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Ability to swim and swimming proficiency of twenty year old males

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In order to establish the ability to swim, swimming proficiency and mastering of various swimming styles we tested 686 young men, whose average age was 19,8 years. They all had to swim 50 metres as quickly as possible in a style which they selected. All who were able to fulfilling the task were labelled swimmers and the other non-swimmers. We also assessed their swimming technique. It was established that 167 of them were non-swimmers (24,34%). Generally the swimmers did not have a very good swimming technique. Poor swimmers generally come from places with up to 4.000 inhabitants and had a lower level of education.

1. Subject and problem

The belief and recognition that swimming is equally important to modern man as walking and running is becoming more relevant every day. Swimming is a physical activity which has a positive effect on the general and balanced development of a human being. The ability to swim is required in sudden en quick rescue efforts in the water. The ability to swim is the most efficient way of preventing drowning in different circumstances when individuals come into contact with water. One can also enjoy swimming as a sporting activity throughout life. This point is not irrelevant because when people get older the often have to give up more dangerous sporting activities. The ability to swim is also essential to participate in any water sports.

From the public opinion polls it was established that 4 to 5% of Slovene adults cannot swim. The ability to swim and education are closely related. The percentage of non-swimmers is falling in proportion to the degree of education. The majority of non-swimmers come from places with less than 2.000 inhabitants from Prekmurje, Stajerska, Dolenjska and Primorska (not including the coastal regions of Primorska) (Kapus 1993).

In the sample of 20-years old it was discovered through the poll that 15% were not capable of swimming 50 meters (Celigoj 1994). After finishing secondary school the probability that people will learn how to swim in some organized manner is minimal. Males who train in the Territorial Defence of Slovenia might have a chance to learn during the summer months when some of the barracks organise swimming lessons. Because most of them are around twenty years old we wanted to find out what their swimming ability was and the level of swimming proficiency of the twenty-year old and what is the effect of some regional and sociological characteristics.

2. Methods

Organisation of swimming tests.
Swimming tests were carried out in August and September 1994 in swimming pools in Slovenske Konjice and Vrhnika. All the participants were questioned before starting the swimming tests, so the potential number of non-swimmers could be estimated. A measuring unit for measuring the distance was put beside the pool. The participants had to swim 50 meters as quickly as possible in a style of their choice and starting when they wanted to. Two of the participants started at the same time. Each candidate was watched by a monitor who appraised him according to the given standards. There was also a life-guard present.

THE SAMPLE OF PARTICIPANTS
The sample consisted of 6896 young men from different parts of Slovenia. all had finished education. Their average age was 19,8 years.

SAMPLE OF VARIABLES
It was divided into two parts:
DATA ON SWIMMING ABILITY AND PROFICIENCY:

DIS - distance swam.
All who swam 50 metres were put in the 50 metres category and the rest into the category of the distance they succeeded in swimming.

P 50 M - time taken.
All participants were entered into the time category.

SP - starting position:
1 - didn't dare enter the water
2 - entered water, did not swim
3 - started swimming in the water and swam from 0 to 50 metres
4 - jumped into the water from the edge of the pool.

STYLE - swimming style used:
1 - crawl
2 - breaststroke
3 - backstroke
4 - combination (crawl, breaststroke)
5 - Others (undefined styles).

COOR - Coordination:
A candidate with well coordinated arm and leg movement and breathing was considered to be a well - coordinated swimmer.

BREATHE - Breathing:
1 - coordinated breathing
2 - uncoordinated breathing
3 - breathing with head above water.

DATA ON SOCIAL AND DEMOGRAPHIC STATUS OF PARTICIPANTS.

Residence

The size of the place the candidates came from was defined and divided into six categories:
1. An isolated homestead, a small settlement or a small village (far away from the nearest post-office, school and shops) with up to 500 inhabitants.
2. A village , settlement with a school, post-office, shop, a market-town with 500 to 2.000 inhabitants.
3. A place with 2.000 to 4.000 inhabitants.
4. A place with 4.000 to 10.000 inhabitants.
5. A place with 10.000 to 50.000 inhabitants.
6. A place with over 50.000 inhabitants (Ljubljana, Maribor).

Region

Candidates were divided into groups according to the regions they came from. In comparing a region with swimming proficiency, regions with a very small number of candidates were not included.
1 - Prekmurje, 2 - Stajerska, 4 - Dolenjska, 8 - Primorska, excluding the coastal region, 10 - Koroska, 11 - Ljubljana, 12 -Maribor.

Education

In the division of participants according to education the following standard was considered:
1 - incomplete primary school education;
2 - completed primary school education;
3 - vocational school - shortened programme;
4 - vocational school education;
5 - secondary school education;
6 - two years of university education;
7 - university education.

Methods of data processing

Data were processed with the kwik stat programme. To establish the number of non-swimmers, distances swum and characteristics of swimming styles, the frequencies were calculated. To establish the achievement differences analysis of a variable was carried out. Contingency tables were calculated to establish the similarities in characteristics of swimming style and social and demographic status.

Results

Distances swum

According the criteria that a candidate who is capable of swimming 50 metres is a swimmer, it was established that the sample consisted of 167 non-swimmers which is 24,34%. In the event of the use of a less demanding criterion (25 metres swum), there were 145 non-swimmers, which is 21,14%.

Swimming achievements

The best candidate swam the 50 metres distance in 27.8 seconds and the last one in 137 seconds. The average time was 50.4 seconds.

Starting position

Seven participants did not enter the water (1,02%).
85 participants (12,39%) entered the water but did not swim.
And 163 (23,76%) started swimming in the water. They swam from 2 to 50 metres.
431 participants jumped into the water (62,83%). All participants who jumped in swam the 50 metres.

Style

303 participants swam crawl (48,79%) which was reasonable considering the aim was to swim the distance as quickly as possible.
Approximately the same number swam breaststroke, 154 (24,80%), or a combination of breaststroke - crawl - 152 (24,48%).
12 participants (1,93%) swam doggy paddle or some other undefined style.

Breathing

115 participants' (18,52%) breathing was rhythmical and coordinated.
49 participants' (7,89%) breathing was uncoordinated.
457 participants (73,59%) breathed with their heads above water.

Coordination

Good coordination of arms, legs and breathing was found in 115 participants (18,52%) and the other 506 participants (81,48%) did not display coordinated swimming.

Ability to swim and some social-demographic characteristics

The difference of swimming ability between participants with various degrees of education is not statistically relevant. The best average result was achieved by participants with the lowest level of education but due to the low number of participants the data is not reliable. With a higher level of education the swimming proficiency increases as well.

The best results were achieved by participants from places with 2.000 to 4.000 inhabitants. Statistically relevant poorer results were achieved by participants coming from places with up to 500 inhabitants and up to 2.000 inhabitants.

50 M according to education 50 M according to size of the place
50 M according to region.

When processing data for different regions we left out those regions with less than 10 participants. The best results were achieved by the participants from Stjerska and both major cities (Maribor and Ljubljana). Differences among regions are not statistically relevant.

The percentage of the swimmers is rising together with the degree of education. The proportion between swimmers and no-swimmers at the second level of education is 65,5% to 34,4% and at the fifth level 85,3% to 14,7%. The percentage of those who started swimming by jumping in and swimming in the water is higher in participants with a higher degree of education and the percentage lowers in participants who did not go into the water or went into the water but did not swim. The swimming styles and coordination bore no relevance according to education. In all groups de majority of participants swam crawl and breaststroke. Most candidates with the fifth level of education displayed coordinated breathing

It was estimated that there is a considerably larger number of non-swimmers who live in places with up to 2.000 inhabitants than in other places where there are no significant differences. More participants who jumped into the water came from larger places and less of those who started swimming once in the water. A higher number of participants coming from places with up to 4.000 inhabitants started swimming once in the water. The highest number of participants who did not dare enter the water came from Ljubljana and Maribor.

The majority of those who swam crawl came from larger places. Poorer coordination and breathing was noticed in participants coming from the first two groups of places. Those places also have the highest number of non-swimmers and swimmers with the weakest swimming styles while there are no noticeable differences among other groups.

Most of the swimmers came from the two major cities (Maribor and Ljubljana) and the least from Prekmurje.

The highest number of participants who did not enter the water came from Ljubljana and Maribor and the participants who entered the water but did not swim mainly came from Prekmurje and Primorska. Most of the participants who started swimming in the water came from Dolenjska and there are no noticeable differences among other regions. The highest number of participants who jump into the water came from Maribor and the lowest from Dolenjska. The highest number of participants who used some undefined style came from Primorska.

The highest number of swimmers with coordinated swimming came from Ljubljana and Primorska and the lowest from Prekmurje, Stajerska and Dolenjska. The highest number of participants with coordinated breathing came from the coast and the two large cities and the lowest from Dolenjska, who tended to breath with their head above water.

Sources

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