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THE RESULTS OF A HYGIENIC ASSESSMENT OF THE CONDITION OF SWIMMING POOLS

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Abstract
In accordance with the requirements of legislative and regulatory documents, i.e. sanitary rules and regulations for the design, equipment and operation of swimming pools (SanRand R No. 0306-12), measures are taken to prevent the spread of various diseases among swimmers and the population. During a sanitary and hygienic study of pool water over the years 2015-2017 the following results were obtained: in 2015, the total number of samples taken was 124 (100%) of which 4 (3.3%) samples did not meet hygienic requirements. in 2016 the total number of samples was 112 (100%), non-compliant - 4 (3.6%) samples, in 2017 120 (100%) and 2 (1.7%), respectively.

Keywords: Water pollution of swimming pools, swimming pool, swimming pool, hygienic requirements, lighting, noise, hygiene, sample.

Introduction

Swimming is one of the universal sports that is suitable for almost everyone. It is equally useful for the elderly, the young, those who are regularly physically active and those who are just starting to exercise, as well as those with health problems.
Swimming pools are structures that belong to the category of sports health facilities and serve to teach people of different ages to bathe and swim, and hold water sports competitions. Swimming pools consist of a set of complex engineering structures and devices that are interconnected and serve to ensure the specified technological regime. In recent years, the demand for the construction of swimming pools in terms of usefulness and their comfortable and economical construction is increasing. They can be used throughout the year keeping the water temperature artificially [3]. In recent years, 1113 modern sports facilities have been built in the Republic of Uzbekistan, of which 252 are sports complexes, 861 are gyms, and 110 are swimming pools. After gaining independence, special attention was paid to the development of all types of sports. In particular, strong legislation was created in this regard. In the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan on "Measures for the development of swimming sports", the President of the Republic of Uzbekistan "Strategy of Actions on the five priority directions of the development of the Republic of Uzbekistan in 2017-2021", "Active on the State program for implementation in the year of support of entrepreneurship, innovative ideas and technologies" dated January 22, 2018 In accordance with Decree No. PF-5308, training of reserve and highly skilled athletes in water sports, training and selection of children's trainers in water sports, financial incentives for trainers and employees of sports institutions The Cabinet of

Ministers decided to improve the system. At the same time, the "Regulation" was also adopted on the procedure for engaging in and using swimming pools financed from budget funds, and the conditions for the following to be followed by those engaged in using swimming pools were determined in it; passing through the turnstiles installed at the entrance and exit points of the swimming pools at the specified time; to remove outerwear (outerwear, shoes, etc.) in the wardrobes and to be in the pool area only in shoes that are allowed, that is, for swimming pools; observing the time of use of swimming pools. SanRand R No. 0306-12 document SanRand R No. 0306-12 on the sanitary rules and regulations for designing, equipping and using swimming pools, and this regulatory document is used to prevent the spread of various diseases among swimmers and residents. The sanitary rules and standards for the design, equipment and use of swimming pools (SanRand R No. 0306-12) stipulate the following; i.e. the use of swimming pools includes the following rooms: vestibule with cloakroom and customer registration, dressing room, training area, shower room, transfer foot showers, pool hall and post-training rooms, i.e. shower room, dressing room. The structure and covering materials of the hall, the walls and the bottom of the bath, should be waterproof and resistant to the effects of chemical reagents. It should be made of white and blue tiles that are easy to clean. The artificial lighting of the halls must not be less than 100 lk. The water temperature in the water pools is maintained at 23-250C, (for children it should not be less than 240C) air temperature control is carried out every 4 hours. The quality of consumed and used water must meet the requirements of State Standard 950-2011 "Drinking water". The suspended matter in the bath water should not exceed 1 mg/l, it should be transparent and have the appearance of a disk with a diameter of 15 cm at the bottom of the water basins. The water should not have an unpleasant smell, the pungency of the smell should not be higher than 3 points at 200C. Before swimming, a swimmer should wash his feet in a water bath, the interval between swimming periods should not be less than 30 minutes. The time of complete replacement of water should not be less than 6-8 hours, filters should be washed at least once a day. From a hygienic point of view, bromine creates a good environment for swimmers and does not harm the mucous membranes of the body. The solution prepared in special rooms for water purification is passed through a filter. The amount of residual chlorine used for water treatment should not exceed 0.5–0.6 mg/l, and the amount of bromine should not exceed 1.2 mg/l. If the pool has permeable systems and constantly changing water, it is disinfected at least twice a month. The recirculation system of the water in the bath of the pool should be done once a month based on physical, chemical and bacteriological analysis. A 5% chloramine solution or a 2-2.5% chlorine lime solution is used for disinfection of pool water [2].

Objective of the research:

Based on the above, we checked the sanitary condition of the Republican Water Sports Development Center and studied the level of pool water pollution. The level of pollution

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of the pool water was determined by the color, smell, taste, water temperature and residual chlorine content.

Research materials and methods:

During the inspection, pool water samples were taken and microbiologically tested in the general dynamics of 2015-2017. The amount of residual chlorine or bromine in the swimming pool water is determined by the iodometric method, and the purity of the water is evaluated based on MU/012–3/0152 [1].

Research results:

We conducted sanitary-hygienic inspections at the water sports development center of the Republic of Uzbekistan and obtained the following results: the total area of the center is 2648.61 m 2, the length of the swimming pool is 50 m, the width is 21 m, the height is 2.3 m. It is a one-story building with a capacity of 40 people per hour. At the same time, the center has a mini-football field, its dimensions are as follows: length - 40 m, width - 20 m, capacity - 25 people per hour. The structure and covering materials of the center hall, the walls and the bottom of the bath are covered with materials that are waterproof and resistant to the effects of chemical reagents. For sanitary-hygienic quality checks of pool water, samples were taken from 6 points: 0.5-1.0 cm from the surface of the entrance, 25-30 cm from the deep part of the entrance, 0.5-1.0 cm from the surface of the middle part and 25–30 cm from the deep part, 0.5–1.0 cm from the surface of the exit part, from 25–30 cm from the deep part.

We received the following results from the sanitary-hygienic inspection of swimming pool water in the dynamics of 2015-2017. The total number of samples taken in 2015 was 124 (100%), of which 4 (3.3%) samples, the total number of samples in 2016 was 112 (100%), of which 4 (3.6%) %), the total number of samples in 2017 was 120 (100%), of which 2 (1.7%) samples did not meet hygienic requirements (Fig. 1).

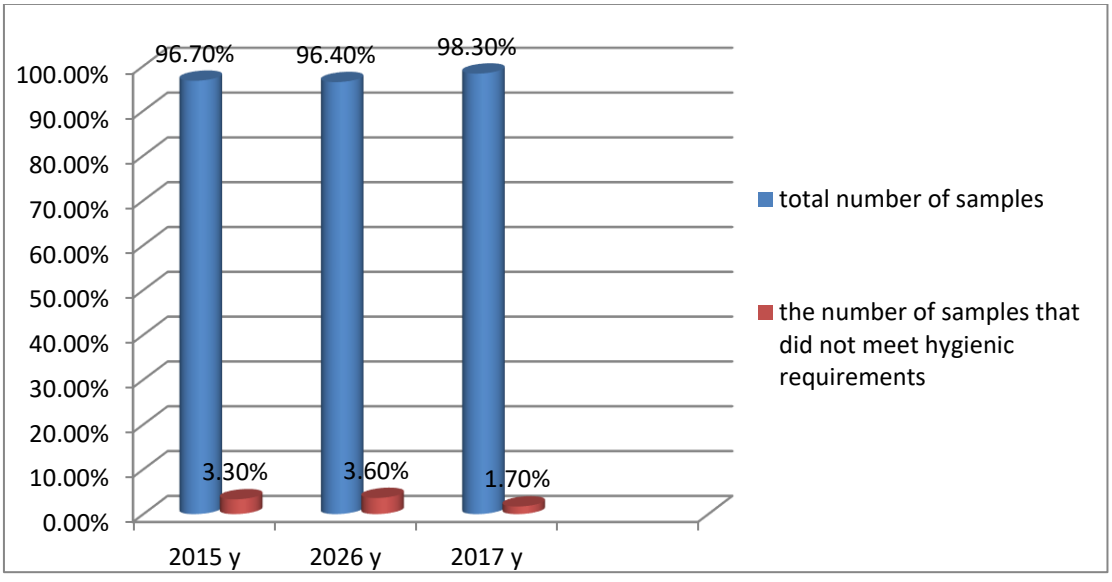

Figure 1. Results of inspection of pool water in the dynamics of 2015-2017.

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Our entire environment is, to one degree or another, affected by noise. People are used to a certain level of noise, and unless it's too much, they often don't even notice it. The need to combat the impact of noise on human consciousness has been recognized at the international level. In particular, at the 48th session of the UN Human Rights Council on October 5, 2021, a resolution was adopted recognizing the human right to a safe, clean, healthy and sustainable environment as a universal human right.

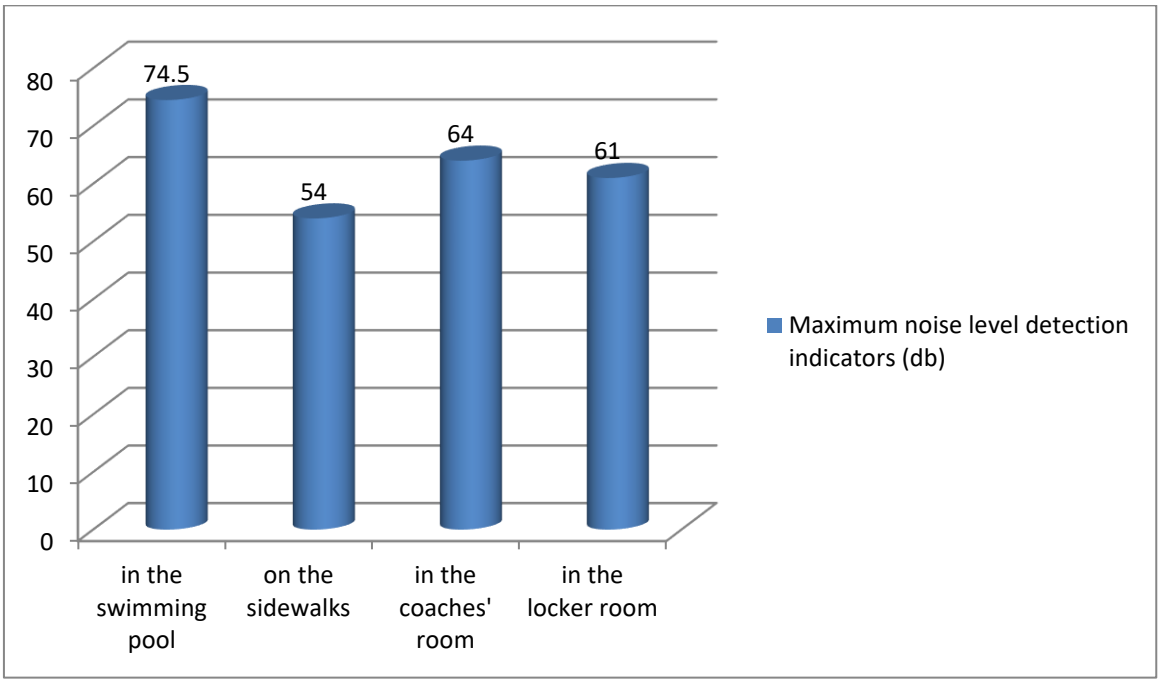

Figure 2. Maximum noise level detection indicators (db)

The noise level in the swimming pool was 68.7 to 74.5 db, in the corridors 45 to 54 db, in the coaches' room 60–64 db, in the girls' locker room and dressing room 58–61 db (Figure 2).

Humidity is water vapor in the air and the amount of water in physical bodies; one of the factors that determine weather and climate, properties of bodies. Humidity depends on the water vapor in the air, how saturated the objects are with water, their nature, density or porosity, and the dimensions of their internal and external surfaces. Usually, moisture is expressed as the amount of water expressed as a percentage of the original weight or volume of the object. The life of humans, animals and plants also depends on a certain level of humidity and the relative humidity of the environment.

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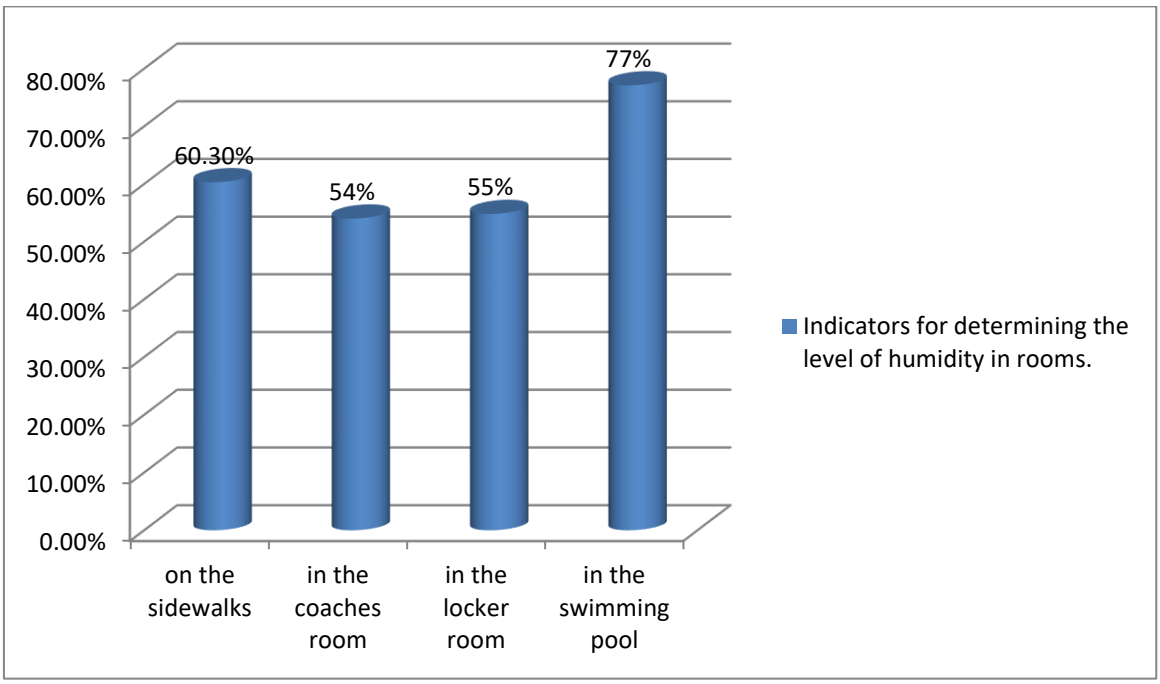

Figure 3. Humidity indicators of rooms.

The air humidity level is from 57.6 to 60.3% in the corridors, from 53.1 to 54% in the coaches' room, from 53.8 to 54.8% in the girls' dressing room, and from 62.7 to 77% in the swimming pool. It was found to be up to 1% (3 pictures).

Conclusion: The determined indicators meet hygienic requirements, which do not pose a threat to the health of pool users, which indicates that sanitary rules and standards are strictly followed in the operation of swimming pools.

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