1%) respondents.

Table 15 Distribution of moderate activity questions of the respondents

		Frequency	Percent
Moderate activity during last 7 days	Yes	220	57.1
	No	165	42.9
Last 7 days on how many days did you do moderate activities	≤ 3 days	88	22.9
	>3 days	132	34.3
Last 7 days walk atleast 10 minutes	Yes	216	56.1
	No	169	43.9
How much time did you spend on walking days	Mean±SD	12.84±5.39	

According to this study during last 7 days vigorous physical activity (sports, leisure time etc) was noted in 133(34.5%) In this study ≤3 Days vigorous physical activity (sports, leisure etc) during last 7 days was noted in 71(18.4%) respondents. Last 7 days moderate activity like sports etc was noted in 168(43.6%) respondents in which moderate physical activity ≤3 days was noted in 71(18.4%) respondents.

Table 16 Distribution of vigorous physical activity (sports, leisure etc) questions of the respondents

		Frequency	Percent
Last 7 days vigorous physical activity/days	Yes	133	34.5
	No	46	11.9
Last 7 days on how many days did you do vigorous physical activity	≤3 Days	71	18.4
	>3 days	108	28.1
	Total	179	100.0
Last 7 days on did you do moderate physical activity	Yes	168	43.6
	No	217	56.4
Last 7 days on how many days did you do moderate physical activity	≤3	71	18.4
	>3	97	25.2

In these study 126(75.0%) respondents during last 7 days ≤3 hours usually spend on sitting on a weekday.

Table 17 Distribution of "Last 7 days how much time did you usually spend on sitting on a weekday" respondents

		Frequency	Percent
Last 7 days how much time did you usually spend on sitting on a weekday	Up to 3 Hours	126	75.0
	>3 Hours	42	25.0
	Total	168	100.0

The mean total Met score of the respondents was 5574.83±6149.44 with minimum and maximum scores of 0.00 & 41741.70 respectively.

Table 18 Descriptive statistics of total Met score

Total Met Score	N	385
	Mean	5574.83
	Std. Deviation	6149.44
	Minimum	0.00
	Maximum	41741.70

There was week negative correlation found between the total score of mobile gaming physical activity and total Met Score of the respondents. i.e., r=-0.076.

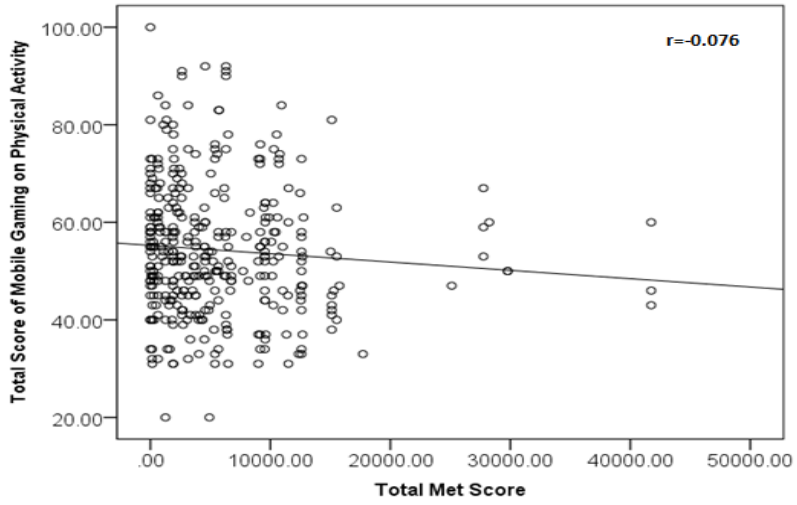


Fig 4; Correlation between total score of mobile gaming physical activity and total Met Score of the respondents

According to this study 57(14.81%) respondents were inactive, 110(28.57%) respondents were minimally active and 218(56.62%) respondents were very active.

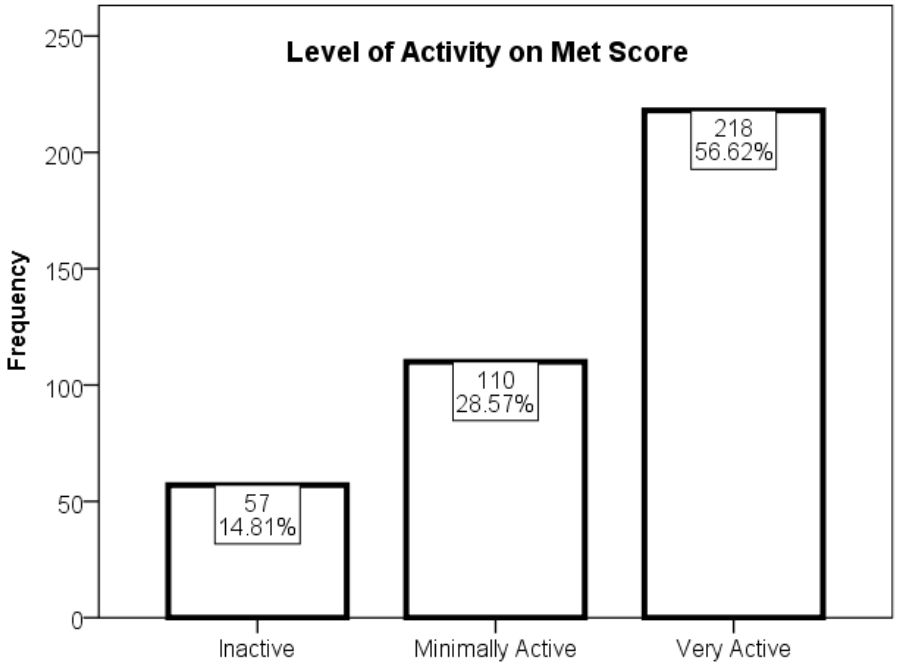


Fig 5 Frequency distribution of level of activity on the basis of Met score

5. DISCUSSION

Mobile gaming is the amusement activity of current day period. It increases the sedentary life style of the young generation of university going student. Now-a-days the young generation are more gadgets addicted. They spend their most of time on playing different games. When a person utilizes his time on sitting his physical activity reduced due to sedentary life style and their psychological health altered with time when he or she was addicted to mobile gaming.

The study aimed to determine the effects of mobile gaming on the physical activity and aggression. This study showed week negative correlation with mobile gaming and physical activity. The entire data of study was analyzed by SPSS version 23.

In this study, the populations mean age was min 20.61±1.45, max 17-30 years and their gaming time was 3 hours per day. This study showed the results according to response given by population. In Physical aggression level. 74.1%, were having moderately aggressive level 20.6% were having extremely aggressive behavior and 5.7% were having mild aggression so this showed strong correlation with mobile gaming.

In IPAQ 56.62% were found having high level of physical activity. 28.57% were having low level of physical activity and 14.81% were having no physical activity. These results showed that the major population of this study was having high physical activity level.

In previous studies the significant relation between anger and online Game addiction showed that aggressive behavior might increase mobile gaming addiction. Many studies gave results that young males play violent games rather than non-violent ones both online and offline.[12]

In previous studies, males was more dominant in spending time on online gaming as compared was found that males spend more time playing video games as compared to females and that was the reason why males having high aggression, whereas females spend less time playing video games and found to have low aggression.[3]so with correlation to the previous studies the male population gamers were having more aggression as compared to females.

In past studies held in Canada it doesn't show any association between the mobile gaming and aggression but the study discussed showed strong correlation between these two factors.[8]

In this study 17.9% strongly agreed that their usage more than they thought, 18.4% strongly agreed that the other people told using smartphone more than usual, 6.8% strongly agreed that they had more action such that they smash the other person without having smartphone, 8.6% strongly agreed that

they shatter items during insane activity,14.5% respondents felt contradict with people,7.5% strongly agreed that their companion says they had difference of opinion,11.7% strongly agreed that they got irritated when in frustration mood, 9.6% strongly agreed that their friends told them they had low temperament. The study outcomes show that 10.6% strongly agreed that they had very tough to control their temper, 9.9% strongly agreed that in home they felt no aim of life, 7.8% strongly agreed that the other persons always in mood of taking breaks, 15.6% strongly agreed that they are doubtful of too friendly unknowns. In this study 1-2 days strong activity was found in 3.9% participants while 3.1% vigorous were found in three days and 4.2% was found in 4 days activity,85.2% were found in no moderate activity during last seven days, 5.7% were found in 1 hr./day,4.4% were found in 2-3 hrs./day moderate activity, 85.2% were found in no walk-in during job least for ten minutes. 48.3% respondents use motorcycle for work. In this 1-hr travelling was noted in 43.5% participants while 47.3% were noted in two hours and 9.1% was noted in three hours/day. Study showed that 57(14.8%) participants were stagnant and 110(28.7%) were inconsequentially able to work. From previous seven days 53.2% respondents walk at least 10 minutes from one to another place.48.1% participants were involved in vigorous activity like uplifting heavy objects in lawn, 52.5% individuals were involved in moderate physical activity while 57.1% were involved in moderate during last seven days. Previous 7 days moderate activity like sports was seen in 168(43.6%) participants in which moderate physical activity ≤3 days was noted in 71(18.4%) respondents. In this research 126(75.0%) respondents during last 7 days ≤3 hours usually spend on sitting on a weekday.

In this context another literature, suggest that the aggression is related with addiction of online gaming but it showed less association between these two factors.[16]

In another past study it shows that the mobile gaming addiction changes the emotional and physical behavior of both gender playing games for more than three hours per day with correlation to my study the study showed high correlation between aggression and mobile gaming.[17]

In previous studies, their results were showing non-significant relation between physical activity and mobile gaming. That study gave evidences that if we reduce our time on sitting and using mobile phones might increase the physical fitness program time. the person having more sedentary lifestyle using mobile phone playing games have low level of physical activity and vice versa. [2]

In another past study it showed that a game poke man was having positive impact to increase the physical activity.[23]

In this study, the results were showing the week negative correlation between the mobile gaming and physical activity level of mobile gamer. The study was self-administered and included the modest

and young population of gamers. The main reason for the small number of participants in that study was the action not paid and no incentives given to the peoples playing games. The recent study results that specific personal qualities might be important within the creation, and consistency of mobile gaming addiction. This study also results that further studies are required to extend the findings of variables.

6. CONCLUSION

The study concluded that people who decrease their mobile gaming time and aggression thus increase their physical activity.

7. REFERENCES

1. Khazaie T, Saadatjoo A, Dormohamadi S, Soleimani M, Toosinia M, Mullah Hassan Zadeh F. Prevalence of mobile dependency and adolescence aggression. Journal of Birjand University of Medical Sciences. 2013;19(4):430-8.
2. Can S, Karaca A. Determination of musculoskeletal system pain, physical activity intensity, and prolonged sitting of university students using smartphone. 2019.
3. Ong JG, Lim-Ashworth NS, Ooi YP, Boon JS, Ang RP, Goh DH, et al. An interactive mobile app game to address aggression (RegnaTales): pilot quantitative study. JMIR serious games. 2019;7(2):e13242.
4. Shahbaz K, Khan A, Rasul F. IMPACTS OF VIDEO GAMING ON AGGRESSION AND COGNITIVE ABILITY OF PAKISTANIS VIDEO GAMERS. 2019.
5. Nigg CR, Mateo DJ, An J. Pokémon GO May Increase Physical Activity and Decrease Sedentary Behaviors. Am J Public Health. 2017;107(1):37-8.
6. Shameli A, Althoff T, Saberi A, Leskovec J, editors. How gamification affects physical activity: Large-scale analysis of walking challenges in a mobile application. Proceedings of the 26th International Conference on World Wide Web Companion; 2017.
7. Pasco D, Roure C, Kermarrec G, Pope Z, Gao Z. The effects of a bike active video game on players' physical activity and motivation. Journal of sport and health science. 2017;6(1):25-32.
8. Aggarwal A, Pandian JD. Internet gaming disorder in undergraduate medical and dentistry students. CHRISMED Journal of Health and Research. 2019;6(4):237.
9. Tran AW-Y. Young Children's Use of Mobile Technology: Impacts on Self-Regulation and Aggression. 2018.
10. Sema C, Ayda K. Determination of musculoskeletal system pain, physical activity intensity, and prolonged sitting of university students using smartphone. Biomedical Human Kinetics. 2019;11(1):28-35.
11. Althoff T, White RW, Horvitz E. Influence of Pokémon Go on Physical Activity: Study and Implications. J Med Internet Res. 2016;18(12):e315.
12. Oh J, An J. Depressive symptoms, emotional aggression, school adjustment, and mobile phone dependency among adolescents with allergic diseases in South Korea. Journal of pediatric nursing. 2019;47:e24-e9.

13. Grusser SM, Thalemann R, Griffiths MD. Excessive computer game playing: evidence for addiction and aggression? Cyberpsychology & behavior : the impact of the Internet, multimedia and virtual reality on behavior and society. 2007;10(2):290-2.

14. Mehroof M, Griffiths MD. Online gaming addiction: the role of sensation seeking, self-control, neuroticism, aggression, state anxiety, and trait anxiety. Cyberpsychology, behavior and social networking. 2010;13(3):313-6.

15. Květon P, Jelínek M. Frustration and Violence in Mobile Video Games. Swiss Journal of Psychology. 2020;79(2):63-70.

16. Craig C, Marshall A, Sjostrom M, Bauman A, Lee P, Macfarlane D, et al. International Physical Activity Questionnaire-Short Form. 2017.

17. Samani S. Study of Reliability and Validity of the Buss and Perry's Aggression Questionnaire. Iranian Journal of Psychiatry and Clinical Psychology. 2008;13(4):359-65.

18. Kanwal S, Annum K, Faiza R. Impacts of video gaming on aggression and cognitive ability of Pakistanis video gamers. International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies. 2019;10(14).

19. Mehroof M, Griffiths MD. Online gaming addiction: the role of sensation seeking, self-control, neuroticism, aggression, state anxiety, and trait anxiety. Cyberpsychology, behavior, and social networking. 2010;13(3):313-6.

20. Evren C, Evren B, Dalbudak E, Topcu M, Kutlu N. Relationship of internet gaming disorder severity with symptoms of anxiety, depression, alexithymia, and aggression among university students. Dusunen Adam The Journal of Psychiatry and Neurological Sciences. 2019;32(3):227.

21. POLO MI, Lázaro SM, del Barco BL, Castaño EF. Mobile abuse in university students and profiles of victimization and aggression. Adicciones. 2017;29(4).

22. Can S, Karaca A. Determination of musculoskeletal system pain, physical activity intensity, and prolonged sitting of university students using smartphone. Biomedical Human Kinetics. 2019;11(1):28-35.

23. Marquet O, Alberico C, Hipp AJ. Pokémon GO and physical activity among college students. A study using Ecological Momentary Assessment. Computers in Human Behavior. 2018;81:215-22.

24. Kwon M, Lee J-Y, Won W-Y, et al. Development and validation of a smartphone addiction scale (SAS). PloS one. 2013;8(2):e56936.

APPENDIX 8.1 Ethical Committee Approval

National Institutes of Health
Health Research Institute
National Bioethics Committee (NBC)
****

Ref: No.4-87/NBC-796/22/2425 **Date: June 24, 2022**

Dr. Muhammad Irfan Mahais
Yeditepe University İnönü Mah. Kayışdağı Cad. 26
Ağustos Yerleşimi Atasehir
Istanbul, Turkey 34755

Subject: **Effects of Mobile Gaming on Physical Activity and Emotional Health Aggression in University Students of Rahim Yar Khan, Pakistan (NBC-796).**

Dear Dr. Muhammad Irfan Mahais

I am pleased to inform you that the above mentioned project has been approved by the "Research Ethics Committee" of "National Bioethics Committee" **for a period of one year.**

For the continuation of project in the next years, you have to send a progress report and a formal request asking for continuation of projects (however, you do not need to submit REC application or pay any processing fee again).

Kindly keep the National Bioethics Committee, Secretariat updated about the progress of the project and submit the formal final report on completion.

Yours sincerely

(Prof. Dr. Saima Perwaiz Iqbal)
Chairperson
NBC-Research Ethics Committee

Health Research Institute, Shahrah-e-Jamhuriat, Off Constitution Avenue, Sector G-5/2, Islamabad
www.nbcpakistan.org.pk,e-mail: nbcpakistan@nih.org.pk Tel: 92-51-9224325, 9216793, Fax 9216774.

APPENDIX 8.2. Informed Written Consent Form

INFORMED CONSENT FORM:

Respected participant, the study you are going to participate is "Effects of mobile gaming on Physical activity and Emotional Health aggression in university students of Rahim yar Khan, Pakistan."

Please give approval of your contribution by filling the form.

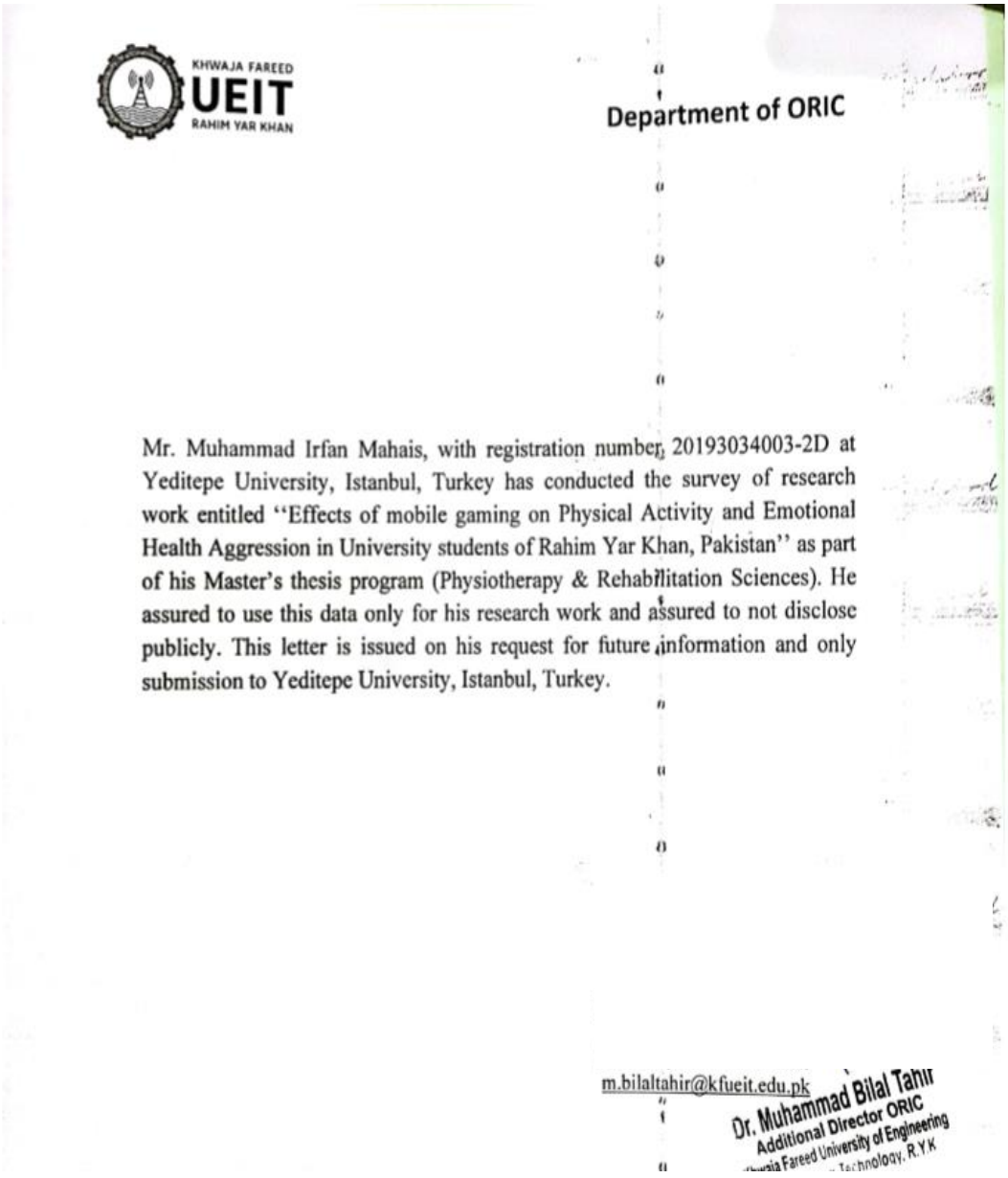
- ☐ I confirm that I have read and understand the information for the study.
- ☐ I understand that taking part is voluntary.
- ☐ I agree to take part in this study and researcher having the following personal details.

Name; _____

Gender; _____ Age; _____ Date; _____

Signature; _____

Appendix 8.3. Data Collection Approval



KHWAJA FAREED UEIT RAHIM YAR KHAN

Department of ORIC

Mr. Muhammad Irfan Mahais, with registration number 20193034003-2D at Yeditepe University, Istanbul, Turkey has conducted the survey of research work entitled ''Effects of mobile gaming on Physical Activity and Emotional Health Aggression in University students of Rahim Yar Khan, Pakistan'' as part of his Master's thesis program (Physiotherapy & Rehabilitation Sciences). He assured to use this data only for his research work and assured to not disclose publicly. This letter is issued on his request for future information and only submission to Yeditepe University, Istanbul, Turkey.

m.bilaltahir@kfueit.edu.pk

Dr. Muhammad Bilal Tahir
Additional Director ORIC
Khwaja Fareed University of Engineering & Technology, R.Y.K

Appendix 8.4. Structured Questionnaire

EFFECTS OF MOBILE GAMING ON PHYSICAL ACTIVITY AND EMOTIONAL HEALTH AGGRESSION IN UNIVERSITY STUDENT OF RAHIM YAR KHAN PAKISTAN

Name:_____ **Date of Birth:** _____

Gender:_____ **Cell No:** _____

	Strongly Agree	Agree	Neither	Diseagree	Strongly Disagree
Missing planned work due to smartphone use	☐	☐	☐	☐	☐
Having a hard time conentrating in class, while doing assignments, or while working due to smartphone use.	☐	☐	☐	☐	☐
Feeling pain in the wrists or at the back of the neck while using a smartphone	☐	☐	☐	☐	☐
Will not be able to stand not having a smartphone	☐	☐	☐	☐	☐
Feeling impatient and fretful when I am not holding my smartphone	☐	☐	☐	☐	☐
Having my smarphone in my mind even when I holding my smartphone	☐	☐	☐	☐	☐
I will never give up using my smartphone even when my daily life is already greatly affected by it	☐	☐	☐	☐	☐
Constantly checking my smartphone so as not to miss conversations between other people on whatsapp, facebook or instagram	☐	☐	☐	☐	☐
Using my smartphone longer than I had intended	☐	☐	☐	☐	☐
The people around me tell me that I use my smartphone too much	☐	☐	☐	☐	☐
Given enough provocation, I may hit another person.	☐	☐	☐	☐	☐
I have become so mad that I have broken things.	☐	☐	☐	☐	☐
I often find myself disagreeing with people.	☐	☐	☐	☐	☐
My friends say that I'm somewhat argumentative.	☐	☐	☐	☐	☐
When frustrated, I let my irritation show.	☐	☐	☐	☐	☐
Some of my friends think I'm a hothead.	☐	☐	☐	☐	☐
I have trouble controlling my temper.	☐	☐	☐	☐	☐
At times I feel I have gotten a raw deal out of life.	☐	☐	☐	☐	☐
Other people always seem to get the breaks.	☐	☐	☐	☐	☐
I am suspicious of overly friendly strangers	☐	☐	☐	☐	☐

APPENDIX 8.5. International physical activity questionnaire

PART 1: JOB-RELATED PHYSICAL ACTIVITY

The first section is about your work. This includes paid jobs, farming, volunteer work, course work, and any other unpaid work that you did outside your home. Do not include unpaid work you might do around your home, like housework, yard work, general maintenance, and caringfor your family. These are asked in Part 3.

1. Do you currently have a job or do any unpaid work outside your home?

☐ Yes

☐ No → **Skip to PART 2: TRANSPORTATION**

The next questions are about all the physical activity you did in the **last 7 days** as part of your paid or unpaid work. This does not include traveling to and from work.

2. During the **last 7 days**, on how many days did you do **vigorous** physical activities like heavy lifting, digging, heavy construction, or climbing upstairs **as part of your work**? Think about only those physical activities that you did for at least 10 minutes at a time.

_____ **days per week**

☐ No vigorous job-related physical activity → ***Skip to question 4***

3. How much time did you usually spend on one of those days doing **vigorous** physical activities as part of your work?

_____ hours per day
_____ **minutes per day**

4. Again, think about only those physical activities that you did for at least 10 minutes at a time. During the **last 7 days**, on how many days did you do **moderate** physical activities like carrying light loads **as part of your work**? Please do not include walking.

_____ days per week

☐ No moderate job-related physical activity → ***Skip to question 6***

5. How much time did you usually spend on one of those days doing **moderate** physical activities as part of your work?

_____ hours per day
_____ **minutes per day**

6. During the **last 7 days**, on how many days did you **walk** for at least 10 minutes at a time **as part of your work**? Please do not count any walking you did to travel to or from work.

_____ days per week

☐ No job-related walking → ***Skip to PART 2: TRANSPORTATION***

7. How much time did you usually spend on one of those days **walking** as part of your work?

_____ hours per day
_____ **minutes per day**

PART 2: TRANSPORTATION PHYSICAL ACTIVITY

These questions are about how you traveled from place to place, including to places like work, stores, movies, and so on.

8. During the **last 7 days**, on how many days did you **travel in a motor vehicle** like a train, bus, car, or tram?

_____ days per week

☐ No traveling in a motor vehicle → ***Skip to question 10***

9. How much time did you usually spend on one of those days **traveling** in a train, bus, car, tram, or other kind of motor vehicle?

_____ hours per day
_____ **minutes per day**

Now think only about the **bicycling** and **walking** you might have done to travel to and from work, to do errands, or to go from place to place.

10. During the **last 7 days**, on how many days did you **bicycle** for at least 10 minutes at a time to go **from place to place**?

_____ days per week

☐ No bicycling from place-to-place → ***Skip to question 12***

11. How much time did you usually spend on one of those days to **bicycle** from place to place?

_____ hours per day
_____ **minutes per day**

12. During the **last 7 days**, on how many days did you **walk** for at least 10 minutes at a time to go **from place to place**?

_____ days per week

☐ No walking from place to place → ***Skip to PART 3: HOUSEWORK, HOUSE MAINTENANCE, ANDCARING FOR FAMILY***

13. How much time did you usually spend on one of those days **walking** from place to place?

_____ hours per day
_____ **minutes per day**

PART 3: HOUSEWORK, HOUSE MAINTENANCE, AND CARING FOR FAMILY

This section is about some of the physical activities you might have done in the **last 7 days** in and around your home, like housework, gardening, yard work, general maintenance work, and caring for your family.

14. Think about only those physical activities that you did for at least 10 minutes at a time. During the **last 7 days**, on how many days did you do **vigorous** physical activities like heavy lifting, chopping wood, shoveling snow, or digging **in the garden or yard**?

_____ days per week

☐ No vigorous activity in garden or yard → ***Skip to question 16***

15. How much time did you usually spend on one of those days doing **vigorous** physical activities in the garden or yard?

_____ hours per day
_____ **minutes per day**

16. Again, think about only those physical activities that you did for at least 10 minutes at a time. During the **last 7 days**, on how many days did you do **moderate** activities like carrying light loads, sweeping, washing windows, and raking **in the garden or yard**?

_____ days per week

☐ No moderate activity in garden or yard → ***Skip to question 18***

17. How much time did you usually spend on one of those days doing **moderate** physical activities in the garden or yard?

_____ hours per day
_____ **minutes per day**

18. Once again, think about only those physical activities that you did for at least 10 minutes at a time. During the **last 7 days**, on how many days did you do **moderate** activities like carrying light loads, washing windows, scrubbing floors and sweeping **inside your home**?

_____ days per week

☐ No moderate activity inside home → ***Skip to PART 4: RECREATION, SPORT AND LEISURE-TIME PHYSICAL ACTIVITY***

19. How much time did you usually spend on one of those days doing **moderate** physical activities inside your home?

_____ hours per day
_____ **minutes per day**

PART 4: RECREATION, SPORT, AND LEISURE-TIME PHYSICAL ACTIVITY

This section is about all the physical activities that you did in the **last 7 days** solely for recreation, sport, exercise or leisure. Please do not include any activities you have already mentioned.

20. Not counting any walking you have already mentioned, during the **last 7 days**, on how many days did you **walk** for at least 10 minutes at a time **in your leisure time**?

_____ days per week

☐ No walking in leisure time → ***Skip to question 22***

21. How much time did you usually spend on one of those days **walking** in your leisure time?

_____ hours per day
_____ **minutes per day**

22. Think about only those physical activities that you did for at least 10 minutes at a time. During the **last 7 days**, on how many days did you do **vigorous** physical activities like aerobics, running, fast bicycling, or fast swimming **in your leisure time**?

_____ days per week

☐ No vigorous activity in leisure time → ***Skip to question 24***

23. How much time did you usually spend on one of those days doing **vigorous** physicalactivities in your leisure time?

_____ hours per day
_____ **minutes per day**

24. Again, think about only those physical activities that you did for at least 10 minutes at a time. During the **last 7 days**, on how many days did you do **moderate** physical activitieslike bicycling at a regular pace, swimming at a regular pace, and doubles tennis **in your leisure time**?

_____ days per week

☐ No moderate activity in leisure time? → ***Skip to PART 5: TIME SPENT***

SITTING

25. How much time did you usually spend on one of those days doing **moderate** physicalactivities in your leisure time?

_____ hours per day
_____ **minutes per day**

PART 5: TIME SPENT SITTING

The last questions are about the time you spend sitting while at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading or sitting or lying down to watch television. Do not include any time spent sittingin a motor vehicle that you have already told me about.

26. During the **last 7 days**, how much time did you usually spend **sitting** on a **weekday**?

_____ hours per day
_____ **minutes per day**

27. During the **last 7 days**, how much time did you usually spend **sitting** on a **weekendday**?

_____ hours per day
_____ **minutes per day**

This is the end of the questionnaire, thank you for participating.

APPENDIX 8.5.1. Evaluation of the IPAQ Questionnaire

International Physical Activity Questionnaire provides information on time spent walking, moderate and vigorous activities, and time spent sitting.

Calculation of the total score of the short form includes the sum of the duration (minutes) and frequency (days) of walking, moderate-intensity activity, and vigorous activity. The energy required for activities is calculated with the MET-minute score. Standard best available techniques for these activities values have been created. These;

Sitting	**1.5 Met**
Walk	**3.3 Met**
Moderately Physical Activity	**4.4 Mets**
Vigorous Physical Activity	**8.8 Mets**

By using these values, daily and weekly physical activity level is calculated.

Example: Walking MET-min/week score of a person walking for 3 days, 30 minutes. It is calculated as 3.3 X 3 X 30 = 297 MET-min/week.

Walking MET-min/week = 3.3 X walking minutes X number of walking days

Moderate-intensity MET-min/week = 4.0 X minutes of moderate-intensity activity X number of days ofmoderate-intensity activity

Vigorous **MET-min/week =** 8.0 X minutes of vigorous activity X vigorous activity number of days

Total, MET-min/week = (walking + moderate + vigorous + sitting) MET-min/week

In addition to this continuous scoring, classification according to the numerical data obtained wasdone.

Accordingly, there are 3 activity levels:

1. **Inactive (Category 1):** It is the lowest level of physical activity. into categories 2 and 3Cases that cannot be included are considered inactive.
2. **Minimally Active (Category 2):** Those who meet any of the following criteria are minimallyactive.

a) Doing vigorous activity for at least 20 minutes on 3 or more days

b) 5 or more days of moderate-intensity activity or walking for at least 30 minutes per day

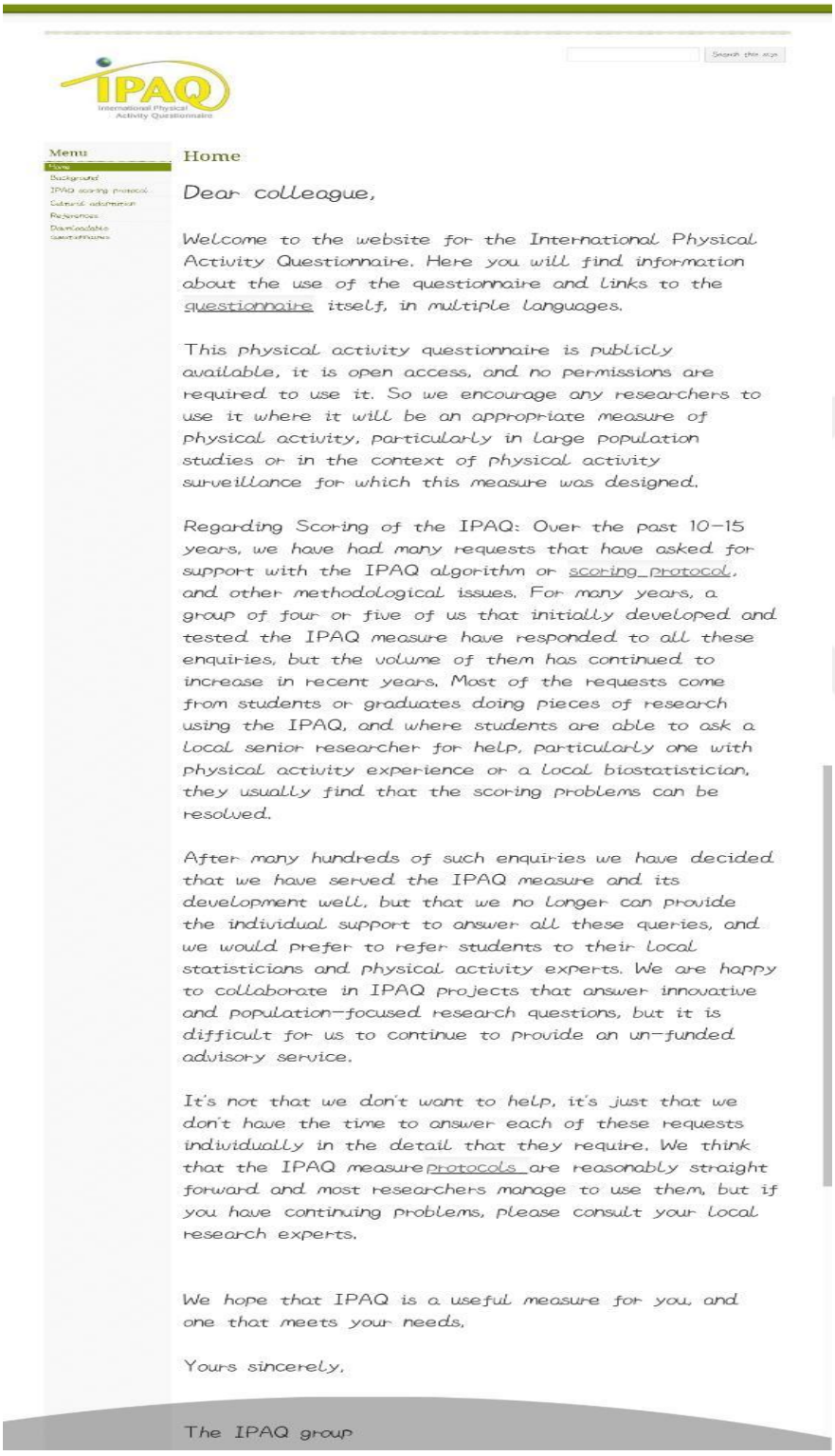
c) A combination of 5 or more days of walking and moderate-intensity activity providing a minimumof 600 MET-min/week

3. **Very Active (Category 3):** This measurement equates to approximately one hour or more of moderate-intensity activity per day. This category is the level required to provide health benefits.

a) At least 3 days of vigorous activity or more days providing a minimum of 1500 MET-min/week

b) A combination of 7 or more days of walking, moderate-intensity or vigorous activity providing aminimum of 3000 MET-min/week

APPENDIX 8.5.2. Approval of IPAQ Questionnaire use



IPAQ
International Physical Activity Questionnaire

Menu
Home
Background
IPAQ scoring protocol
Cultural adaptation
References
Downloadable questionnaires

Home

Dear colleague,

Welcome to the website for the International Physical Activity Questionnaire. Here you will find information about the use of the questionnaire and links to the questionnaire itself, in multiple languages.

This physical activity questionnaire is publicly available, it is open access, and no permissions are required to use it. So we encourage any researchers to use it where it will be an appropriate measure of physical activity, particularly in large population studies or in the context of physical activity surveillance for which this measure was designed.

Regarding Scoring of the IPAQ: Over the past 10–15 years, we have had many requests that have asked for support with the IPAQ algorithm or scoring protocol, and other methodological issues. For many years, a group of four or five of us that initially developed and tested the IPAQ measure have responded to all these enquiries, but the volume of them has continued to increase in recent years. Most of the requests come from students or graduates doing pieces of research using the IPAQ, and where students are able to ask a local senior researcher for help, particularly one with physical activity experience or a local biostatistician, they usually find that the scoring problems can be resolved.

After many hundreds of such enquiries we have decided that we have served the IPAQ measure and its development well, but that we no longer can provide the individual support to answer all these queries, and we would prefer to refer students to their local statisticians and physical activity experts. We are happy to collaborate in IPAQ projects that answer innovative and population-focused research questions, but it is difficult for us to continue to provide an un-funded advisory service.

It's not that we don't want to help, it's just that we don't have the time to answer each of these requests individually in the detail that they require. We think that the IPAQ measure protocols are reasonably straight forward and most researchers manage to use them, but if you have continuing problems, please consult your local research experts.

We hope that IPAQ is a useful measure for you, and one that meets your needs,

Yours sincerely,

The IPAQ group

APPENDIX 8.6. The Aggression Questionnaire

Rate each of the following items in terms of how characteristic they are of you. Use the following scale:

1 2 3 4 5

Aggression Factor I

_____ 1. Once in a while, I can't control the urge to strike another person.

_____ 2. Given enough provocation, I may hit another person.

_____ 3. If someone hits me, I hot back.

_____ 4. I get into fights a little more than the average person.

_____ 5. If I have to resort to violence to protect my rights, I will.

_____ 6. There are people who pushed me so far that we came to blows.

_____ 7. I can think of no-good reason for ever hitting a person. *

_____ 8. I have threatened people I know.

_____ 9.

_____ Total (*Reverse rating 1 = 5, 2 = 4, 3 = 3. 4 = 2, 5 = 1)

Aggression Factor II

_____ 1. I tell my friends openly when I disagree with them.

_____ 2. I often find myself disagreeing with people.

_____ 3. When people annoy me, I may tell them what I think of them.

_____ 4. I can't help getting into arguments when people disagree with me.

_____ 5. My friends say that I'm somewhat argumentative.

_____ Total

Aggression Factor III

_____ 1. I flare up quickly but get over it quickly.

_____ 2. When frustrated, I let my irritation show.

_____ 3. I sometimes feel like a powder keg ready to explode.

_____ 4. I am an even-tempered person. *

_____ 5. Some of my friends think I'm a hothead.

_____ 6. Sometimes I fly off the handle for no good reason.

_____ 7. I have trouble controlling my temper.

_____ Total (*Reverse rating 1 = 5, 2 = 4, 3 = 3. 4 = 2, 5 = 1)

Aggression Factor IV

_____ 1. I am sometimes eaten up with jealousy.

_____ 2. At times I feel I have gotten a raw deal out of life.

_____ 3. Other people always seem to get the breaks.

_____ 4. I wonder why sometimes I feel so bitter about things.

_____ 5. I know that "friends" talk about me behind my back.

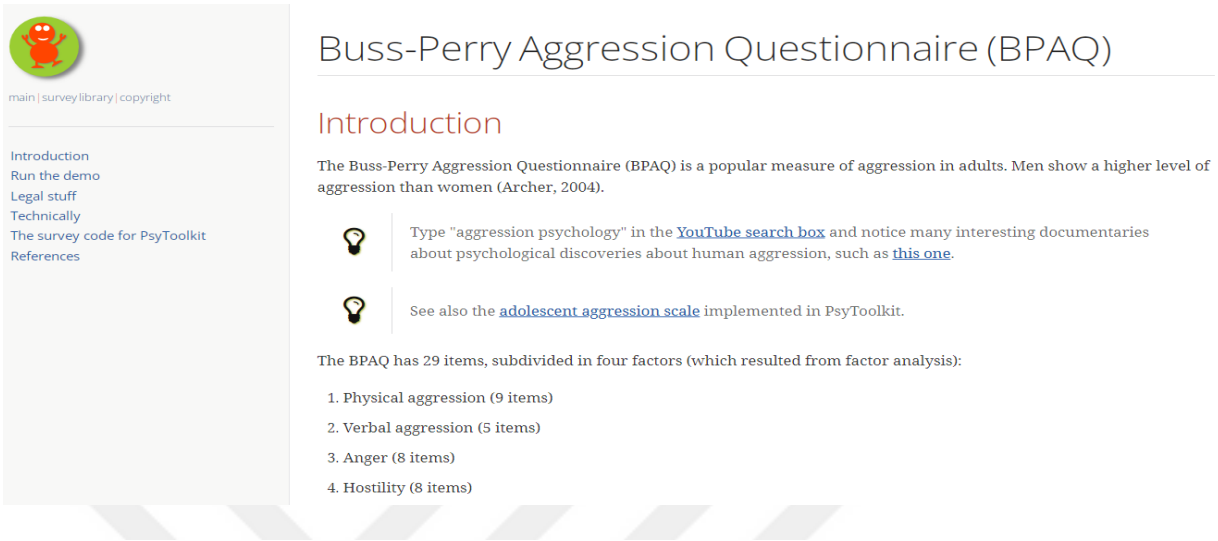
_____ 6. I am suspicious of overly friendly strangers.

_____ 7. I sometimes feel that people are laughing at me behind my back.

_____ 8. When people are especially nice, I wonder what they want.

_____ Total

APPENDIX 8.6.1. Approval of BPAQ Questionnaire use



main | survey library | copyright

Introduction
Run the demo
Legal stuff
Technically
The survey code for PsyToolkit
References

Buss-Perry Aggression Questionnaire (BPAQ)

Introduction

The Buss-Perry Aggression Questionnaire (BPAQ) is a popular measure of aggression in adults. Men show a higher level of aggression than women (Archer, 2004).

Type "aggression psychology" in the YouTube search box and notice many interesting documentaries about psychological discoveries about human aggression, such as this one.

See also the adolescent aggression scale implemented in PsyToolkit.

The BPAQ has 29 items, subdivided in four factors (which resulted from factor analysis):

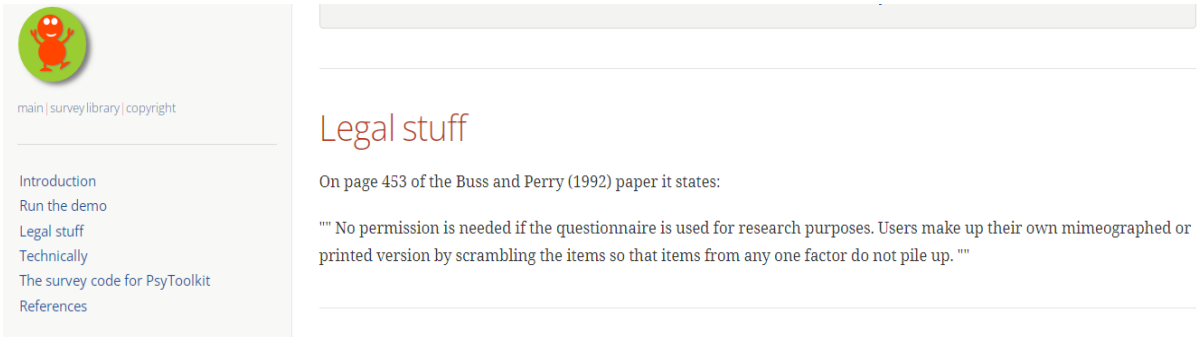
1. Physical aggression (9 items)
2. Verbal aggression (5 items)
3. Anger (8 items)
4. Hostility (8 items)

The average scores from the original Buss and Perry (1992) paper are shown below.

Table 1. Average scores of men and women (612 men and 641 women).

Scale	Range	Men	Women
Physical aggression	9-45	24.3	17.9
Verbal aggression	5-25	15.2	13.5
Anger	7-35	17.0	16.7
Hostility	8-40	21.3	20.2
Total score	29-145	77.8	68.2

The subscales differ in range because they have different numbers of questions. For example, there are 9 questions related to physical aggression, each ranked on a 1-5 scale.



main | survey library | copyright

Introduction
Run the demo
Legal stuff
Technically
The survey code for PsyToolkit
References

Legal stuff

On page 453 of the Buss and Perry (1992) paper it states:

"" No permission is needed if the questionnaire is used for research purposes. Users make up their own mimeographed or printed version by scrambling the items so that items from any one factor do not pile up. ""

APPENDIX 8.7. Smartphone Addiction Scale

SMARTPHONE ADDICTION SCALE-SHORT VERSION

Below are explanations containing various feelings and thoughts about smartphone use.

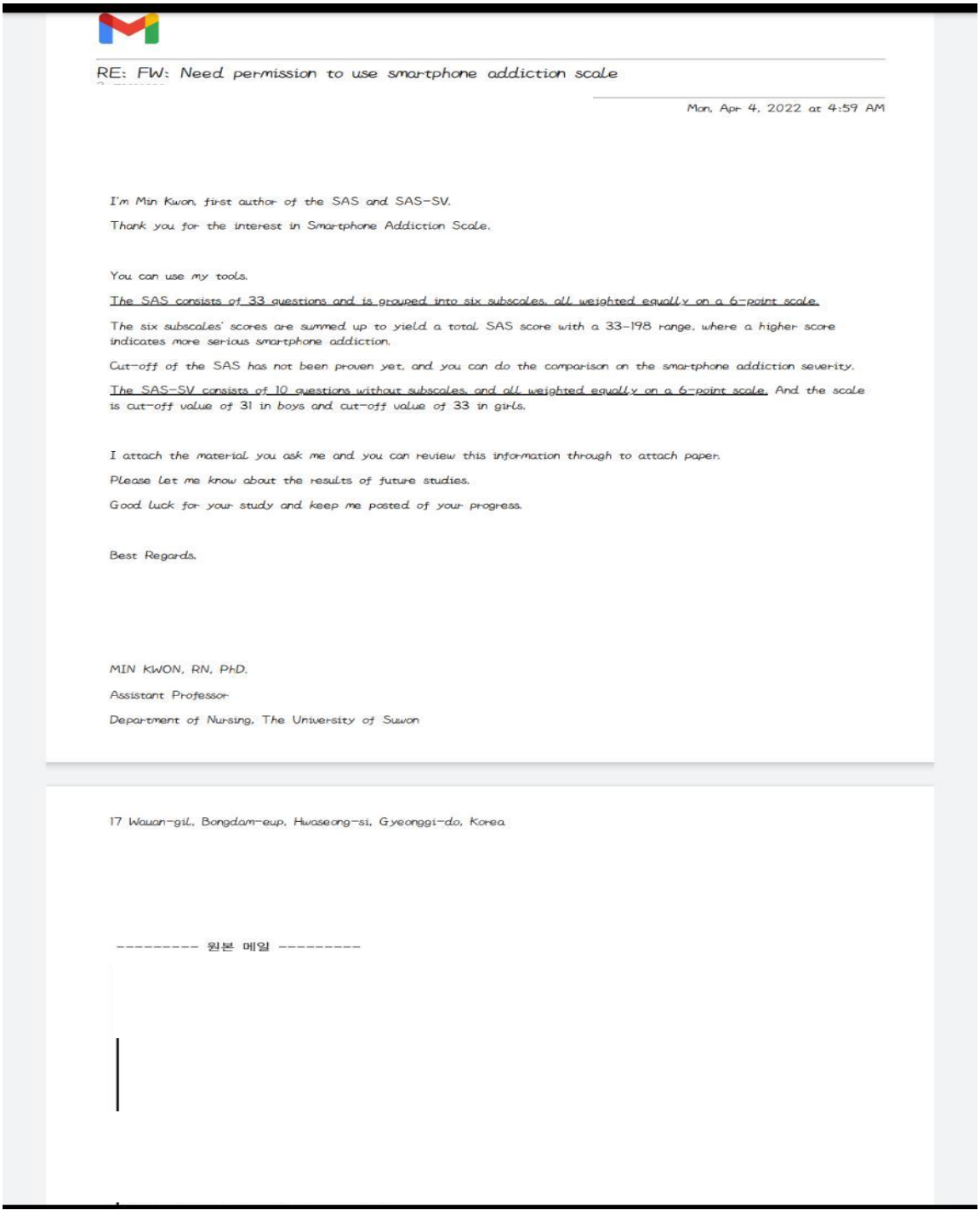
Express the extent to which you agree with each statement on a scale from 1 to 6. there are numbers.

1-Strongly disagree, 2-Disagree, 3-Partly disagree, 4-PartlyI agree, 5-I agree, 6-I totally agree.

Please evaluate how well each explanation fits you and choose the most appropriate option. Put it in a

1 Missing planned work due to smartphone use	1 2 3 4 5 6
2 Having a hard time concentrating in class, while doing assignments, or while working due to smartphone use	1 2 3 4 5 6
3 Feeling pain in the wrists or at the back of the neck while using a smartphone	1 2 3 4 5 6
4 Will not be able to stand not having a smartphone	1 2 3 4 5 6
5 Feeling impatient and fretful when I am not holding my smartphone	1 2 3 4 5 6
6 Having my smartphone in my mind even when I am not using it	1 2 3 4 5 6
7 I will never give up using my smartphone even when my daily life is already greatly affected by it	1 2 3 4 5 6
8 Constantly checking my smartphone so as not to miss conversations between other people on WhatsApp, Facebook or Instagram	1 2 3 4 5 6
9 Using my smartphone longer than I had intended	1 2 3 4 5 6
10 The people around me tell me that I use my smartphone too much	1 2 3 4 5 6

APPENDIX.8.7.1. Approval of SAS-SV Questionnaire use



RE: FW: Need permission to use smartphone addiction scale

Mon, Apr 4, 2022 at 4:59 AM

I'm Min Kwon, first author of the SAS and SAS-SV.

Thank you for the interest in Smartphone Addiction Scale.

You can use my tools.

The SAS consists of 33 questions and is grouped into six subscales, all weighted equally on a 6-point scale.

The six subscales' scores are summed up to yield a total SAS score with a 33-198 range, where a higher score indicates more serious smartphone addiction.

Cut-off of the SAS has not been proven yet, and you can do the comparison on the smartphone addiction severity.

The SAS-SV consists of 10 questions without subscales, and all weighted equally on a 6-point scale. And the scale is cut-off value of 31 in boys and cut-off value of 33 in girls.

I attach the material you ask me and you can review this information through to attach paper.

Please let me know about the results of future studies.

Good luck for your study and keep me posted of your progress.

Best Regards.

MIN KWON, RN, PhD.

Assistant Professor

Department of Nursing, The University of Suwon

17 Wauan-gil, Bongdam-eup, Hwaseong-si, Gyeonggi-do, Korea

---------- 원본 메일 ----------

APPENDIX 9. Curriculum Vitae

Personal Informations

Name	Muhammad Irfan	**Surname**	Mahais

Education

Degree	Department	The name of the Institution Graduated From	Graduation year
Master	Physiotherapy and Rehabilitation	**Yeditepe University, Istanbul, Turkey**	2022
University	Doctor of Physiotherapy (DPT)	**The Superior College**	2018
High school	Pre-medical (Biology, Chemistry,Physics)	**Punjab College**	2013

[#] All the grades must be listed if there is more than one (KPDS, ÜDS, TOEFL; IELTS vs),

Languages	**Grades ([#])**
IELTS	6.5,6,5.5,6=6

Work Experience (Sort from present to past)

Position	Institute	**Duration (Year - Year)**
Internship	Jinnah Burn & Reconstructive Surgery Centre, Lahore, Pakistan	March 2019-August 2019
Internship	Rehab Cure Clinic	September 2019-January 2020

Computer Skills

Program	**Level**
Microsoft Word, Microsoft PowerPoint	Good
SPSS, Adobe Photoshop, Writing	Average

***Excellent, good, average or basic**