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THE ATTITUDES OF 10-14 YEARS OLD CHILDREN AGAINST THE ACT OF PLAYING GAMES REQUIRING PHYSICAL ACTIVITY (PLAYFULNESS AMONG 10-14 YEARS OLD CHILDREN)

Muhsin HAZAR[1]
[1]Gazi University, Ankara, Turkey
https://orcid.org/0000-0002-5300-9581

Email: muhsin@gazi.edu.tr

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Abstract

The objective of this study is to develop an assessment instrument directed to assessment of attitudes of children coming from 10 – 14 years old group against playing the games requiring physical activity. The scale constituted from 33 Article was applied totally on 1008 children and 499 of them are girls and 509 of them are boys who are taking high school education in Çankaya,Keçiören and Yenimahalle Districts of Ankara. Analysis of articles and exploratory factor analysis of the gathered data are implemented with the aim of ensuring the validity of structure and it is stated that the structure of the scale has five – factored sub structure constituted from 27 articles. These are named as "Game Passion", "Social Adaptation", "Desire to Play Game", "The Will to win" and "Risk Taking". The total variance rate of these five factors is 51, 291. As a prove of validity of article, article test correlations were calculated and the correlation coefficients are changing between 0,30 and 0,62. In order to determine the reliability level of the scale, Cronbach Alpha value was used. As a result of conducted calculation, it is seen that the alpha value for 27 articles is 0.82. The scale which is prepared in line with this value has high level of reliability. The alpha values in terms of factors, it can be stated that the first factor was calculated as 0,73; the second factor was calculated as 0,82; the third factor was calculated as 0,64; the fourth factor was calculated as 0,61 and the fifth factor was calculated as 0,63. As a conclusion, it is determined that the developed "Playfulness Scale" is a valid and reliable assessment instrument in determining the attitudes of middle – school student against playing the games requiring physical activity.

Keywords: 10-14 Years old, Physical activity game, Playfulness

Introduction

There is no clear idea about the term "attitude" in social sciences. Each of the idea evaluates different aspects of the term "attitude" or there are different denotations which are in use (Tavşancıl, 2010: 65). However, "attitude" is generally determined as a reaction / predisposition of an individual against any issue (living or non – living) (Tekarslan et. al., 2000: 197). Şimşek et. al., (2008: 71) stated that "attitude is the period of enthusiasm and familiarization which emerges in line with definite value standards and believes regarding an aspect of his / her own life.

On the other hand, from the aspect of children, games are the funny activities which ensure the mental, physical and spiritual development. On one hand, games contribute to development of children in fun and entertainment (Mengütay, 2006: 95) and on the other hand, games also provide the chance of physical activity and the ability to express him / her. These characteristics are very important for the children who are growing within a computer-based society which causing immobility via virtual games and television. The increase in digital addiction encourages a sedentary lifestyle and, by affecting eating habits, leads to an increase in obesity (Oniz, Sarıtaş and Gocer, 2023). In addition to this, the games requiring physical activity develops creativity, the ability to solve problem, the fighting spirit, social interaction, solidarity and increases entertainment (Byl, 2002: XXV). Active games provide the abilities which are essential for children and also contribute to muscle building and development of auditory perceptions. Games provide opportunities for children to develop their self-confidence, moral, aesthetic, and spiritual components of learning (Yuldoshev, 2021). Thanks to games, children can comprehend the social values and also they can realize their own power. The children who play games become more creative and his / her curiosity also develops. (Auerbach, 2008: 20-23).

Huizinga (2006: 50) defined the term "game" as a voluntary action or activity which is accepted freely and which is implemented in definite time and places in accordance with totally instructive rules and which has an objective in itself in accordance with the consciousness of "being different from routine life in addition to stress and happiness. On the other hand, Özmen (1999: 119-120) determined "game" as an activity which includes the basic moves such as jumping, hopping, etc. and which emerges naturally without any external impact.

"Game is the activity which is seen in free times in line with a definite objective with physical and mental abilities within limited place and time in accordance with its own rules and which creates groups as a result of voluntary participation, develops social adaptation and emotional maturity and which depends on ability, intelligence, skills and coincidences; which affects the participants and audiences in company with the sense of stress and which does not give any monetary / material interest." (Hazar, 2000: 4).

The investigation to be conducted on word structure of "playfulness" which is used in the study will clarify the term. The term "-ful-" is an adjective particle which is used since Turkish Language Revolution which is started in Republican Period. (Temir, 1999). The term "-sal" in Turkish, which is the equal of "-ful" in English, gives the meaning of "relevancy, connectivity and belonging" to the names." "Playfulness states everything regarding games. The objective of "-ness" in English, which is the equal one of "-lık in Turkish, is that this particle gives the "qualification, feature" to the names or adjectives by generalizing their meanings." (Zülfikar, 1991: 139). In other words, the term "playfulness" generalizes the term "playful" and adds qualification to this word.

Active games affect physical development and health (respiration, circulation, skeleton, muscle and immune system, etc.), social development (vocations, religions, traditions, language, laws, etc.), emotional development (good – bad, beautiful – ugly, right- wrong, admitting the defeat, protecting the rights, etc.) and mental development (perception, interpreting, decision – making, language, learning, following the rules, strategic planning, etc.) of children. In other words, the children who want to play game more and who play game more have better health, personal characteristics, social adaptation, emotional and mental development.

Thus, playfulness is thought as an indirect indicator in addition to direct assessments which are about whether they have health physic and sportive sub – structure in addition to the ability to fight and their achievements, their imagination and creativity and being a good person. Thus, it is expected that there may be some contributions both in problem solution and in achievements from the aspect of social structure, quality education and progress, sportive abilities.

Material and Method

Development Process of Assessment Instrument

The "Playfulness Scale" which is developed by the researchers was developed in 5 steps. These steps are respectively; creating the articles and preparing the draft scale, gathering the ideas of experts regarding the validity of scope of scale, determining the preliminary test working group and trial of scale, analyzing the data and validity, reliability study. The details regarding the preparation process of the scale are given below:

1. Creating the Articles and preparing the Draft Scale

First of all, because of the reason that developed scale is aimed to assess the attitudes, the dimensions of attitudes, the points to be taken into consideration in creating the expressions of attitudes and the speculative structure regarding the attitude are investigated in detail. In writing the articles of scale, the national and international literature regarding the active game, physical, social and affective development characteristics of the children coming from 10 – 14 age groups are investigated. The statements given in the scale are arranged in a 5 categorized grading method which varies between 5 (Agree) and 1 (Disagree).

2. Validity of Scope

Prepared draft form includes 40 articles which are directed to physical activity. The expert opinion is demanded for the validity of scope of draft form and the technique of survey. In line with these opinions, 7 articles were removed from the scale and a final trial form, which includes 33 articles, was prepared.

3. Determining the Working Group and Implementing the Scale

Trial working form, in which the achievable sampling method was used, was applied on 1008 children who are educated in eight middle schools which are found in Çankaya, Keçiören and Yenimahalle districts of Ankara. In accordance with the literature, factor analysis is evaluated as "good" for 300 people, "very good" for 500 people and "perfect" for 1000 people. (Tavşancıl, 2006: 51). In line with this direction, it can be understood that the number of gathered samplings is in perfect grade.

As it can be seen in Table 1, there are 8 middle schools within the scope of investigation. In dispersion of genders by schools, it can be seen that male students are mostly found in G

(%57,4) and F (%57,1) and they are less in A (%44,1). Female students are most in A (%55,9) and they are less in G (%42,6).

Table 1. Number of Students and Gender Distribution by Schools

Gender		Middle Schools								Total
		A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	
Male / Boy	**f**	52	27	78	69	34	32	35	182	**509**
	%	44,1	47,4	48,8	53,1	48,6	57,1	57,4	51,1	**50,5**
Female / Girl	**f**	66	30	82	61	36	24	26	174	**499**
	%	55,9	52,6	51,3	46,9	51,4	42,9	42,6	48,9	**49,5**
Total	**f**	**118**	**57**	**160**	**130**	**70**	**56**	**61**	**356**	**1008**
	%	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Generally, 509 (50,5%) of 1008 middle – school students are male students and 499 (49,5%) of them are female students.

4. Analyzing the Data

The scale which is prepared as a trial and which is constituted from 33 articles was applied on 1008 people. Data is analyzed with the assistance of SPSS 18.00 packaged software. The articles in the scale are graded as Strongly Agree (5), Agree (4), Doubtful (3), Not Agree (2) and Strongly Disagree (1). In addition, Article 9, 18, 22 and 24 are graded reversely.

5. Validity and Reliability Study

In order to ensure the validity of prepared scale, depending on the factor analysis and the relation between variables, exploratory approach which is one of the factor analysis approaches was used and the varimax techniques was also used in order to determine the high – related articles. (Altunışık, Coşkun, Bayraktaroğlu and Yıldırım, 2005: 115-116). With the aim of determining whether the gathered data is appropriate for factor analysis or not and whether the sampling in the study sufficient or not; Kaiser-MeyerOlkin (KMO) coefficient and BarlettSphericity test are used. In accordance with Kalaycı (2008), on the condition that KMO value is close to 1 and more than 0,5 and on the condition that the Bartlett's test statistic is 0,05 less than significant value, it is seen that data is appropriate for factor analysis.

The article analysis is also made regarding the structure validity of the scale. Article analysis is made in order to develop a consistent scale by determining whether the scale measures any feature free from one another feature or not (Tavşancıl; 2006: 51). In order to determine the assessment power of each article, the article analysis steps which are stated as 1. Depending on the correlation and 2.Depending on consistency (t – test) were used (Trans. from Tezbaşaran, 1997).

In this direction, the articles which are generally 0,30 or more in the article scale correlation are distinguishing the individuals better (Büyüköztürk, 2006: 171) and thus, the relation between the total points of the scale and the grade of each of the articles, in other words the correlation factor (r) 0,30, was accepted as limit value in the research. However, generally, it is stated that the article which are 0,30 or more are distinguishing the individuals better, the articles between 0,20-0,30 can be used when it is deemed obligatory and the article which are less than 0,20 should not be used in the scale (Büyüköztürk, 2006: 171).

One another way in article analysis is the one which depends on the difference between sub – upper group averages which is named as "article analysis depending on inner consistency". In this method, on the condition that an article distinguishes two different groups easily, this article is stated as an article which should be used in the final scale (Tezbaşaran, 1997).

In order to determine whether the articles constituting the Playfulness Scale distinguishes the positive – negative articles from each other, the selectivity powers are calculated. First of all, the grades gathered by the individuals were calculated and ordered starting from the higher one. 27 % of the group starting from the upper side constitutes the upper group (268) and the 27 of the group from the bottom side constitutes the sub – group. It is examined via independent group t – test whether there are any meaningful differences between the groups or not.

In the study, the alpha coefficient method which is also known as Cronbach alpha among inner – consistency analysis which are used as reliability approaches, was used. On the condition that the alpha coefficient is 0.00-0.40, it is stated as the scale is not reliable; on the condition that the alpha coefficient is 0.40-0.60, the reliability of the scale is low; on the condition that the alpha coefficient is 0.60-0.80, the scale is pretty reliable and on the condition that the alpha coefficient is 0.80-1.00, the scale is highly reliable (Kalaycı 2008, Alpar, 2010: 350). Alpha value is taken between 0 and 1 and the acceptable value is demanded as 0.70. However, it is stipulated that this value may be seen as appropriate up to 0.50 (Altunışık et. al., 2005: 115-116). Cronbach Alpha inner – consistency coefficient is calculated separately for the scale of which factor analysis is made and for each of the factors found in the scale.

The reliability and validity analysis which are made by taking all the points stated above regarding the development of scale are given below.

Findings

Article Analysis

The Article Analysis depending on the correlation coefficients between the grade of a point partaking in developed scale and the scale grade consisted from the total of all the article grades and depending on the sub – upper group average (independent group t – test) by taking the 27% of the upper group (268 people) and 27% of the sub group (268 people) was made and the results of this analysis are given in Table 2.

Table 2. Article Analysis Results

Article No	***1***	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***9***	***10***
Correlation Coefficient **(r)**	0,62	0,53	0,30	0,38	0,5	0,44	0,45	0,31	0,31	0,37
Difference of the Averages (**t**)	16,2	17,3	11,6	16,8	18,8	8,85	9,41	15,7	9,64	16,3
Article No	***11***	***12***	***13***	***14***	***15***	***16***	***17***	***18***	***19***	***20***
Correlation Coefficient **(r)**	0,46	0,40	0,13*	0,10*	0,47	0,04	0,57	0,49	0,04*	0,32
Difference of the Averages (**t**)	18,5	9,68	0,22*	0,42*	14,9	2,88	25,7	21,5	2,42*	13,9
Article No	***21***	***22***	***23***	***24***	***25***	***26***	***27***	***28***	***29***	***30***
Correlation Coefficient **(r)**	0,38	0,30	0,33	0,39	0,38	0,31	0,47	0,19*	0,17*	0,30
Difference of the Averages (**t**)	9,03	0,38*	8,02	18,7	11,8	11,9	14,2	3,45	0,93*	***0,82****
Article No	***31***	***32***	***33***							
Correlation Coefficient **(r)**	0,46	0,62	0,55							

Difference of the Averages (**t)**	15,00	15,9	22,8

*p>.05,*r<0,30

In accordance with the Table 2, it was observed that the correlation coefficients of Article 13, 14 and 29 partaking in the scale are lower than 0.30 which is accepted as limit value and the meaningfulness level of the mentioned articles is also more than 01 in the results of independent groups t – test which is made for article analysis depending on the difference of the average of sub – upper group.

In the analysis made for article analysis, the decision regarding whether it is necessary to remove Article 16, 19 and 28, which are meaningful in the analysis made in line with the sub – upper group difference of the averages but of which correlation coefficient are low in the result of article scale correlation analysis, was taken in line with the changing seen in alpha values of 30 articles creating the scale. In the alpha values similar to the results of article – scale correlation; it is seen that Article 16 and 19 decreases the reliability of the scale and the inner – consistency of the scale is increasing when these two article are removed from the scope and thus, these two articles were removed from the scope of the scale. However, because the reason that Article 22, 28 and 30 have high correlation coefficient and they increase the reliability of the scale, the decision regarding the removal of these articles was taken in line with these points. Thus, the article grades of the articles included in the scale and the correlation coefficients between the article grade and scale grade are between 0,30 and 0,62.

The other 28 Articles are more than 0, 30, which is the limit value, and they are also meaningful. Article selectivity powers are meaningful and high; thus, this means that the scale distinguishes the negative and positive attitudes from each other.

In the result of conducted steps, the number of articles which was 33 at the first was decreased to 28 and the factor analysis step directed to the structure validity of the scale is applied.

Factor Analysis

Before starting the exploratory factor analysis process for the structure validity, the Kaiser-Mayer-Olkin (KMO) Sampling Assessment and Barlett's Test were made with the aim of testing whether the data set is appropriate and meaningful or not. Results of KMO sampling assessment and Barlett's test are given in Table 3.

Table 3. Results of Kaiser-Mayer-Olkin (KMO) and Barlett's Test

Kaiser-Mayer-Olkin (KMO) Adequacy of Sampling Assessment Value =,921
Barlett Test Approximate Ki-Square Value = 8412,009 sd = 351**p =0 .000**

It is seen that the KMO value is very high 0.921> 0.50 and the Barlett test is meaningful p=0,00<0,05. Depending on the values given above, it is stated that conducting the factor analysis for the structure validity of playfulness scale data is appropriate.

Table 4. Results of Factor Analysis (Reversed Fundamental Component Analysis)

ARTICLE	COMMON VARIANCE	LOAD VALUES AFTER TRANSFORMATION				
		FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5

M.20	0,522	0,696				
M.27	0,565	0,690				
M.10	0,498	0,685				
M.14	0,552	0,656				
M.16	0,482	0,607				
M.21	0,534	0,584				
M.15	0,519	0,567				
M.26	0,604		0,660			
M.7	0,626		0,646			
M.17	0,509		0,601			
M.12	0,500		0,598			
M.6	0,598		0,598			
M.25	0,456		0,591			
M.22	0,422		0,579			
M.19	0,428		0,548			
M.1	0,586		0,530			
M.23	0,437		0,521			
M.2	0,602			0,722		
M.13	0,501			0,645		
M.5	0,417			0,531		
M.18	0,629				0,757	
M.24	0,585				0,729	
M.9	0,306				0,445	
M.3	0,536					0,710
M.8	0,548					0,667
M.4	0,452					0,476
M.11	0,432					0,460

As a result of factor analysis which is applied on all the articles partaking in the final stage, Article 28 of which correlation is low in article analysis was removed because of being in more than one article and article 22 and article 30 are decided to be given in the scale because of the reason that they have high factor load and the reliability of the scale is decreasing without them. The articles left in the scale are re-ordered.

Table 5. Articles Removed From the Scale

13.	I want to play games with the ones which have the same gender with me.
14.	I fight with my friend during the game.
16.	I don't play the game that I don't like.
19.	I delay my duties in order to play games.
28.	I get tired because of playing games.
29.	I don't like to follow the rules when I play games.

Analysis was made on 27 Articles and it was seen that the load values of each of the articles is more than 0,30 and the scale has a 5 – factored structure.

Table 6. First Sub – Factor – Game Passion

20.	I want to play game even when I am ill.
27.	I want to play game every time.
10.	I want to play game when I get up.
14.	I am not satisfied with playing games.

16.	I pass most of my time by playing game.
21.	I play game outside event the weather conditions are not well.
15.	I dream of playing games even when I am playing game.

As a result of applied analysis, seven articles of which load values are between 0,567-0,696 created the first factor and this is named as "Game Passion".

Table 7. Second Sub – Factor – Social Adaptation

26.	I enjoy playing games.
7.	I share my toys with my friends.
17.	I play games with my friends instead of playing alone.
12.	I enjoy playing games with my peers.
6.	I follow the rules of games.
25.	My day goes well when I play game.
22.	I enjoy playing games in game saloons.
19.	I get sad when one of my friends is injured during game.
1.	I like playing game.
23.	The term "game" makes me remember my friends.

The second factor consists of ten articles. The load values of this factor which is names as "Social Adaptation" is between 0,521 and 0,660.

Table 8. Third Factor – The Desire to Play Game

2.	I get excited when I play game.
5.	I play game instead of watching film on TV.
13.	I get excited when I learn a new game.

The third factor is names as "The Desire to Play Game". The number of articles included in this factor is three and the load values of articles in this factor are between 0,531 and 0,722.

Table 9. Fourth Sub – Factor –The Will to Win

9.	I get bored during game.
18.	I left the game when I lost the game.
24.	I play the game only to win.

The fourth factor of which article load values are between 0,445 and 0,757 includes three articles. The content of the articles were investigated and the fourth factor is named as "the Will to Win".

Table 10. The Fifth Sub Factor –Taking Risk

3.	I do not afraid of being injured during the game.
4.	I go on playing game even when I am hungry.
8.	I do not pay attention to keeping the clothes clean during game.
11.	I do not notice that I got tired during the game.

The fifth factor includes four articles and the article load values are between 0,460 and 0,710. The fifth factor of the scale is named as "Taking Risk".

When the Table 11 which is given below is evaluated, the first factor of the scale states 24,492 % of the total variance regarding the scale and the second factor stated 13,747% of the scale. The third factor states 4,967% of the total variance and the fourth factor states an close value with 4,263 %. The fifth factor states 3,822% of total variance. Total variance rates stated by five factors emerged as a result of factor analysis made for playfulness scale is 51,291.

Table 11. Variance Rates Stated by the Factors

Factor	***Stated Variance***
1. Game Passion	24,492
2. Social Adaptation	13,747
3.Desire to Play Game	4,967
4. Will to Win	4,263
5. Taking Risk	3,822
Total	51,291

In order to determine the relation between factors, the correlation coefficient between the factors constituting the scale is calculated. The correlation coefficient between the factors is as given in the Table 12.

Table 12. Correlation Coefficient between the Factors

Factors	**1**	**2**	**3**	**4**	**5**
1	1				
2	28*	1			
3	46*	31*	1		
4	14*	18*	09*	1	
5	41*	27*	32*	10*	1

It is seen in Table 12 that the correlation coefficients between the factors is low. In accordance with this situation, it can be said that the factors are different from each other by the features which assessed by them.

With the aim of determining the reliability level of the scale, Cronbach Alpha value was used. As a result of conducted step, the alpha value for 27 Article of the scale is 82. The scale which is prepared in line with this value is highly reliable. The alpha values by factors are calculated as 73 for the first factor, 82 for the second factor, 64 for the third factor, 61 for the fourth factor and 63 for the fifth factor.

Discussion and Conclusion

In the conducted study, the Playfulness Scale directed to assessing the attitudes against playing the games requiring physical activity is developed. In development process of the scale, the steps such as creating the articles, scope validity, preparing the draft from, applying the form on the work group and validity and reliability transactions were made. The study was conducted in Ankara with the participation of 1008 middle – school students of which ages are between 10 and 14. In order to determine the assessment power of each article, the article analysis steps which are stated as 1. Depending on the correlation and 2.Depending on consistency (t – test) were used The correlation coefficients of the articles remaining in the scale at the end of conducted transactions are between 0,30 and 0,62. In the article analysis directed to inner – consistency term, it was seen that these 27 articles distinguish the negative

and positive attitudes from each other; in other words, the selectivity power regarding the articles for all the test article in 27% sub and upper group averages is 0,05 ($p<0,05$) meaningful.

For the validity of structure, in order to determine whether the data is appropriate for facto analysis or not and in order to determine whether the sampling in the study is enough or not, Kaiser-Meyer-Olkin (KMO) coefficient and Barlett Sphericity test were used and it was stated that the sampling is sufficient and the factor analysis was conducted. It is determined that the Playfulness Scale is five – sub factored and the contents of the articles within the scope of these factors are investigated and they are named as "Game Passion, Social Adaptation, The Desire to Play Game, the will to Win and Taking Risk". The total stated variance of these five factors is 51,291 and this is an acceptable level.

With the aim of determining the reliability level of the scale, Cronbach Alpha value was used and it was determined that the alpha value directed to all the scale is 0, 82 and the scale is found highly reliable.

As a conclusion; developed "Playfulness Scale" is a valid and reliable assessment instrument in determining the attitudes of middle – school children against playing the games requiring physical activity.

As a result of conducted analysis and transactions, the norm which is given below is created regarding the playfulness level of the children of whom ages are between 10 and 14.

Table 13. Playfulness Levels of Children of Whom Ages are Between 10 and 14

Playfulness Level	**Grade Range**
Too Weak	1.00- 1.79
Weak	1.80- 2.59
Medium	2.60- 3.39
Good	3.40- 4.19
Very Good	4.20- 5.00

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THE ATTITUDES OF 10-14 YEARS OLD CHILDREN AGAINST THE ACT OF PLAYING GAMES REQUIRING PHYSICAL ACTIVITY

(PLAYFULNESS AMONG 10-14 YEARS OLD CHILDREN)

Dear Young Ones,

This scale is prepared with the aim of determining the desire and will to play the active games which require physical activity. Passive games (computer or table games) are not included in this study. Thus, please answer the questions by taking the games which require physical struggle and your will / desire to play such games into consideration. Please mark (X) the answer which is best for you among the answers: Strongly Disagree, Disagree, Doubtful, Agree, Strongly Agree. Please pay attention that there is no unmarked statement left. Thanks for your contribution.

City and District : **School :** **Age :** **Gender :**	**STRONGLY DISAGREE (1)**	**DISAGREE (2)**	**DOUBTFUL (3)**	**AGREE (4)**	**STRONGLY AGREE (5)**
Statements					
1. I like playing games.					
2. I get excited when I play game.					
3. I am not afraid of being injured during game.					
4. I go on playing game even when I am hungry.					
5. I play game instead of watching film on TV.					
6. I follow the rules of a game.					
7. I share my toys with my friends.					
8 I do not pay attention to keep my clothes clean.					
9. I get bored during any game.					
10. I want to play game when I get up.					
11. I do not notice that I get tired during the game.					
12. I enjoy playing games with my peers.					
13. I get excited when I learn a new game.					
14. I am not satisfied with playing games.					
15. I dream of playing games even when I am playing games.					
16. I spent the bigger part of my time with playing games.					
17. I play games with my friends instead of playing alone.					
18. I stop playing the game when I lost the game.					
19. I become sad when one of my friends get injured during the game.					
20. I want to play game even when I am ill.					
21. I play game outside even when the weather conditions are not well.					
22. I enjoy playing games in game saloons.					
23. The term “game” makes me remember my friends.					

24. I play the game only to win.					
25. I day goes well when I play game.					
26. I enjoy playing game.					
27. I want to play game all the time.					