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PREVALENCE OF SKIN PROBLEMS AND IMPACT ON QUALITY OF LIFE IN YOUNG SWIMMERS

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ABSTRACT

Background: *A cross-sectional research design was used to measure the prevalence of skin problems among competing swimmers and to measure the effect of skin problems on swimming and overall quality of life.* ***Methods:*** *A total number of 42 swimmers participated in this study. A semi-structured questionnaire was developed to identify self-reported skin problems and their relationship to the perceived pool environment. Effect of skin problems on the quality of life was also measured. Data analysis was done using Chi-Square, Pearson Correlation and ANOVA. A total number of 42 male and female swimmers with a mean age of 20.0 participated in this study.* ***Results:*** *There were 45.2% male and 54.8% female swimmers. The majority of the participants (52.4%) were 3rd year students. Overall prevalence of skin problems in the last one year was 78.6% with 16.7% cases of athlete's foot, 9.5% cases of ear infections, 9.5% cases of eczema, 85% cases of itching, 50% cases of rashes and only 2.4% cases of warts. There were 42.9% participants, who perceived swimming pool as the cause of their skin problems. Only 33.3% participants received treatment for their skin problems. Only 28.6% reported having complications because of skin problems like getting hospitalized in 9.5% cases. Only a few participants reported having an effect on their quality of life i.e. missing out training (19%) and missing out participation in an upcoming competition (11.9%). Chi-Square revealed significant differences (p=0.000) between the prevalence of skin problems of male and female swimmers. A significant positive relationship (r=0.048) was found between perceived swimming pool environment and skin problems. There was no significant effect of skin problems on the quality of life (p=0.208) of male and female swimmers.* ***Conclusion:*** *Significant differences between the prevalence of skin problems of male and female swimmers was observed. Female swimmers experienced skin problems more frequently as compared to the male swimmers.*

Keywords: Skin Problems, Quality of Life, Competing Swimmers, Pool Environment

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INTRODUCTION

The skin is the largest organ in the body and represents approximately 15% of the total body weight of an individual. Research scholars have indicated that "human skin performs many vital functions, such as protection against external physical, chemical and biological aggressors" (Dogra, 2003). It also participates in the 'prevention of excessive loss of water from the body and participates in thermoregulation and the mucous membranes that line the surface of the body are continuous with the skin" (Bickers, 2006). Other functions include insulation, temperature regulation and sensations. To fulfill these functions, mechanical stability is as important as mechanical flexibility. However, the mechanical balance of the skin can be threatened by skin diseases (SDs), trauma, medical or cosmetic treatment.

Despite the fact that SDs are extremely basic among the populaces of many non-industrial nations, they have not been viewed as a significant issue that could profit by general wellbeing measures. Indeed, more consideration is regularly paid to some more uncommon medical issues in similar nations. This disposition is because of the presumption that SDs are an amiable minor aggravation, not dangerous, and may appear to be unbalanced to its low need. In any case, in certain nations in any event, there is by all accounts an extraordinary interest from patients and medical services for more thoughtfulness regarding SDs as reported by Dalgard, (2004).

Epidemiological proof for the unfriendly wellbeing impacts of swimming in chlorinated water comes principally from considers identified with respiratory capacity, asthma, and SDs an altogether higher danger of bladder disease for swimmers contrasted with swimmers. Pool chlorination has been related with expanded porousness of the lung epithelium, danger of creating asthma, and respiratory issues (Yang, 2007). On the other hand, the discoveries on the relationship of chlorination with the SDs are not generally reliable. Alexis, (2007) detailed that swimming didn't build the danger of SDs or unfavorably susceptible side effects in swimmers, however was related with somewhat less respiratory plot manifestations, expanded lung work, and a lower danger of SDs, especially among youngsters. A meta-examination by Paek, (2012) showed that the relationship among SDs and swimming must be affirmed among competitor swimmers and couldn't be affirmed among other swimmers.

Swimmers are dependent upon a wide scope of bacterial and parasitic contaminations. Unreasonable maceration, dryness, and changes in the skin's microflora add to the advancement of SDs. Moreover, the danger of SDs is expanding because of the congestion of the pools and the normal utilization of showers and towels. A few examinations have shown that pools are defiled with dermatophytes, which builds the danger of SDs. Drawn out contact with

water expands weakness to contagious contaminations, and Kamihama, (2007) tracked down that 66.3% of swimmers are transporters of dermatophytes. In any case, the occurrence of ringworm among swimmers isn't very much contemplated, yet early reports have discovered that it can go up to 9.8%, addressing up to 85% of contaminations and it has been detached from pools. It normally begins between the toes. It ordinarily happens in individuals whose feet have become very damp with sweat while kept to tight-fitting shoes. The signs and manifestations of competitor's foot incorporate a layered rash that typically causes tingling, stinging, and consuming.

In any case, the rate of SDs among swimmers isn't all around considered, however early reports have discovered that it tends to be pretty much as low as 10% as it were. The purpose behind this disregard could be the low death rate from most skin infections contrasted with different sicknesses. This has additionally brought about global wellbeing strategy creators and neighborhood leaders giving low need to dermatological morbidities. Another worry is that the advantages of general wellbeing intercessions to decrease the predominance, horribleness, and mortality of SDs might be disparaged. In this manner, more investigations are required in regards to dermatological issues in proficient swimmers, as they seem, by all accounts, to be at high danger for waterborne illnesses, for example, SDs. With this foundation, the current examination was done to appraise the pervasiveness and seriousness of SDs and portray its relationship with different components among contending swimmers.

LITERATURE REVIEW

Swimming is a well-known action for exercise and diversion all through the world. Proficient swimmers ordinarily have “prepared in the pool double a day for six days every week with 2–3 h per instructional meeting, covering a distance of 65 to 130 km week by week”, contingent upon the style and distance (Klionsky, 201). During pre-race readiness, the swimmers prepared principally in indoor pools where the water was treated with the assistance of uniquely created synthetic substances, most regularly sodium hypochlorite, calcium hypochlorite or ozone. During pool exercises, human substances and individual consideration items can pollute the pool water. For outside pools, extra contaminations come from leaves and residue from the climate or water. These contaminations can convey microorganisms, including microscopic organisms, infections, and protozoa, which can cause a few sicknesses or indications like gastroenteritis and dermatitis as reported by Onayemi, (2005).

Swimmers bring into a pool each sort of pollute existing on and in their bodies. Some basic sullies are pee, excrement, sputum, microbes, infections, parasite

and different creatures, makeup and toiletries. These pollutes in pool water can cause ailment in vulnerable individuals (Kannan, 2006). Chlorine and bromine are the most widely recognized items used to sanitize pools. The pH of pool water is one factor that decides how adequately these items clean pool water. At the point when chlorine is added to pool water, it structures hypochlorous corrosive and hydrochloric corrosive. Hypochlorous corrosive is a successful sanitizer (Zaraa, 2013). Hydrochloric corrosive is a side-effect of the response and is anything but a powerful sanitizer. Hypochlorous corrosive is estimated as free-chlorine lingering. Contingent upon the pH, hypochlorous corrosive may isolate into hydrogen particles and hypochlorite anions. The more acidic the pH, more hypochlorous corrosive remaining parts in the water and more sanitization happens. The more antacid the pH, the more hydrogen Ions and hypochlorite anions structure bringing about less sterilization (Dlova, 2019).

Chlorine consolidates with nitrogen mixtures like smelling salts in pool water, to shape chloramines or joined chlorine (Ayer, J., 2006). Alkali joins with hypochlorous corrosive to shape monochloramine and water. Other synthetic responses can shape extra chloramines, for example, dichloramine and nitrogen trichloride. Joined chlorine is a feeble sanitizer which grants a solid chlorine scent and disturbs the eyes (Nweze, 2005). In this manner it is alluring to have as minimal consolidated chlorine in the pool as could be expected. Typically, joined chlorine frames all the more quickly when enormous quantities of swimmers are in the pool. At the point when the consolidated chlorine level turns out to be too high, the pool ought to be super chlorinated. The consolidated chlorine is obliterated (breakpoint) leaving basically free chlorine in the pool. Pools that have been super chlorinated ought to be permitted to get back to ordinary chlorine levels prior to being utilized.

Water balance (Rushton, 2002) is the relationship of pool synthetic compounds in the water. The ideal pool water gives an agreeable climate to the swimmer while opposing the development of microbes, green growth and different living beings. The segments of water balance are temperature, pH, all out alkalinity, complete hardness, and all out disintegrated solids. The pH scale signifies the "potential for hydrogen, and is an estimation of causticity or alkalinity in any substance. PH is estimated on a scale numbered from 0 to 14. As the pH of pool water is brought from 7 down to 0, the more acidic" (Martins 2014). Acidic pool water can make harm pool gear and significant levels may harm swimmers.

The skin is probably going to dry out in the wake of swimming if the pH of the pool water rises (Crawford, 2009). Chlorine can likewise cause dryness, however since it is a detergent, late dermatitis research has prescribed weakened fade as an approach to decrease microscopic organisms on

eczematous skin. A few group with skin inflammation may encounter aggravation dermatitis. This might be on the grounds that the skin responds to chlorine or any of different synthetics added to clean or change the compound equilibrium of the pool water. In the event that this happens to you, it very well might merit changing where you swim, as various pools may utilize diverse substance treatment frameworks.

Verrucas, as most moles (warts), are because of a viral contamination of the developing layers of the skin. They get in when the skin is harmed somehow or another. This is particularly the situation for shoeless exercises encompassing pools (Vaile, 2003). Moles are infectious and normal: Most individuals will have one sooner or later in their lives (Vaile, 2003). Despite the fact that they can influence individuals at whatever stage in life, moles are generally normal among kids and teens. Most moles are innocuous and will disappear all alone inside half a month or months. However, they can be annoying and ugly, and a few group feel embarrassed. There are various medicines that can make moles disappear all the more rapidly – yet they don't generally work.

Most moles don't bring on any troublesome indications. Some may cause tingling, snugness or a sensation of pressing factor. Moles may be excruciating as well, especially those on the bottoms of the feet. A few moles have little dark or caramel spots brought about by coagulated blood that has spilled from vessels in the skin.

METHODOLOGY

A cross-sectional research design was used to measure the prevalence of skin problems among competing swimmers and to measure the effect of skin problems on swimming and overall quality of life. The researcher formulated three hypotheses as below:

i. Prevalence of skin problems will be significantly different in male and female competitor swimmers,
ii. Pool environment will be the major cause of skin problems in competitor swimmers, and
iii. Prevalence of skin problems will significantly affect the quality of life of competitor swimmers.

A total number of 42 swimmers participated in this study. A semi-structured questionnaire was developed to identify self-reported skin problems and their relationship to the perceived pool environment. Effect of skin problems on the quality of life was also measured. Data analysis was done using Chi-Square, Pearson Correlation and ANOVA.

RESULTS

A total number of 42 male and female swimmers with a mean age 0f 20.0 participated in this study participated in this study. There were 45.2% male and 54.8% female swimmers. The majority of the participants (52.4%) were 3rd year students. Overall prevalence of skin problems in the last one year was 78.6% with 16.7% cases of athlete's foot, 9.5% cases of ear infections, 9.5% cases of eczema, 85% cases of itching, 50% cases of rashes and only 2.4% cases of warts. There were 42.9% participants, who perceived swimming pool as the cause of their skin problems. Only 33.3% participants received treatment for their skin problems. Only 28.6% reported having complications because of skin problems like getting hospitalized in 9.5% cases. Only a few participants reported having an effect on their quality of life i.e. missing out training (19%) and missing out participation in an upcoming competition (11.9%). Chi-Square revealed significant differences (p=0.000) between the prevalence of skin problems of male and female swimmers as shown in Table-1 below. Female swimmers experienced skin problems more frequently as compared to male swimmers as depicted in Figur-1 below.

Table-1

	Gender	Skin Problems
Chi-Square	.381[a]	13.714[a]
df	1	1
Asymp. Sig.	.537	.000

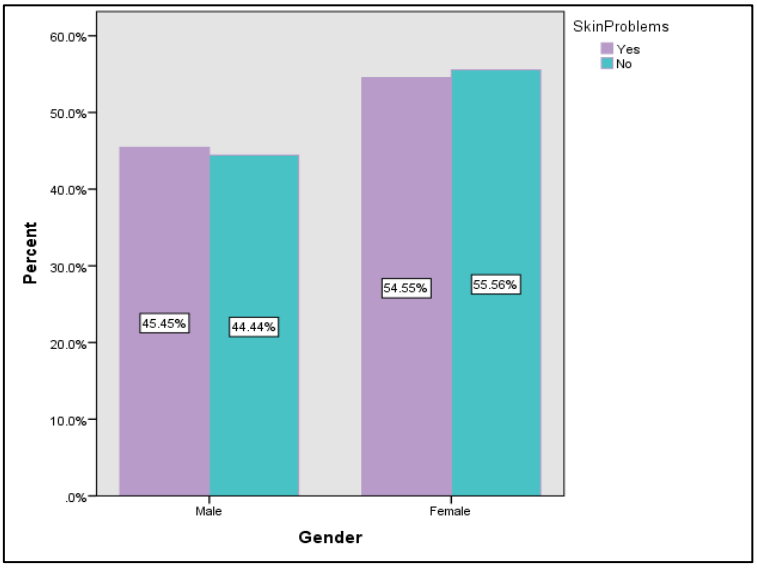

Figure-1

Table-2

		Skin Problems	Cause
Skin Problems	Pearson Correlation	1	.307*
	Sig. (2-tailed)		.048
	N	42	42
Cause	Pearson Correlation	.307*	1
	Sig. (2-tailed)	.048	
	N	42	42

A significant positive relationship (r=0.048) between perceived swimming pool environment and skin problem is shown in Table-2.

Table-3

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.427	1	2.427	1.640	.208
Within Groups	59.192	40	1.480		
Total	61.619	41			

There was no significant effect of skin problems on the quality of life (p=0.208) of male and female swimmers as shown in Table-3 above.

DISCUSSION

In an examination by Ayer, (2006) showed that 22 swimmers had eczema (15%), 8 of the cases had ear infection (6%). one case was noticed with a double disease. Present study showed almost the similar results as the prevalence of eczema and ear infection was on the lower side (9.5%). This investigation showed a low frequency of “athlete’s foot”, which was (16.7%). Various natural aggravations can trigger dermatitis, and pool water is no exemption. A few group with dermatitis may encounter disturbance or drying of their skin; others experience no negative impacts. Dryness of the skin subsequent to swimming is probably going to happen if the pH of the pool water is raised. Chlorine can likewise cause dryness, however since it is a detergent, and ongoing exploration in dermatitis has suggested weakened blanch as a method of lessening microscopic organisms on eczematous skin, it isn't all terrible! A few group with skin inflammation may encounter aggravation dermatitis. This can be because of the skin responding to chlorine or to any of different synthetic substances added to disinfect or adjust the compound equilibrium of the pool water. The present study indicated 85%

cases of itching but it can't be attributed to the presence of any chemical as the pool environment was not measured in this study.

A comparative scene had been reported in 1974, however the proof on that event had been conditional and not totally definitive. Of the 98 people addressed, 61 had utilized one or the two pools and of these 32 had a rash; not one of the 37 who had not utilized the pools had a rash or some other indications. Of the individuals who had a rash, nine had different side effects like ear infection, sore throat, sore eyes, or delicate bosoms. Similarly, in the present study 50% of the cases reported having skin rashes with pink eyes. The vast majority of the swimmers didn't receive treatment dot this condition. It shows either the condition was not as serious to seek medical help or the swimmers lack knowledge to seek medical help. This phenomenon needs further exploration.

People presented to pool water usually create unfavorably susceptible conjunctivitis. This prompts visual bothering, constraining the people to rub their eyes forcefully and causing corneal scraped areas or auxiliary contamination. The Centers for Disease Control (CDC) directed an investigation to survey ailment and wounds brought about by pool sanitizers and synthetics in the USA. The same must be done in Pakistan.

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