

Printed Design of Water Polo Suits

Lect. Doaa Khalil

Lecturer at Textile printing, dyeing, and preparation - Helwan University

Doaa_khalil@a-arts.helwan.edu.eg

Dr. Mohamed Mhd. Ibrahim Jafar

An international instructor and instructor in swimming and water polo training at the
British Academy of

Training and Scientific Research and the Syrian Swimming Federation.

mmejafar@gmail.com

Abstract:

The development of the sport of water polo has been accompanied by changes and amendments in the rules and the basic playing tools, especially for the sport suit the players wear in water polo matches which required shedding light on the features of this change in the development of the shape and material of the used sports suit and its design patterns. This research aimed to study the historical development of water polo' suit throughout the past decades with artistic analysis of some printed designs models of water polo suit in terms of used shapes and color groups, and get to know the opinions of the Egyptian consumer segment (Egyptian players) to determine the most popular and demanded designs in the Egyptian markets. The researcher used the descriptive method in a survey to collect historical material from references and books, where the research provided a comprehensive view of the historical development of water polo players' suit with an illustrated graph of the form of suit over the various stages, along with a closed questionnaire that was presented to a wide segment of water polo players in the Egyptian clubs who practice this sport, their number is (390) players in different age groups (16.6 ± 3.4 years), since they represented the consumer segment in order to get acquainted with their opinions in determining the most common designs, shapes and the most requested color groups that should be used during designing the printed suit for teams and the national team.

Through the results of the artistic analysis of (12) models of water polo national teams' suits, the designer relied on the shape and color of the national flag and the country name written in English with a straight-line pattern with an area of more than half the width of the suit, and the general feature was placing the printed words in the upper part of the design. In addition to the designs, forms that attract attention are added which express the national identity on one side of the design, and the most used forms were (the flag shape – shape and logo of the national army - the form of the most prominent features - the shape of the most important characters) and these forms varied between the geometric and organic forms with the use of 4 colors in the design.

The application of the questionnaire indicated the preference of the Egyptian consumer segment over the purchase of the printed suit with careful scrutiny in choosing the design colors to cope with the basic colors of the club and national team logo and the colors inspired by the national flag and top national teams in this sport. The consumer segment is also attracted to designs that have letters in English, as the consumer scrutinizes the meanings of printed words in the design before purchase, and a large segment also favors designs that include geometric and some organic shapes using cold colors in a large percentage and followed by less proportions for

designs that used black in the design's background then hot color combinations, mix cold and hot colors, then the designs that used white color in the design's background.

The researcher recommended to take advantage of this research results and use them as applied guidelines for those who are interested in this sport and those who are working in the field of design and textile printing for the importance of how to choose different types of suit's designs and colors according to market requirements and consumer inclinations (for the most common and demanding designs). They also recommended the Department of Textile Printing, Dyeing and Finishing of the Faculty of Applied Arts "The pioneering department in the fields of designing and printing textiles in Egypt" to participate in designing and printing of water polo suits.

Keywords:

printed design, suit, shape, geometric shape, organic form, water polo.

Introduction and research problem:

Water polo is one of the water games that needs distinct physical abilities as it depends primarily on the elements of strength and speed in addition to other kinetic abilities, and the tactic plans are based on the speed of players in moving the ball to the opponent's area with high skill to try to shoot and score a goal and swim back for defense as soon as possible¹.

Historical evidences indicate that this sport has covered a lot of change and modification from its early inception until it reached the current situation as an Olympic sport with its own rules and regulations, which distinguish it from other sports. Water polo has a distinctive scientific research interest at the international level and this is proven by the remarkable progress and distinguished results in the Olympic games and World Championships, as water polo requires distinct physical characteristics and high physical and skill components that differ from other team sports. The rapid development of the game at the technical and planning performance accompanies in parallel with the development of equipment and basic tools of this sport like balls, caps and suits worn by the players in matches inside the water to conform to the increasing requirements of speed and strength of the movement within the match²

The current research focused on shedding light on the changing of shape of suit of water polo players, and performing artistic analysis of the water polo printed suits' designs during the last ten years to be a database for textile print designers.

Importance of the research:

The scientific importance of this research lies in being the first of its kind in addressing the issue of defining the development of designs for water polo players' suits throughout the ages, as one of the scientific attempts that shed light on the development of the artistic view of the symbols, elements and colors of the artistic designs of the suit during the last ten years, by providing a comprehensive vision of the historical development of the various forms of water polo players' suits to be a reference for sports professionals and those who are working in the field of designing and textile printing, and providing application guidelines for them on the importance of how to choose different designs and colors for the suit according to the market requirements and consumer inclinations (for the most common and demanding designs), with the importance of participation of the Textile Printing, Dyeing and Equipment Department at the Faculty of Applied Arts "the leading department in Egypt in all fields of textile printing" and among these is the field of designing water polo sport suit.

Research objectives:

- The research aims to study the historical development of water polo sport suit over the ages.
- The research aims to perform an artistic analysis of some printed designs models of sport suits of national water polo teams.
- The research aims to investigate the opinions of the consumer segment to determine the most common and demanded printed designs in the Egyptian market.

Research questions:

- What are the historical developments that occurred in the design of water polo athlete' suit in terms of structural shape, material, fine elements and color groups?
- What are the forms that should be used in designing the printed suit of the national team?
- What are the most requested shapes and color groups by the Egyptian consumer segment in the printed design of sportswear?
- What are the most requested shapes and color combinations of printed design suit by the Egyptian consumer segment?

Search terms:

- Printed design: It is an artistic drawing to define the scales, shape and method of mixing colors and coordinating all these elements to get them printed on textiles to show their final shape.
- Form: It is what distinguishes things from one another. The shape is like the specific dimensions of any artistic work, whether in its height or width and its extension may be organic or engineering. The shape is the result of an action that starts from a point and when this action is completed the features of its shape appear negative or according to the point if it moves in a direction from which the line arises, and the more the line moves, the more the area arises from it, and then the formation appears, which is the most complex system³.
- Geometric shape: It is a form that depends on building a design on those lines that move to challenge a shape that in its entirety bears geometric boundaries related to the square, triangle or circleetc., including flat geometric shapes, which are two-dimensional shapes such as straight lines, angles, triangles and quadrilaterals, circles and three-dimensional geometric shapes are three-dimensional shapes⁴.
- The organic form: It is a form that simulates the characteristics of natural things and translates them to build a design that carries an organic character that adopts curves and deals with streamlines with the aim of achieving degrees of feelings sympathetic to nature and whether this is a spaced or overlapping shape, flowing soft or complex and rough, extended or specific all according to perceptual awareness nature, including an analogous trend associated with the depiction of familiar living natural forms, is an abstract trend that is not in itself a natural element⁵.
- Water polo suit: Is the uniform that is represented by the special swimsuit that the water polo player wears while swimming in training and competing in water polo matches⁶.

- Water Polo: It is the only team sport approved by the International Swimming Federation "FINA", and it mixes swimming and handling the ball to shoot it towards a closed goal with a net to score a goal⁷.

The study will address four main points, as follows:

- Introduction to the sport of water polo.
- The historical development of water polo suit over the ages.
- Artistic analysis of some printed suit models of national teams.
- Mention some water polo printed suit designs during the last ten years.

Results:

The research resulted in the following:

1- The research presented a comprehensive view of the historical development of the water polo players' suit and showed in a graph the form of suit over the different stages.

2- The result of identifying the opinions of a wide segment of water polo players in the Egyptian clubs practicing the game through a closed questionnaire, which was presented to (390) players in different age groups (16.6 ± 3.4 years) who represented the consumer segment in order to determine the most common designs, shapes and the most requested color groups that should be used while designing the printed suit for teams and the national team:

(1) The Egyptian consumer segment prefer to purchase the printed design suit.

(2) Carefully scrutinizing the design colors in line with the basic colors of the club and national team logo and the colors inspired by the national flag of the countries and the premier national teams in this sport.

(3) The consumer segment is attracted to designs that have letters in English, as the consumer scrutinizes the meanings of the words printed in the design before purchasing.

(4) A large segment also prefers designs that include geometric and some organic shapes.

(5) Use of cold colors in a large percentage, followed by lower proportions for designs that used black in the design background, then hot color combinations, then mix cold and hot colors, then designs that used white in the design background.

3- The result of the artistic analysis of (12) suit samples of the national water polo teams:

(1) The designer depended on the shape and color of the country's flag.

(2) The use of the country's name in English with a straight-line pattern with an area greater than half the width of the suit, where the general feature was the placement of the words printed on the top of the design.

(3) Added to the design forms to attract attention that express the identity of the state on one side of the design.

(4) The most used forms (the shape of the flag - the shape of the emblem of the army of the country - the shape of the most prominent landmarks - the shape of the most important figures) and varied between these geometric and organic forms.

(5) Use of four colors in the design.

Recommendations:

The researchers recommend the following:

- 1- We should pay more attention to take into account the Egyptian consumer's opinion on the design of the water polo suit in the design stages to obtain the design in a positive way.
- 2- Complete the studies in designing the water polo suit in details, and work to benefit from the Egyptian designers to develop designs that suit the taste of the Egyptian consumer.
- 3- Suggest to teaching a subject of sportswear design in general and in particular the water polo suit in the curriculum of the department of textile printing, dyeing and preparation, by adding the design of sportswear to the subject of fashion in designing the one-piece printing with a code number PDF042 in level VI in the scientific section or by adding new support material at the fourth level.

References:

1. "Al-Alyaf el senaeya, Khawas w este'malat w khalat el alyaf el senaeya w el tarkeebeya", el goze el talet, 1971.
2. Abu Khuzem, Ayman mostafa Hussein, "El mazg ben el ashkal el odweya w el handaseya lebtekar mo'alagat tashkeeya mo'sera fy tadrees ashghal el khasab", kolleyet el tarbeya el naw'eya, game't el kahera, 2012.
3. Al-Nagdy, Omar, "Abgadeyet el tasmeem", Al haya' al mesreya el ama lketab, 1996.
4. Nasef, Mahmoud nabeeh w Rateb, Osama, "Ossos tadreeb koret el. Maa", Dar el fekr el araby, el kahera, 1985.
5. Jafer, Mesbah Ebrahim w Jafer, Mohamed Ebrahim, "El-sebaha lezawy el e'aka", Dar el bayroony lteba'a el nashr, Aman, alordon, 2020.
6. Read, Herbert, "Ta'reef el fan", Dar el nahda el arabeya, 1962.
7. B.J. Agarwal and B.H. Patel, Ink-Jet Printing Technology to the Fore, The Indian Textile Journal, Vol. 111, No. 7, April, 2001.
8. Bayer Farben, Space Dyeing-Survey of Methods. Revue, 1975.
9. E.R. Trotman, Dyeing and Chemical Technology of Textile Fibres. 4th Ed., Charles Griffin & Co. Ltd, 1970.
10. El-Baze Z. & Hamed M. A., Transfer Printing. Helwan University, 1983.
11. FINA WATER POLO History of the game. HistoFINA, Vol.6, 2007.
12. FINA WATER POLO, MEDALLISTS AND STATISTICS. HistoFINA, Vol.8, 2009.
13. Kemeny F., Water Polo, Educational studies for the International Coaching Course. Institute of coaches and sport education, Semmelweis University, 2008.
14. Kemeny F., Water Polo, Educational studies for the International Coaching Course. Institute of coaches and sport education, Semmelweis University, pp.21-39. Budapest. 2008.
15. Ludovise B., Water polo Sport is on top. Blackwell publishers, 2nd Ed., 1991, pp.13-57.
16. Nemeth J., KOMJADE ARANYCSAPATA. Magyar Vizilabda UtyaKezdettol a Vilagelsosegig, Semmelweis University, Budapest, 1st Ed., 1981.
17. Smith, H., Applied physiology of water polo. Journal of Sports Medicine, vol.5, issue 26, 1998.
18. Snyder P., Water Polo for Players & Teachers of Aquatic, LA84, USA, 2008.
19. <http://facweb.cs.depaul.edu/sgrais/indigo.html>. 14/4/2019.

20. <http://textilelearner.logspot.com/2012/01/disperse-dye-history-of-disperse-dye.html>. 20/11/2019.
21. <http://www.whatispolyester.com/history.html>. 22/5/2019.
22. <https://www.waterpololegends.com>. 18/11/2019
23. <https://vasarnap.hu/2020/01/26/europa-bajnok-a-magyar-ferfi-vizilabda-valogatott/>. 22/5/2019
24. <https://www.olympic.org/water-polo>. 10/2/2019.
25. <https://www.printingnews.com/wide-format-signage/printing-devices/article/12127042/transfer-or-direct-disperse-dyesub-printing-which-is-more-sublime>. 1/6/2019
26. <https://www.swimoutlet.com/guides/how-to-choose-a-mens-water-polo-suit>. 15/6/2019

¹- Smith, H., Applied physiology of water polo. Journal of Sports Medicine, vol.5, issue 26, 1998, pp.317-334.

²- Ludovise B., Water polo Sport is on top. Blackwell publishers, 2nd Ed., 1991, pp.13-57.

³- النجدي، عمر، "أبجدية التصميم"، الهيئة المصرية العامة للكتاب، 1996م، ص253.

⁴- أبو خزيم، أيمن مصطفى حسين، "المزج بين الأشكال العضوية والهندسية لابن تينار معالجات تشكيلية معاصرة في تدريس أشغال الخشب"، كلية التربية النوعية، جامعة القاهرة، 2012، ص 92.

⁵- ريد، هريبرت، "تعريف الفن"، دار النهضة العربية، 1962، ص87.

⁶- Snyder P., Water Polo for Players & Teachers of Aquatic, LA84, USA, 2008, pp.5-27.

⁷- Kemeny F., Water Polo, Educational studies for the International Coaching Course. Institute of coaches and sport education, Semmelweis University, 2008, pp.21-39.