

DETERMINATION OF THE VOLLEYBALL PLAYERS' PROBLEM SOLVING SKILLS IN TERMS OF SOME VARIABLES

Sefa Sahan BIROL, Elif USTUN, Veysel TEMEL

Karamanoglu Mehmetbey University, Physical Education and Sports High School, Karaman.

ABSTRACT: Purpose: Done with the aim of revealing whether problem solving skills differ in terms of different variables or not.

Methods: Research group consisted of 50 male and 59 female players who played at youth volleyball league in Konya city center. In this study, "Problem Solving Skills Inventory" developed by Heppner and Petersen (1982) and the adaptation work of this scale to Turkish was conducted by Şahin, Şahin and Heppner (1993) was used as data collection tool. The unique Kolmogorov Smirnov Test was used in order to determine whether measures were suitable for normal dispersion or not. T-test and One Way Anova (one way variance analysis) were used on analyzing and interpreting of data since it was a normal dispersion for impetuous approach, from sub dimensions of the problem solving skills, and tukey test was used in order to determine the differences between groups and meaningfulness was determined as $P > 0,05$ and also, Kruskal Wallis-H test and Mann Whitney-U test were used on analyzing and evaluating the data for Total Point skills and considering, avoidant, Evaluator, self-confidence and planned approaches, from sub dimensions of the Problem Solving Skills.

Findings: Problem solving total point average of the athletes participated in the research with (Mean=95,1651), impetuous approach point average with (Mean=31,0183), considering approach point average with (Mean=13,6514), avoidant approach point average with (Mean=11,6697), Evaluator approach point average with (Mean=9,0000), Self-confidence approach point average with (Mean=19,4128) and planned approach point average with (Mean=10,4128), from sub dimensions of the Problem Solving Skills, were low.

Results: Meaningful difference was found in terms of personal characteristic on problem solving total and sub dimensions of the problem solving skills of participants 'team which they play at', 'gender', 'education' and "sport beginning age" and 'family member number' variables whereas meaningful difference was not found on "parents education", "parents occupation", "family income" and "place in which they spend most of their life" variables.

Key Words: Problem Solving, Athletes, Volleyball, University

INTRODUCTION

Life could consider as a process of problem solving. From birth to death human-being encounters with lots of problems regardless its quality and quantity. Solving this problems and methods of solving problems become effective on adaptation to life and life balance. On Eric Ericson's theory about psychosocial development states that "Problems make people mature; individuals who have reached successful identity status, are the people who have confronted and solved problems in their lives." According to Ericson, what really matters is to consider problems as a development opportunity [4].

Individuals may react in different ways to problems. Among these reactions; there are different ways such as; to find a good solution to problem, in other words to decide; to ignore problem; to anticipate the problem disappear; to wait someone to find a solution; to postpone

deciding and to put problem on someone's shoulders. While anticipated reactions to problems could vary depending on the situation and individual, 'finding a good solution to problem' namely solving the problem is thought to be the healthiest reaction in most cases [15].

Thus, solving a problem which is a complex mental activity composed of auperior cognitive abilities and activities; visuality, connotation, abstraction, comprehension, reasoning, analysis, synthesis, generalisation is a complex combination of abilities with the components such as cognitive, behavioral and attitudinal [2].

According to [1] evaluation in problem solving process occurs after the action is taken and this is arranged for changing the real result . If this process does not occur, individuals could insist on an indecisive performance, instead of discovering rational solutions for their

problems. Briefly, success on problem solving depends on the true definition of problem at first. In addition to true definition of problem, one should acquire adequate knowledge and formulate multiple behaviours that possibly puzzle out the problem and start with option assumed as a way to best solution. Available options are applied and if it works after evaluation this option is continued to conduct, otherwise another option is applied.

The problem is the difference between his current situation and his desired situation. This difference means a problem as a result of various obstacle to individuals who aim to reach their goals. According to this description, the same situation could a problem for an individual while it is not for another person. The reason of considering this as a problem is the following grounds:

- Innovation or excentricity ("I don't know what to do.")
- Hardship ("This is too complicated.")
- Paradoxical targets ("I don't know which one to choose.")
- Deficiency of ability ("I can't do it, because I don't know how to do.")
- Deficiency of source ("I don't have enough time to deal with it.")
- Uncertainty ("What's going on?")
- Emotional Distress ("I prefer not to do anything, because I am afraid of failure after I try.") [17].

Individuals face with small or big problems in different ways, in certain terms of their lives. Reactions to problems depend on individual. People endeavour solving same problem with different approach and some may achieve, some may fail. Problems' area is not only limited to mathematics. Life needs solutions for a set of problems. Problem emerges when individual is hindered from reaching his target [6].

One of the fields of problems that individual encounters in his life is the interpersonal problems. "Interpersonal problem is defined as at least one of the interacting parties is aware of the difference between current interaction style and ideal style and as a consequence he feels the tension, attempts to suppress however inhibits from doing it. Solving interpersonal problem could be expressed as cognitive and behavioral process that include attempts for suppressing the tension arising from this interpersonal problem, and awareness of difference between current situation and

desired situation in interpersonal relations [18].

[3] suggests that problem solving process is affected by factors such as creative Considering, intelligence, emotions, will and taking actions, needs, targets, values, abilities, habits (past experiences) and attitudes[3]. These factors form as a result of personal perception, past experiences and given meaning to them. Hence, it could affect what individual perceives about problem and how he solves it. Generally, first perception would not be the plain truth in problem case. Problem solving process, is affected by personal perception. Factors are affected by problem solving abilities are given below:

- Self-confidence
- Age
- Social learning and take someone as a model
- Individual differences
- Socio-economic level
- Sense of responsibility
- Knowledge about personal problems
- Emotions
- Past and life experiences
- Interaction
- Personality [14]

It turns out that people who can not solve their problems effectively are more anxious and insecure than people who have ability to solve their problems effectively [12,13,17]. Besides, effectless problem solving stimulates stress and psychological disharmony [9].

In a case of a problem and a case to overcome, individual uses all his sources, goes through previously obtained datas with the aim of obtaining some opinions and hints to solve problem. Success in problem solving is subject to problem solving ability [1].

Problem solving ability is a virtual lifetime ability and it includes all cases from basic to complex in lifetime. Problems in one's life, sometimes can be solved with easy actions, sometimes with concentrated Considering and sometimes with one's abilities [10]. It is also valid for people who are interested in sport. Athlete should decide his location and move regarding to his opponent's location and move and also his teammate's location and move on field, in hall, in boxing ring, on mat [14].

METHOD

This chapter involves information about the model of research, the research group, the collection of data, data collection tools and the operations which were conducted in the process of analysis of the data.

The Model of Research

Research is a descriptive work. Descriptive statistics, a collection of numerical values of a variable are statistical operations that allow description and presentation [5].

The Research Group

The research group involves 109 athletes of whom consists 50 male and 59 female players in Youth League of the city center of Konya.

The Collection of Data

First of all, current information related to the aim of the research are given systematically with scanning the literature. Therefore, a theoretical framework on the subject was created. Secondly, the Problem Solving Inventory (PSI) which was developed by [11], (Problem Solving Inventory, Form-A (PSA-A) was applied over the participants surveyed through random sampling.

The Data Collection Tools

Data collection tools that required achieving the defined objectives related to the research are listed below in order:

The Personal Information Form

Information form which consists 11 questions, were prepared by the researcher to collect information about personal characteristics of 109 players who played in the Youth League of the city center of Konya and in order to create independent variables about the subject of the research.

Problem Solving Inventory (PSI)

Problem solving inventory (PSI) was developed with the purpose of to determine the dimensions of the problem-solving methods right along with the competence to solve the people's problems as well as how he was perceived by taking into consideration some problem-solving steps such as "general

orientation" "description of the problem,"alternative production", "decision-making" and "evaluation" which are resulting from various researches by [11,20]. The translation studies within the framework of the Turkish version studies of the scale was finished by [8,22, 21] orderly; and validity and reliability studies as finished by Taylan (1990), Şahin, Şahin and P.P. Heppner (1993) and Çam (1995). As a result of the analysis of factor that is conducted by Şahin and Heppner (1993), it is indicated that the scale is formed by 6 factors such as 1. Impetuous Approach: 13, 14, 15, 17, 21, 25, 26, 30 and 32. items, $\alpha = 0.78$, 2. Considering Approach: 18, 20, 31, 33 or 35 items, $\alpha = 0.76$, 3. Avoidant Approach: 1, 2, 3 and 4 items, $\alpha = 0.74$, 4. Evaluator Approach: 6, 7 and 8. items, $\alpha = 0.69$, 5. Self-assured Approach: 5, 11, 23, 24, 27, 28 and 34 items, $\alpha = 0.64$, Planned Approach: 10, 12, 16 and 19 items, $\alpha = 0.59$. The answers given is evaluated with scores ranging from 1 to 6. In scoring, 9, 22 and 29. items are kept off the scoring. Scoring is done through 32 items. 1, 2, 3, 4, 11, 13, 14, 15, 17, 21, 25, 26, 30 and 34. items are scored reversely. The range of points that are taken from inventory is between 32-192. The highness of the total score from the scale indicates problem-solving skills of individuals as inadequate. In decrease in the total score on the scale, the perception of individual's problem-solving skills is considered to be positive. While the scale aims to measure problem-solving skills of physical education and sports teachers. The reliability coefficient of internal consistency (Cronbach alpha) was found as 0.72.

Data Analysis

While the solution and interpretation of data, with the usage of Kruskal-Wallis H and Mann-Whitney U test, significance was estimated as $P < 0,05$. In the evaluation and the calculation of the data, SPSS 21 (Statistical package for social sciences) packaged program was used.

FINDINGS**Table 1.** Sub-Dimensions Of Participants in General Problem Solving and The Results of The Total Score's Average and Standard Deviation Values

	N	Mean	Ss	Min	Max	The lowest and the highest score that can be obtained from the scale
Impetuous Approach	109	31,0183	5,25460	22,00	49,00	9-54
Considering Approach	109	13,6514	5,10515	5,00	29,00	5-30
Avoidant Approach	109	11,6697	5,30209	5,00	24,00	4-24
Evaluator Approach	109	9,0000	2,71143	3,00	16,00	3-18
Self-assured Approach	109	19,4128	5,56479	9,00	34,00	7-42
Planned Approach	109	10,4128	4,12358	4,00	22,00	4-24
Total Point	109	95,1651	20,36178	60,00	162,00	32-192

In Table 1, it is indicated that, the point average of problem-solving (Avg. = 95.1651), the point average of impetuous approach which is the sub-dimension of problem-solving skills (Avg. = 31.0183), the point average of considering approach (Avg. = 13.6514), the point average of avoidant approach (Avg. = 11.6697), the point average of evaluator approach (Avg. = 9.00000), the point average of self-assured approach (Avg. = 19.4128), and the point average of planned approach (Avg. = 10.4128) are low.

Table 2. The Total and Sub-Dimension Results of Mann Whitney U Test According to The Participants Genders Related to Problem-Solving

		N	Mean Rank	Rank Sum	U	Z	P
Impetuous Approach	Female	50	43,44	2172,00	897,000	-3,528	,000
	Male	59	64,80	3823,00			
Considering Approach	Female	50	46,66	2333,00	1058,000	-2,548	,011
	Male	59	62,07	3662,00			
Avoidant Approach	Female	50	43,13	2156,50	881,500	-3,655	,000
	Male	59	65,06	3838,50			
Evaluator Approach	Female	50	56,67	2833,50	1391,500	-,517	,030
	Male	59	53,58	3161,50			
Self-assured Approach	Female	50	42,15	2107,50	832,500	-3,927	,000
	Male	59	65,89	3887,50			
Planned Approach	Male	50	45,49	2274,50	999,500	-2,948	,003
	Female	59	63,06	3720,50			
Total Point	Male	50	40,70	2035,00	760,000	-4,354	,000
	Female	59	67,12	3960,00			

In Table 2, it was examined the total and sub-dimension results with Mann Whitney U test according to the participants genders related to problem-solving. In the study results, impetuous Approach (U: 897.000 P <0.05) considering approach (U: 1058.000 P <0.05) avoidant approach (U: 881.500 P <0.05) evaluator approach (U: 897.000 P <0.05) self-assured approach (U: 832.500 P <0.05) planned approach (U: 999.500 P <0.05) total point (U: 760,000 P <0.05) differences between sub-dimensions was founded substantive.

Table 3. According to The Team Variables of Participants, Kruskal-Wallis Test Results for The Total and Sub-Dimensions in Problem Solving

		N	Mean Rank	Sd	X ²	P	Meaningful Differences
Impetuous Approach	Güneş Spor (female)	13	40,19	6	8,716	,190	-----
	Konya Fener (female)	14	41,57				
	Selçuklu belediye (female)	14	36,71				
	Gençlik spor (female)	13	45,35				
	Konya spor (male)	12	60,54				
	Konya büyükşehir (male)	14	53,11				
	Gençlik spor (male)	14	56,21				
Considering Approach	Güneş spor (female)	13	45,23	6	6,588	,361	-----
	Konya fener (female)	14	48,07				
	Selçuklu belediye (female)	14	34,07				
	Gençlik spor (female)	13	46,27				
	Konya spor (male)	12	51,38				
	Konya büyükşehir (male)	14	48,21				
	Gençlik spor (male)	14	59,57				
Avoidant Approach	Güneş spor (female)	13	28,15	6	16,687	,011*	7-1
	Konya fener (female)	14	48,61				
	Selçuklu belediye (female)	14	35,43				
	Gençlik spor (female)	13	51,42				
	Konya spor (male)	12	49,08				
	Konya büyükşehir (male)	14	54,14				
	Gençlik spor (male)	14	64,79				
Evaluator Approach	Güneş spor (female)	13	56,58	6	3,434	,753	-----
	Konya fener (female)	14	43,79				
	Selçuklu belediye (female)	14	51,82				
	Gençlik spor (female)	13	50,38				
	Konya spor (male)	12	41,96				
	Konya büyükşehir (male)	14	42,18				
	Gençlik spor (male)	14	45,86				
Self-assured Approach	Güneş spor (female)	13	32,92	6	20,138	,003*	7-3
	Konya fener (female)	14	49,14				
	Selçuklu belediye (female)	14	26,07				
	Gençlik spor (female)	13	55,88				
	Konya spor (male)	12	52,88				
	Konya büyükşehir (male)	14	51,36				
	Gençlik spor (male)	14	64,57				
Planned	Güneş spor (female)	13	32,31	6	12,709	,048*	7-1

Approach	Konya fener (female)	14	46,89	6	16,616	,011*	7-3
	Selçuklu belediye (female)	14	33,96				
	Gençlik spor (female)	13	55,65				
	Konya spor (male)	12	52,75				
	Konya büyükşehir (male)	14	52,25				
Total Point	Gençlik spor (male)	14	58,93				
	Güneş spor (female)	13	34,77				
	Konya fener (female)	14	45,54				
	Selçuklu belediye (female)	14	29,11				
	Gençlik spor (female)	13	51,77				
	Konya spor (male)	12	54,38				
	Konya büyükşehir (male)	14	52,32				
	Gençlik spor (male)	14	65,00				

*p<0,05

The sub-dimension of problem-solving for volleyball player and total score according to team variables and whether it became different or not were examined with the Kruskal Wallis test in Table 3. In the study result, there isn't any significant division among the sub-dimension of Impetuous, Considering and evaluator approach, however, significant division was found according to avoidant approach ($X^2 = 16,687$ $P < 0,05$), self-assured approach ($X^2 = 20,138$ $P < 0,05$), planned approach ($X^2 = 12,709$ $P < 0,05$) and total point approach ($X^2 = 16,616$ $P < 0,05$).

Table 4. The Result of Kruskal-Wallis Test Related To The Factor For Participant's Starting Gym According to Problem-Solving Tatl and Sub-Dimensions.

		N	Mean Rank	Sd	X ²	P	Meanful Differences
Impetuous Approach	5-7	11	37,64	2	5,959	,051	-----
	8-10	31	49,95				
	11-13	67	60,19				
Considering Approach	5-7	11	33,50	2	6,174	,046	3-1
	8-10	31	54,24				
	11-13	67	58,88				
Avoidant Approach	5-7	11	25,05	2	13,366	,001	3-1
	8-10	31	51,65				
	11-13	67	61,47				
Evaluator Approach	5-7	11	64,23	2	1,307	,520	3-1
	8-10	31	56,15				
	11-13	67	52,96				
Self-assured Approach	5-7	11	24,45	2	13,970	,001	3-1
	8-10	31	51,15				
	11-13	67	61,80				
Planned Approach	5-7	11	36,55	2	6,274	,043	3-1
	8-10	31	50,66				
	11-13	67	60,04				
Total Point	5-7	11	24,86	2	14,524	,001	3-1
	8-10	31	49,77				
	11-13	67	62,37				

*p<0,05

The sub-dimension of problem-solving for volleyball player and total score according to their gym start and whether it became different or not related to their factor were examined with the Kurskal Walis test in Table 4. In the study result, there isn't any significant division among the sub-dimension of Impetuous approach, however, significant division was found according to considering approach ($X^2 = 6,174 P < 0.05$), avoidant approach ($X^2 = 13,366 P < 0.05$), evaluator approach ($X^2 = 1,307 P < 0.05$), self-assured approach ($X^2 = 13,970 P < 0.05$), planned approach ($X^2 = 6,274 P < 0.05$) and total point approach ($X^2 = 14,524 P < 0.05$).

Table 5. The Result of Kruskal-Wallis Test Related to The Factor for Participant's Education Status According to Problem-Solving Total and Sub-Dimensions.

		N	Mean Rank	Sd	X ²	P	Meaningful Differences
Impetuous Approach	High school	48	64,60	2	12,459	,002*	2-3
	University	11	65,64				
	Other	50	43,44				
Considering Approach	High school	48	62,15	2	6,492	,039*	3-1
	University	11	61,73				
	Other	50	46,66				
Avoidant Approach	High school	48	61,36	2	16,964	,000*	2-3
	University	11	81,18				
	Other	50	43,13				
Evaluator Approach	High school	48	52,66	2	,498	,779	-----
	University	11	57,64				
	Other	50	56,67				
Self-assured Approach	High school	48	66,28	2	15,457	,000*	3-1
	University	11	64,18				
	Other	50	42,15				
Planned Approach	High school	48	64,36	2	9,149	,010*	3-1
	University	11	57,36				
	Other	50	45,49				
Total Point	High school	48	65,63	2	19,534	,000*	2-3
	University	11	73,64				
	Other	50	40,70				

The sub-dimension of problem-solving for volleyball player and total score according to their education status and whether it became different or not related to this factor were examined with the Kurskal Walis test in Table 5. In the study result, there isn't any significant division among the sub-dimension of Evaluator approach, however, significant division was found according to considering approach ($X^2 = 6,492 P < 0.05$), avoidant approach ($X^2 = 16,964 P < 0.05$), impetuous approach ($X^2 = 12,459 P < 0.05$), self-assured approach ($X^2 = 15,457 P < 0.05$), planned approach ($X^2 = 9,149 P < 0.05$) and total point approach ($X^2 = 19,534 P < 0.05$).

Table 6. The Result of Kruskal-Wallis Test Related to The Factor For Number Of Participant's Family Member According to Problem-Solving Total and Sub-Dimensions.

		N	Mean rank	Sd	X ²	P	Meaningful Differences
Impetuous Approach	3	14	53,86	3	8,836	,032*	3-2
	4	34	43,10				
	5	37	58,58				
	6	24	67,00				

Considering Approach	3	14	50,14	3	1,254	,740	-----
	4	34	52,22				
	5	37	56,15				
	6	24	60,00				
Avoidant Approach	3	14	52,32	3	3,584	,310	-----
	4	34	48,43				
	5	37	56,35				
	6	24	63,79				
Evaluator Approach	3	14	60,54	3	2,945	,400	-----
	4	34	55,87				
	5	37	48,42				
	6	24	60,69				
Self-assured Approach	3	14	47,79	3	3,206	,361	-----
	4	34	50,90				
	5	37	55,81				
	6	24	63,77				
Planned Approach	3	14	40,93	3	5,058	,168	-----
	4	34	55,15				
	5	37	54,18				
	6	24	64,27				
Total Point	3	14	51,82	3	5,010	,171	-----
	4	34	47,38				
	5	37	56,16				
	6	24	65,85				

*p<0,05

The sub-dimension of problem-solving for volleyball player and total score according to their number of family member and whether it became different or not related to this factor were examined with the Kurskal Walis test in Table 6. In the study result, there isn't any significant division among the sub-dimension of evaluator approach, considering approach, avoidant approach, self-assured approach, planned approach and total score factor however, significant division was found according to impetuous approach ($X^2 = 8,836$ $P < 0.05$).

THE DISCUSSION OF RESULTS

It was indicated that mean total score of problem-solving, the point average of the sub-dimensions of problem-solving skill as, Impetuous, Considering avoidant, Evaluator, self-assured and planned approach are low. According to gender factor, Impetuous, Considering, avoidant, Evaluator, self-assured, planned approach in total score has been identified as significant in all sub-dimensions. It was thought that in overcoming the problems faced by women and men, the perception of the problem, acceptance and have different perceptions to reach a solution. These results are in line with the work that has done by [24].

According to the factor of the team which they play volleyball; the ratio of volleyball player in Gençlik Spor Erkek team is higher than the volleyball players who play in Güneş Spor Kız team in the level of sub-dimension of avoidant approach. At a level of the sub-dimension of

the self-assured approach, it was indicated that the ratio of the volleyball male players in Gençlik Spor is higher than the female players in Selçuklu Belediye Kız. At a level of the sub-dimension of the planned approach, it was determined that the ratio of volleyball player in Gençlik Spor Erkek team is higher than the volleyball players who play in Güneş Spor Kız team. And at a level of the sub-dimension of the total score, the ratio of volleyball player in Gençlik Spor Erkek team is higher than the volleyball players who play in Selçuklu Belediye Kız team. The reason of male player's attitude, such as self-confidence that is showed in the case of a problem and to be assured as well as ignoring the problems they face while coping with a problem, the behavior of not being aware of the problem might differ according to their position within the team and gender.

According to the starting age of volleyball factors, it is shown that in the sub-dimension of Considering approach, avoidant approach, Evaluator approach, self-assured approach, planned approach and total score, the rate for starting sport between the ages 11-13 is higher than the age group of 5-7. It can be said that the ones that have older age are more adequate according to event detection, monitoring, and evaluation. The finding from the study of [23] are showing similarities.

According to the factor of education status, while the rate of Impetuous approach, avoidant approach and total score who has chosen the selection of "other" is higher than who has chosen the selection of "university", self-assured and planned approach at the level of the ratio of the other options, educational level as other is higher than the option "high school". By taking into consideration, the thing that is expected from education is the necessity of Considering versatile in the problem-solving for individuals, we can express that the level of education could affect the size of approaches against problems. The finding from the study of [19] are showing similarities. According to the factor of the number of family members, while the rate of Impetuous approach with a number of 5 members is higher than with a number of 4 members. We can say that, according to the family size, the problem-solving skills are different, the solving process might be late in case of a large number of family members, and because of that, in the face of the problems encountered, the attitude of moving towards without taking into account different factors is displayed.

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