Health-Oriented Attitudes in Amateur Sumo Wrestlers

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Maria Alicja Nowak[ACD], Malgorzata Kitowska[BE], Tadeusz Rynkiewicz[AC], Joanna Kurianska-Woloszyn[B], Piotr Zurek[B], Mateusz Rynkiewicz[B]

Extramural Department of Physical Education in Gorzow Wielkopolski of the Poznan Physical Education Academy, Poznan, Poland

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Abstract

Background and Study Aim: Amateur sumo is one of rather few sports which can provide overweight and obese individuals with an opportunity to exercise their bodies, mold attitudes and learn a value system. The goal of this research was to identify health-oriented attitudes in sumo wrestlers depending on their age category.

Material/Methods: Researched subjects were wrestlers of the following four sumo categories: cadets (n=25), juniors (n=18), pre-seniors (n=11) and seniors (n = 18), who were put through a diagnostic survey, requested to fill in a questionnaire, and evaluated against the PRO-ZET attitude scale. For purposes of statistical inference an analysis of variance was used and results of the F test, the NIR test and Tukey's RIR test for unequal n's were given.

Results: The above research techniques and statistical methods allowed successful identification of health-oriented attitudes in sumo wrestlers. The highest average rates of the General Attitude Indicator and of the formal components indicate that it is juniors that had their health-oriented attitudes developed to the fullest. This was confirmed by the fact that in juniors the content-related elements, such as health education and physical activity, were also better developed. In health control and treatment juniors' and pre-seniors' attitudes were comparable.

Conclusions: Our research into the health-oriented attitudes in sumo wrestlers showed that the cognitive element of the attitude takes precedence over the behavioral one, hence an urgent need to properly mold health-oriented habits in young people in order to prepare them to perform a variety of social roles in different areas of adult life.

Key words: attitude • health • age category • amateur sumo • champion

Author's address: Maria Nowak, Extramural Department of Physical Education in Gorzow Wielkopolski of the Poznan Physical Education Academy, Estkowskiego 13, 66-400 Gorzow Wielkopolski, Poland, e-mail: maria-nowak@wp.pl

Background

In accordance with the theory of attitudes [1], physical culture sciences have adopted a structural concept of attitude which differentiates the cognitive, the emotional, and the behavioral components. An important quality of attitude is its permanence [2]. Grabowski [3] believes that the permanence of predispositions to behave in a certain way (such as a positive approach to: hygiene and health, physical development and fitness, and the needs of bodily esthetics and hedonism) is a benchmark of physical culture. Contemporary concepts of physical education emphasize the significance of attitude formation, propagation of knowledge about bodily exercise and body care, strengthening the body, and developing physical skills and fitness [4], and see this process as an element of health formation.

Due to predominantly sedentary lifestyles that prevail in the economically developed countries, absence of movement and little physical activity are generally considered to be chief health hazards there [5]. Physical exercise can help control body weight [6], but the health-related benefits of physical activity are still underestimated by people struggling with obesity. Research into the popularity of physical activity in that group shows that exercise as a tool of losing weight is the least common of all [7]. Amateur sumo however can provide overweight and obese individuals with a an opportunity to exercise, a quality that few other sports can do. What is important in ama-

Attitude – a set of relatively permanent predispositions to evaluate, emotionally react to, and behave towards a defined object.

Health – a state of complete physical, mental, and social well-being, rather than absence of disease.

Age category – an age bracket based on dates of birth of individuals involved in sport competition.

Amateur sumo – a sport for men and women in which athletes compete in a variety of age and weight categories in line with regulations, statutes, and rules of a local sumo association and international sports organizations.

Champion – an individual who came in first in a sport contest on the national, European, or world level.

teur as well as recreational sumo (for instance mini sumo for children) is that, unlike in professional sumo, wrestlers are not encouraged to put on weight in an artificial manner. As a result, heavy and unfit children and teenagers who practice sumo can not only lose weight, but also build up their self-esteem and successfully diminish the feeling of peer rejection that stems from their obesity. Anyone who wants to practice sumo must accept and adhere to clearly defined rules and learn how to respect another individual as a separate and unique being. What is more, sumo regulations and rituals accustom to and teach the importance of following instructions, and the significance of fair play, also outside sport.

Introduction of oriental elements (the language, the clothing, and the ritual) to the local culture and drawing on the cultural heritage of the nations of South-East Asia will become even more effective once all physical education academies in the country have begun teaching the theory of martial arts [8] on a regular basis. A successful transfer of oriental martial arts philosophy can help propagate an active, sporty lifestyle in which specialist physical skills go hand in hand with a budŏ attitude in the axionormative understanding of the term [9]. Amateur sumo defined in this way, i.e. a sport that allows a thorough physical and mental development, lends itself splendidly to being an instrument of comprehensive attitude formation.

The goal of this research was to identify health-oriented attitudes in amateur sumo wrestlers depending on their age category.

Material and Methods

Subjects were cadets (n=25) and juniors (n=18) competing in Poland's championships in Svidvin and Warsaw, and pre-seniors (n=11) and seniors (n=18) who entered for the Polish Sumo Cup 2009 in Gorzow Wielkopolski, a total of 46 males and 26 females, aged between 15 and 16 (cadets), 17 and 18 (juniors), 19–21 (pre-seniors), and 22 and older (seniors). Age differences were particularly pronounced among the seniors, 50% of whom were in the 22–23 bracket, the other half fell into the 26–33 band. 71.4% of the subjects were city residents. Cadets, juniors, and pre-seniors had secondary school education or lower (75% were students); 35% of seniors had university education. 60% of the subjects had jobs, 30% were still at school. There were also 4 unemployed individuals, who did not pursue any further education. 52.9% assessed their own financial standing as 'very good', 36.8% as 'good'. Seven individuals evaluated it as 'bad', including two who said it was 'very bad'. Half of the subjects were world champions (13.5%), European champions (14.9%), and Poland's champions (21.6%), the remaining contestants having achieved no comparable success (Figure 1).

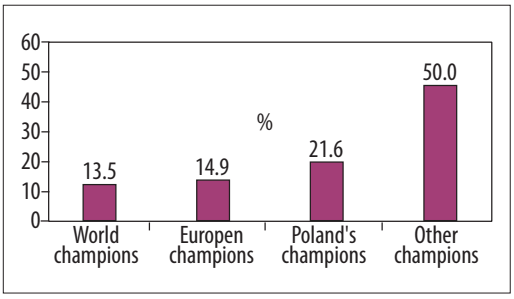

Figure 1. Achievements of amateur sumo wrestlers.

In this study the diagnostic survey method was applied, along with a questionnaire on health-oriented lifestyle and the PRO-ZET attitude scale invented by a research team at the Liberal Sciences Department of the Warsaw Physical Education Academy on the basis of the Likert scale. Both techniques were put through several stages of verification during pilot tests [10,11]. The most general, three-element picture of attitude can be expressed by means of the General Attitude Indicator (or the GAI), which is made up of the cognitive component (or the CC), the emotional component (or the EC), and the behavioral component (or the BC). The GAI and the three components were used to diagnose health-oriented attitudes in sumo wrestlers in different age brackets. For the purposes of statistical inference an analysis of variance was used along with the results of the F test (the GAI had a normal distribution as was seen on the basis of the W Shapiro-Wilk test), the NIR test and Tukey's RIR test (for unequal n's) [12].

Results

It was found that juniors had scored the highest average rates of the GAI and of all three constituent elements, which is indicative of best-formed health-oriented attitudes (Table 1).

The compared arithmetic means of the GAI and its components proved to vary depending on age brackets. The GAI revealed a significant statistical variance ($F(3, 68)=3.06$, $p=0.05$) ($W=0.9809$, $p=0.3441$). A significant statistical variance was also found within the BC ($F(3, 69)=2.74$, $p=0.05$). The CC and the EC did not show any significant statistical variance across the age brackets.

Arithmetic means of the GAI in juniors were found to be significantly higher than those in cadets and seniors (Table 2). A significant statistical variance was observed in these pairs: juniors and cadets (0.0321), and juniors and seniors (0.0058) (the NIR test). The difference was confirmed by the findings of the Tukey's test (RIR for

Table 1. Results of variance analysis of the GAI variable and its components in different age categories of amateur sumo wrestlers.

Attitude indicators	n	Mean	SD	Min.–Max.	F value
General Attitude Indicator:					
Cadets	25	113.0	28.5	70–165	
Juniors	18	130.2	29.5	72–175	F (3, 68)=3.06
Pre-Seniors	11	121.7	18.3	89–147	p=0.05
Seniors	18	106.1	19.4	66–136	
The Cognitive Component:					
Cadets	25	43.2	10.9	18–65	
Juniors	18	46.7	10.3	24–59	F (3, 69)=1.91
Pre-Seniors	11	42.9	8.6	31–58	ns
Seniors	18	38.9	7.8	22–53	
The Emotional Component:					
Cadets	25	31.2	10.3	11–50	
Juniors	18	36.6	8.7	14–49	F (3, 69)=1.87
Pre-Seniors	11	36.3	8.1	20–48	ns
Seniors	18	32.3	5.9	16–43	
The Behavioral Component:					
Cadets	25	38.5	13.0	20–74	
Juniors	18	46.8	13.8	25–72	F (3, 69)=2.74
Pre-Seniors	11	42.5	8.0	32–59	p = 0.05
Seniors	18	36.8	7.7	27–53	

Table 2. Probability values in the NIR* and the RIR Tukey (for unequal n's) tests to compare paired arithmetic means in different age categories for the GAI and the BC.

Attitude indicators	Age categories		Cadets	Juniors	Pre-seniors	Seniors	Mean
			p in NIR statistics				
General Attitude Indicator	Cadets	p in RIR statistics		0.0321			113.0
	Juniors					0.0058	130.2
	Pre-seniors						121.7
	Seniors			**0.0294**			106.1
Behavioral component	Cadets			0.0226			38.5
	Juniors					0.0124	46.8
	Pre-seniors						42.5
	Seniors						36.8

* Statistical significance of digital values in the NIR test is given in bold type; digital values in RIR Tukey test (for unequal n's) are given in regular type.

unequal n's), where juniors differed significantly from seniors (0.0294). The other age categories did not exhibit differences – they were homogenous, inseparable, and had comparable GAI's.

A significant statistical variance was noticed in the BC. The arithmetic means were statistically significantly higher in juniors than cadets (p=0.0226) and seniors (p=0.0124). The other pairs did not show much difference (the NIR test).

Health education (i.e. the need to embark on a public discussion of health issues; parents teaching their children about health; health awareness; knowledge of civilization-related hazards; expanding knowledge of health) reveals a significant statistical variance in mean values (F (3, 68)=3.43; p=0.05) (Table 3). Arithmetic means of that indicator (the NIR test) in juniors were significantly higher compared to those in seniors (p=0.0022); juniors differed significantly from seniors and revealed better-formed attitudes (p=0.0118) (RIR for unequal n's). The other age groups did not show any difference (Table 4).

The next content-related element of attitude, physical activity (the relationship between practicing a sport and a healthy lifestyle; the importance of common physical activity in propagation of health awareness; approach to physical activity recommended by physicians and

Table 3. Results of variance analysis of content-related indicators of health-oriented attitude in different age categories of amateur sumo wrestler.

Content-related elements	n	Means	SD	Min.–Max.	F value
Health education:					
Cadets	25	16.7	4.8	8–27	
Juniors	18	18.7	3.9	10–24	F(3,68)=3.43;
Pre-seniors	11	16.1	3.4	10–20	p=0.05
Seniors	18	14.5	2.7	9–21	
Physical activity:					
Cadets	25	13.6	3.6	9–22	
Juniors	18	16.7	5.4	9–26	F(3,68)=2.71;
Pre-seniors	11	16.0	4.1	9–23	p=0.05
Seniors	18	13.6	3.8	8–20	
Health control					
Cadets	25	11.0	3.9	5–18	
Juniors	18	13.7	3.3	8–22	F(3,68)=4.76;
Pre-seniors	11	13.7	1.6	12–17	p=0.01
Seniors	18	10.6	2.5	7–15	

Table 4. Probability values in the NIR* and the RIR Tukey (for unequaln's) tests to compare paired arithmetic means in different age categories for the content-related indicators.

Attitude indicator	Categories		Cadets	Juniors	Pre-seniors	Seniors	Means
			p for NIR statistics				
Health education	Cadets	p for RIR statistics					16.7
	Juniors					0.0022	18.7
	Pre-seniors						16.1
	Seniors			**0.0118**			14.5
Physical activity	Cadets			0.0199			13.6
	Juniors					0.0283	16.7
	Pre-seniors						16.0
	Seniors						13.6
Health control and treatment	Cadets			0.0080	0.0198		11.0
	Juniors					0.0049	13.7
	Pre-seniors					0.0121	13.7
	Seniors			**0.0252**			10.6

to health-oriented/recreational exercises which can be a source of pleasure and joy; involvement in physical recreation; taking up physical exercise on a daily basis; choosing physical recreation as a pastime) showed a significant variance. Arithmetic mean values in different groups varied in a statistically significant way (F (3, 68)=2.71; p=0.05). A NIR test revealed that arithmetic means in physical activity in juniors were significantly higher than those in seniors (p=0.0283) and cadets (p=0.0199). Juniors had better-formed attitudes.

Health control and treatment (conviction of effectiveness of doctor's recommendations; fear of consulting a physician and, possibly, of low standards of medical care; regular check-ups; consulting a physician only when ill) reveals a significant statistical variance in mean values (F (3, 68)=4.76; p=0.01). NIR statistics confirmed differences between means of health control and treatment in juniors and cadets (p=0.0080), and juniors and seniors (p=0.0049). Mean values of that indicator were higher in juniors. It was also found that mean values in both pre-seniors and cadets (p=0.0198) and pre-seniors and seniors (p=0.0121) were significantly statistically different as well, with pre-seniors exhibiting better-formed attitudes. Tukey's test (RIR for unequal n's) confirmed the differences between juniors and seniors (p=0.0252); no other age group configurations showed marked differences.

The remaining content-related indicators of attitude did not differ statistically (health as a value; pro-health ac-

tivities; healthy lifestyle; environmental impact; nutrition; health-detrimental habits and addictions).

Discussion

It seems that the question of how to encourage and sustain permanent physical activity in overweight and obese individuals has hardly any bearing on amateur sumo wrestlers. In view of little physical activity in contemporary society and a downright aversion to exercise among the overweight and obese part of it, sumo wrestlers constitute a rather unique example to follow, one that allows not only accepting one's physique but also succeeding in sports. The atmosphere of play and friendly competition that accompanies sumo trainings and contests, along with deep respect for the opponent make sumo an appealing sport to practice. Moreover, the budŏ philosophy which is the cornerstone of sumo education adds to the appeal. The philosophy emphasizes the importance of learning how to solve problems that a person encounters in everyday life; it molds attitudes and shapes conduct through exercising of the body and mind, developing physical fitness, and taking care of health [13]. An addition to the program of physical education of oriental martial arts which, in a recreational form, can be practiced throughout one's entire life, may prove to effectively boost physical activity of the general public [14], and be a tremendous help in life-long self-improvement and successful attainment of one's goals [9].

Study of health-oriented attitudes in children, teenagers, and adults indicates that their imperfections are many and that there is a substantial discrepancy between the cognitive and emotional components on the one hand and the behavioral one on the other [10,15]. Results of research on amateur sumo wrestlers have confirmed these findings. The fact that the best-formed health-oriented attitudes were those in juniors (aged 17–18), 80% of whom were secondary school students, bears witness to a positive influence of the educational environment, i.e. school, coaches, and parents. It appears desirable to continue investigating health-oriented attitudes in wrestlers of different age categories, with particular focus on (i) the dynamics of attitude changes in the context of a current situation and (ii) forecasts of physical and pro-health education. In so doing it is important to take into consideration other factors that impact health-oriented attitudes such as health, physical fitness, socioeconomic conditions, and comparison of attitudes of amateur sumo wrestlers with attitudes of athletes practicing other sports and people physically passive who are overweight and/or obese.

Conclusions

Health-oriented attitudes in amateur sumo wrestlers depended on their age category. The highest average rates of the General Attitude Indicator and the formal components show that it is juniors who had their health-oriented attitudes developed to the fullest. This was borne out by the fact that in juniors the content-related elements, such as health education and physical activity, were also better developed. In health control and treatment juniors' and pre-seniors' attitudes were comparable.

Study of health-oriented attitudes in amateur sumo wrestlers confirmed precedence of the cognitive component over the behavioral one, hence an urgent need to properly mold health-oriented habits in young people in order to prepare them to perform a variety of social roles in different areas of adult life.

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