

## The Relationship between Resilience and the Perceived Importance of Match Outcome for Volleyball Players

Patsiaouras Asterios\*

University of Thessaly / T.E.F.A.A., Karies, Trikala, Greece

*\*Corresponding Author: Patsiaouras Asterios, University of Thessaly / T.E.F.A.A., Karies, Trikala, Greece.*

### ABSTRACT

The purpose of this study was to investigate the relationship between resilience and the perceived importance of the match outcome of volleyball players according to gender and team category. Participants were 78 males and females volleyball players from high level Greek volleyball categories (B' category, Pre-League, 1<sup>st</sup> League). The Self Evaluation Resilience test, and the importance-crucial match evaluation questions was used for the study. Data were analyzed with SPSS 23.0 using one-way ANOVA with post hoc Bonferroni adjustment test. Results showed statistically significant differences between the males and females volleyball players in variable "forming relationships" in favor of females volleyball players. Statistically significant differences were observed too with reference to team players category between B' category and Pre-league and B' category and 1<sup>st</sup> League volleyball players in variable "importance-crucial of match" in favor of the players from higher level. It emerged that coaches and volleyball players should recognize that female's volleyball players focused more in forming relationships and volleyball players from higher level players pay notice more the importance and the crucial of the match comparing to lower category team volleyball players. Additionally, the results of the study are briefly discussed.

**Keywords:** Volleyball players, resilience, match importance, team category Training load should be increased in step form.

### INTRODUCTION

In team sports, the term "performance indicator" is used to refer to a variable, usually the execution of a technical element, that defines condition and leads to a successful action [8].

In volleyball sport, discrete performance indicators (i.e., service, attacks, block etc.) have specifically been used to develop models explaining competition outcome in the match [11, 15, 17, 20]. This information can then potentially be used to make assumptions about which characteristics of competition are typically most important in achieving success and to win or lose a match [16, 18, 23]. However, such approaches have been criticized on the grounds that, neglect to consider the spatio-temporal components of sporting competitions, such as the location (home-away matches), the sequences of possession between multiple players and the dynamic, interdependent relationships that exist within a team [3].

Each team sport contains a unique set of constraints. For example, in volleyball due to regulations players are not allowed to touch the

ball twice in a row or the Libero cannot spike or serve the ball. That means there is a limitation of the contribution of a player to the overall success of the team [25]. Further examples include the position of the players [11], the physical and technical abilities of the player [20] and their designated role within the team [16], or the team category [15]. In addition, psychological factors influence not only the successful execution of technical elements but they contribute to the performance of a team [20].

Especially the influence of resilience [14, 22, 26] and perceived importance of match [7] are less considered in team sports particularly in volleyball which contributes to the outcome of a match [19]. Generally, in physical education as Garn, McCaughtry, Shen, Martin and Fahlman [6], pointed out the perceived competence in physical education has been seen as an intermediary factor. In fact, reviewing the literature in high level volleyball sport there is an absence of relative studies about the relationship of perceived competence, importance of match and physical activity outcomes [4, 5].

Wagstaff, Sarkar, Davidson, and Fletcher [26], defined resilience as the ability that an athlete has to recover quickly from difficulties. This definition describes an ability that a volleyball player has to recover from a disadvantageous and difficult situation either partially or totally. This does not lead to positive emotions about coping successfully with the difficult situation. Quite on the contrary it just means for an example that a volleyball player after losing a break point and the opponent wins the point, s/he is continuing to do his/her best in order to achieve some or all the goals of the team in the match.

It is difficult to address resilience absolutely because is currently impossible to determine with certainty the nature of the trait or skill of resilience. However, one should take into account that arguments tend to show that at least some aspects of resilience may be faced as a state condition and or as a skill that one can be learn and trained to [10]. For the further investigation of the resilience in this paper we take into account that resilience is a temporary condition (state-skill) that volleyball players may experience for a short period of time, and it is not a part of personality (trait) as a long-term characteristic that volleyball players shows through their behavior, actions and feelings.

The findings of this study could be used to inform team selection (i.e., optimization of team structure, position of players, substitutions etc.), improve the validity of player scouting and list/roster management during and after the volleyball period as well as increased finesse of existing performance analysis in volleyball.

With the above-mentioned review considered, the purpose of the present study was to investigate the relationship between the resilience and the perceived importance of the match outcome of volleyball players according to their sex and team category.

## MATERIALS AND METHODS

### Measuring Instrument

In order to measure resilience, the Self-Evaluation Resilience test was used (<http://www.resilience-project.eu/>), which is a valid and reliable questionnaire in order to test resilience [9]. The self-evaluation questionnaire consists of 21 questions – 3 for each of the seven categories or areas of development (variables). The seven variables are: a) “perception” which refers of how someone focus in present making the best for here and now and finding the balance between the past-

the present- and the future-oriented thinking (e.g. Q3: I am aware of my feelings without allowing them to control me), b) “getting a grip of one’s life” which refers of how to manage one’s life how to find own coping strategies to master stress, obstacles and problems and become aware of positive aspects (e.g. Q1: I believe that I can influence my life situation and I am not a victim of the circumstances), c) “forming relationships” which refers to resilience and wellbeing as a results of sharing with others (e.g. Q1: I have at least one person in my life with whom I can share everything – the good and the bad), d) “acceptance and optimistic thinking” (confidence in future) which refers to thinking skills that foster resilience in daily life (e.g. Q3: I adapt flexibly to change and easily accept the unchangeable), e) “orientation on solution and aims which refers on getting away from problem thinking and developing thinking skills that enable solutions (e.g. Q1: I prefer finding solutions to searching for mistakes and someone to blame), f) “healthy lifestyle” which refers on the approach which keeps one physically and mentally healthy to empower one’s resilience (e.g. Q2: I am in touch with my body and feel what’s good for me and what’s not), and g) “self-efficacy” which refers on getting to know one’s strengths and the possibility of using one’s own resources in everyday life (e.g. Q3: I believe in myself). Answers were given at a 10-point Likert rating scale (1: total disagree-10: total agree).

For the evaluation of the perceived importance of the match, participants answered two questions for how important and how crucial the competition-match was as proposed by Marchant [12, 13], and Hatzigeorgiadis, Galanis, Zourbanos, and Theodorakis [7]. The questions were Q1: How important is performing well in this match to you? and Q2: How crucial is for you this match? Answer was given to a 10-point Likert rating scale ranging from 1: not important at all to 10: extremely important.

### Statistical Analysis

Statistical analysis was carried out using SPSS v23.0. The data were analyzed using one-way ANOVA in order to examine any differences according to gender (males and females) and team type (B- category, Pre-League, 1<sup>st</sup> League) of this sample for each factor tested and post hoc test with Bonferroni adjustment. Cronbach’s coefficient alpha was used to examine the internal consistency of each factor and Pearson’ (r) in order to test the intercorrelations between

## The Relationship between Resilience and the Perceived Importance of Match Outcome for Volleyball Players

the factors. The alpha level for statistical significance was set at  $p < .05$  for all tests. Descriptive statistics were also included.

### Participants

This study involved 78 participants aged 15-42 years all volleyball players 17 males ( $M=23.76$ ,  $SD=6.46$ ), and 61 females ( $Mean=20.97$ ,  $SD=6.72$ ), from high level Greek volleyball categories (B' category, Pre-League, 1<sup>st</sup> League) with acknowledged training experience (Table 1). Prior to the study, the participants gave their consent for participation in the research,

whereas they were assured that the completion of the questionnaires were anonymous and confidential. The participants completed the questionnaire on the training ground prior or after their last training before a forthcoming match, with completion time of the questionnaire being approximately 10-12 minutes all participants were informed that their participation was voluntary and they were free to withdraw from the research procedure any time they felt so. The study was approved by the Ethical Committee of the University of Thessaly /DPESS.

**Table1.** Demographic data of the volleyball players participating to the study

Teamcategory	Gender	N	Mean age	SD	Mean experience*	SD
B' category	Males	3	25.00	7.81	11.67	9.07
	Females	24	19.75	9.01	8.67	7.44
Pre-League	Males	11	23.64	6.82	10.91	6.67
	Females	24	19.50	3.36	8.29	5.15
1 <sup>st</sup> League	Males	3	23.00	6.08	11.67	4.16
	Females	13	25.92	3.77	12.54	6.50

\* Training experience in years

### RESULTS

Reliability analysis using Cronbach's coefficient alpha revealed an internal consistency ranging from moderate-good ( $\alpha = 0.60$ ) for the variables "forming relationships" to high ( $\alpha = 0.86$ ) for "self-efficacy respectively" with an overall high coefficient alpha score ( $\alpha=.92$ ) for all variables of resilient test. The internal consistency of the questions about the importance and the crucial significance of match was high ( $\alpha=.92$ ) (Table 2).

Correlation analysis (Pearson's  $r$ ) between the resilience variables and the perceived importance of the match of the volleyball players, revealed moderate positive and negative intercorrelation up to weak intercorrelation between the variables. All the resilience variables are intercorrelate positively between each other as expected (Table 2).

In details "perception" has a strong positive correlation to "getting a grip of one's life" and a moderate positive correlation to "acceptance and optimistic thinking", "orientation on solution and aims", "healthy lifestyle" and "self -efficacy" and a weak positive correlation to "forming relationships".

The variable "getting a grip of one's life" correlates strong positive with "acceptance and optimistic thinking", and moderate positive to "orientation on solution and aims", "healthy lifestyle" and "self -efficacy". Additionally, this variable was correlated positive but weak with the variable "forming relationships".

The variable "forming relationships" was correlated moderate positive to "acceptance and optimistic thinking", "healthy lifestyle" and "self -efficacy". Additionally, this variable was correlated positive but weak with the variable "importance-crucial of match".

The variable "acceptance and optimistic thinking", has a moderate positive correlation to "orientation on solution and aims", "healthy lifestyle" and "self -efficacy".

The variable "orientation on solution and aims" has a moderate positive correlation to "healthy lifestyle" and to "self -efficacy".

The variable "healthy lifestyle" correlates moderate positive with the variable "self -efficacy".

**Table2.** Intercorrelation of the resilience variables, perceived importance of match, and Cronbach's  $\alpha$

Variables	1	2	3	4	5	6	7	8	Cronbach's $\alpha$
1. Perception	-	.858**	.290*	.682**	.597**	.546**	.562**	-.078	.783
2. Getting a grip of one's life		-	.314**	.801**	.616**	.524**	.595**	-.051	.716

## The Relationship between Resilience and the Perceived Importance of Match Outcome for Volleyball Players

3. Forming relationships			-	.427**	.222	.334**	.307**	.245*	.613
4. Acceptance and optimistic thinking				-	.579**	.495**	.628**	-.038	.707
5. Orientation on solution and aims					-	.511**	.477**	.105	.750
6. Healthy lifestyle						-	.574**	.095	.632
7. Self-efficacy							-	.064	.863
8. Importance-Crucial of match								-	.921

\* p<.050, \*\*p<.010

One-way ANOVA revealed statistically significant differences between the males and females volleyball players in variable “forming relationships”  $F_{1,76}=9.89$ ,  $p=.002$  in favor of females volleyball players (Table 3).

No statistically significant differences were observed for the other tested variables between the males and the females volleyball players (Table 3).

**Table 3.** Arithmetic means, and standard deviations for all tested variables (males,  $N=17$  and females  $N=61$ )

Variables	Gender	M	SD	df	F	p
Perception	males	23.88	5.86	1	.854	.358
	females	24.97	3.75	76		
Getting a grip of one’s life	males	25.29	4.27	1	.149	.700
	females	25.66	3.15	76		
Forming relationships	males	25.53	4.76	1	9.889	.002
	females	27.95	1.99	76		
Acceptance and optimistic thinking (confidence in future)	males	24.94	3.96	1	.987	.324
	females	25.82	2.99	76		
Orientation on solution and aims	males	25.76	2.51	1	.018	.894
	females	25.90	4.01	76		
Healthy lifestyle	males	25.41	3.92	1	.771	.383
	females	26.28	3.51	76		
Self-efficacy	males	27.00	3.18	1	.288	.593
	females	26.52	3.24	76		
Importance-Crucial of match	males	17.12	4.01	1	.032	.859
	females	17.28	3.09	76		

Using the team difference patterns team category (B’ category, Pre-League, 1<sup>st</sup> League) one-way ANOVA test results (Table 4) showed

statistically significant differences between the groups in variable importance and crucial of match ( $p=.016$ ).

**Table 4.** ANOVA of resilience variables and importance-crucial of match with statistically significant results

Variables	Groups <sup>1</sup>	SS	Df	MS	F	p	$\eta^2$
Perception	Between groups	65.15	2	32.57	1.82	.169	.046
	Within groups	1342.20	75	17.89			
	Total	1407.35	77				
Getting a grip of one’s life	Between groups	22.60	2	11.30	.980	.380	.025
	Within groups	864.4	75	11.53			
	Total	887.04	77				
Forming relationships	Between groups	4.56	2	2.28	.254	.776	.010
	Within groups	672.49	75	8.97			
	Total	677.31	77				
Acceptance and	Between groups	10.74	2	5.37	.510	.602	.013

## The Relationship between Resilience and the Perceived Importance of Match Outcome for Volleyball Players

optimistic thinking (confidence in future)	Within groups Total	789.48 800.22	75 77	10.53			
Orientation on solution and aims	Between groups	8.83	2	2.91	.206	.814	.008
	Within groups	1058.89	75	14.12			
	Total	1064.72	77				
Healthy lifestyle	Between groups	16.97	2	8.49	.651	.524	.017
	Within groups	977.40	75	13.03			
	Total	994.37	77				
Self-efficacy	Between groups	1.63	2	.815	.077	.9	.002
	Within groups	794.59	75	10.60			
	Total	796.22	77				
Importance-crucial of match	Between groups	86.58	2	43.29	4.37	.016	.104
	Within groups	743.78	75	9.92			
	Total	830.37	77				

<sup>1</sup> a. B' category (N=27), b. pre-League (N=35), c. 1<sup>st</sup> League (N=15)

\*Significant at 0.050 level

Bonferroni correction revealed statistically significant differences in variable “importance-crucial of match” between the B' category volleyball players and the Pre-League volleyball players (I-J=2.04, SD=.81, p=.020) and between the B' category volleyball players and the 1<sup>st</sup> League volleyball players (I-J=2.50, SD=.99, p=.021).

Furthermore, Bonferroni correction revealed no statistically significant differences in all tested variables.

### DISCUSSION

The aim of the present study was to investigate the relationship between the resilience and the perceived importance of the match outcome of volleyball players according to gender and team category.

Using a self-evaluation resilience test, we observed a strong and/or moderate positive correlations between the variables of the resilience test which was expected. Additionally, using questions to evaluate the received importance and crucial of match we observed only a weak positive correlation with resilience variable “forming relationships” which refers to resilience and wellbeing as a result of sharing with others in team. That means when the wellbeing in a team rise up then it rises up the perceived importance of match and vice versa.

This finding is connected to the cohesion of a team and in line with Vanhove and Herian [24], that players from socially cohesive teams enjoy being together while on the other side task players in cohesive teams share a common goal[1, 2]. Furthermore, Robbins and Madrigal [21], pointed out that a strong connection exists between high levels of both types of cohesion

and team success and that link to the taking into account that cohesion of volleyball teams is effective when all aspects of task cohesion, social cohesion, and team think are involved.

According to gender statistically significant differences were observed in variable “forming relationships” between the males and females volleyball players in favor of females volleyball players. The results are in line with a recent study of Patsiaouras and Stirbu [19], which they found statistically significant differences in resilience between males and females in youth volleyball players (U-16). It should be noted, however, that the researchers in the above-mentioned study found these statistically significant differences in different factors of the resilience i.e. in “healthy lifestyle” and “self-efficacy”. Therefore, the contribution of age-maturation to the differentiation of resilience factors should be further investigated.

Statistically significant differences were observed with reference to team players category between B' category and Pre-league and B' category and 1<sup>st</sup> League volleyball players in variable “importance-crucial of match” in favor of the players from higher level.

### CONCLUSION

From the results of the present study, it was concluded that coaches and volleyball players should recognize that female's volleyball players focused more in forming relationships comparing to the males volleyball players.

Another important result of this study was that volleyball players from higher level players are interested more and they are more focused to the importance and the crucial of the match comparing to lower category team volleyball

players. This is an interesting finding because it means that coaches should pay more attention and implement appropriate strategies to strengthen resilience of team players bearing in mind the importance of the next match.

### Implications for Further Research

Future studies should investigate the relationship of perceived competence and physical activity outcomes and the contribution of other psychological factors such as anxiety on the individual perception of players' competence. Additionally, future research is needed in order to investigate the connection of resilience and the type of cohesion in sport teams and in volleyball teams in particular.

According to the resilience the contribution of age-maturation to the differentiation of resilience factors should be further investigated in future studies.

### REFERENCES

- [1] Carron AV, Brawley LR. Cohesion: Conceptual and measurement issues. *Small Group Research*. 2012; 43: 726-743.
- [2] Carron AV, Bray SR, EysMA. Team cohesion and team success in sport. *Journal of Sports Sciences*. 2002; 20: 119–126.
- [3] Clemente FM, Couceiro MS, Martins FM, Figueiredo AJ, Mendes RS. Análise de jogo no Futebol: Métricas de avaliação do comportamento coletivo. *Motricidade, Fundação Técnica e Científica do Desporto*. 2014; 10(1): 14-26. [http://dx.doi.org/10.6063/motricidade.10\(1\).1517](http://dx.doi.org/10.6063/motricidade.10(1).1517).
- [4] Dina G, Dina L, Popescu G. Perceptual models in volleyball players training. 3rd World Conference on Learning, Teaching and Educational Leadership – WCLTA 2012. *Procedia - Social and Behavioral Sciences*. 2013; 93: 2114 – 2119.
- [5] Fernandez-Echeverria C, Mesquita M, Conejero M, Moreno P. Perceptions of elite volleyball players on the importance of match analysis during the training process. *International Journal of Performance Analysis in Sport*. 2019; 19(1): 49-64. <https://doi.org/10.1080/24748668.2018.1559544>.
- [6] Garn A, McCaughy N, Shen B, Martin J, Fahlman M. Underserved Adolescent Girls' Physical Activity Intentions and Behaviors: Relationships with the Motivational Climate and Perceived Competence in Physical Education. *Advances in Physical Education*. 2013; 3: 103-110. <https://doi.org/10.4236/ape.2013.32018>.
- [7] Hatzigeorgiadis A, Galanis V, Zourbanos N, Theodorakis Y. A Self-talk Intervention for Competitive Sport Performance. *Journal of Applied Sport Psychology*. 2014; 26: 82-95. <https://doi.org/10.1080/10413200.2013.790095>.
- [8] Hughes MD, Bartlett RM. The use of performance indicators in performance analysis. *Journal of Sports Sciences*. 2002; 20: 739–754.
- [9] Leontopoulou, S. A cross – cultural study of resilience in young people. In: Roussi P, Vassilaki E, Kaniasty K. (eds.) *Stress and psychosocial resources: Coping with life changes, occupational demands, educational challenges, and threats to physical and emotional well-being*. Berlin: Logos Verlag; 2008. p. 31-44.
- [10] Leys C, Arnal C, Wollast R, Rolin H, Kotsou I, Fossion P. Perspectives on resilience: Personality Trait or Skill? *European Journal of Trauma & Dissociation*. 2020; 4 (2): 100074. <https://doi.org/10.1016/j.ejtd.2018.07.002>.
- [11] Lima R, Palao JM, Moreira M, Clemente FM. Variations of technical actions and efficacy of national teams' volleyball attackers according to their sex and playing positions. *International Journal of Performance Analysis in Sport*. 2019; 19(4): 491-502. <https://doi.org/10.1080/24748668.2019.1625658>.
- [12] Marchant D, Morris T, Andersen MB. Perceived importance of outcome as a contributing factor in competitive state anxiety. *Journal of Sport Behavior*. 1998; 21(1): 71-91.
- [13] Marchant D. Investigating a causal model of anxiety in sport. PhD thesis, Department of Physical Education and Recreation, Melbourne, Victoria, Australia; 1996.
- [14] Morgan PBC, Fletcher D, Sarkar M. Defining and characterizing team resilience in elite sport. *Psychology of Sport and Exercise*. 2013; 14(4): 549-559.
- [15] Palao JM, Santos JA, Ureña A. Effect of team level on skill performance in volleyball. *International Journal of Performance Analysis of Sport*. 2004; 4(2): 50-60.
- [16] Patsiaouras A, Charitonidis K, Moustakidis A, Kokaridas D. Comparison of technical skills effectiveness of men's National Volleyball teams. *International Journal of Performance Analysis in Sport*. 2009; 9(1): 1-7.
- [17] Patsiaouras A, Kokaridas D. Technical skills predictive of winning at CEV Volleyball Men's Champions League: Identification and importance. *TRENDS in Sport Sciences*. 2019; 2(26): 71-76. <https://doi.org/10.23829/TSS.2019.262-5>.
- [18] Patsiaouras A, Moustakidis A, Charitonidis K, Kokaridas D. Technical Skills Leading in

- Winning or Losing Volleyball Matches During Beijing Olympic Games. *Journal of Physical Education and Sport*. 2011; 11(2): 39 – 42.
- [19] Patsiaouras A, Stirbu C. Assessing Resilience in Youth (U16) Volleyball National Teams. *International Journal of Physical Education, Fitness and Sports*. 2020; 9(3): 39-45. DOI: <https://doi.org/10.34256/ijpefs2036>
- [20] Patsiaouras A. The Relationship Between Playing Characteristics and Performance Indicators of CEV Men's Volleyball Teams. *Baltica Journal*. 2020; 33(11): 2-19.
- [21] Robbins JE, Madrigal L. Team Cohesion: Demonstrating One Team's Strong Bonds in Relation to Environment, Leadership and Attitude. *Strategies*. 2019; 32(1): 36-40. <https://doi.org/10.1080/08924562.2018.1538833>
- [22] Sarkar M, Fletcher D. Psychological resilience in sport performers: a review of stressors and protective factors. *Journal of Sports Sciences*. 2014; 32(15): 1419-1434. <https://doi.org/10.1080/02640414.2014.901551>
- [23] Silva M, Marcelino R, Lacerda D, João PV. Match Analysis in Volleyball: a systematic review. *Montenegrin Journal of Sports Science and Medicine*. 2016; 5(1): 35-46.
- [24] Vanhove AJ, Herian MN. Team Cohesion and Individual Well-Being: A Conceptual Analysis and Relational Framework. In: *Team Cohesion: Advances in Psychological Theory, Methods and Practice (Research on Managing Groups and Teams, Vol. 17)*, Emerald Group Publishing Limited; 2015. p. 53-82. <https://doi.org/10.1108/S1534-085620150000017004>
- [25] Vilar L, Araújo D, Davids K, Travassos B. Constraints on competitive performance of attacker-defender dyads in team sports. *Journal of Sports Sciences*. 2012; 30: 459-469.
- [26] Wagstaff CRD, Sarkar M, Davidson CL, Fletcher D. Resilience in sport: A critical review of psychological processes, sociocultural influences, and organizational dynamics. In: Wagstaff C. R. D (Ed.), *The organizational psychology of sport: Key issues and practical applications*. London, UK: Routledge; 2016. p. 120-149.

**Citation:** Patsiaouras Asterios, "The Relationship between Resilience and the Perceived Importance of Match Outcome for Volleyball Players", *Journal of Sports and Games*, 2(2), 2020, pp 20-26.

**Copyright:** © 2020 Patsiaouras Asterios. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.