

Physical Self-Efficacy of Post-Secondary Colleges Swimmers in Hong Kong 香港大專游泳運動員的身體自我效能

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Abstract

The subjects of this study were 121 (male = 76, female = 45) post secondary colleges swimmers. They ranged in age from 17 to 28 years ($M=20.36$, $SD = 1.59$). The swimmers were divided into 3 groups according to the year of participation in swimming. The Physical self-efficacy scale (Ryckman, Robbins, Thornton & Cantrell, 1982) was administered and 2x3 ANOVA was utilized to analyze the mean difference in raw scores of the three dependant variables: Perceived physical ability (PPA), Physical self-presentation confidence (PSPC) and Physical self-efficacy (PSE). Results show that the PSPC and PSE scores of experienced swimmers are significantly higher than beginners. However, the PPA, PSPC and PSE scores of both males and females are similar.

摘要

本研究邀請了一百二十一名香港大專游泳運動員(男=76, 女=45)參加, 他們的年齡是由17至28歲(平均年齡=20.36)。他們分別回答 Ryckman, Robbins, Thornton 和 Cantrell (1982) 的身體自我效能問卷。根據運動員的比賽經驗分成三組, 用2x3 ANOVA 分析身體自我效能的三個因變數: 感覺身體能力 (Perceived Physical Ability, PPA), 身體表現信心 (Physical Self-presentation Confidence, PSPC) 和身體自我效能 (Physical Self-efficacy, PSE)。結果指出有經驗的運動員的身體表現信心 (PSPC) 和身體自我效能 (PSE) 的分數比初學者高, 而男和女的和身體自我效能則分數相近。

Introduction

Behavioral changes are mediated by a common cognitive mechanism, self-efficacy, which is defined as "the conviction that one can successfully execute the behavior required to produce the outcomes" (Bandura, 1977, p. 193). Miller (1983) stated that "self-efficacy refers to self-belief in personal ability to execute specific behavior that will produce a particular result" (p. 285). Self-efficacy is fundamental to competent performance. Higher level of efficacy enhances performance while lower level inhibits it. Successful performance, vicarious experience, verbal persuasion and emotion arousal are the four sources of efficacy (Cox, 1998). Swimming is the most popular outdoor sports among the 20 to 39 years old adults in Hong Kong (Wu et. al.1998) and little research has been conducted to investigate the physical self-efficacy level of swimmers. Therefore, the primary purpose of this study was to examine the level of physical self-efficacy of Hong Kong post secondary colleges swimmers.

Method

Subjects

The subjects of this study were 121 (76 males, 45 females) Hong Kong Post Secondary Colleges swimmers. Their age ranged from 17 to 28 years ($M = 20.36$, $SD = 1.59$). The swimmers were divided into 3 groups according to their year of competition in swimming. Group 1 were those with 0-1 year, Group 2 were those with 2-5 years and Group 3 were those with more than 6 years of competition.

Testing instrument

The Physical Self-Efficacy Scale (PSES) (Ryckman, Robbins, Thornton, & Cantrell, 1982) was used in this study. The PSES was utilized to assess individual differences in perceived physical competence and individual feelings of confidence in displaying

skills in the presence of others. The scale consists of 22 items and is divided into 2 subscales: a. 10-item Perceived Physical Ability (PPA) and b. 12-item Physical Self Presentation Confidence (PSPC). The total score is the Physical Self-efficacy (PSE) ranges from 22 to 132. The higher the scores on the PSE reflect a stronger sense of Physical Self-efficacy. Test-retest reliabilities of physical self-efficacy (PSE), perceived physical ability (PPA), and physical self-presentation confidence (PSPC) were 0.85, 0.69, and 0.80 respectively. Internal consistencies of the scale ranged from 0.75 to 0.85 (Ryckman et. al., 1982). In addition, McAuley and Grill (1983) had conducted the PSE to 52 female collegiate gymnasts and concluded that PSE appeared to be a reliable and valid measure of general physical self-efficacy. Gayton, Matthews and Burchstrad (1986) also supported the validity of the PSE in a competitive sport setting.

Procedures

The investigation was conducted in Hong Kong in September 1998. Letters to explain the purposes and procedures of the study were distributed to the coaches of the swimming teams. The swimmers were invited to participate in this study voluntarily. They took about 20 minutes to complete the questionnaires.

Results

Data from the questionnaires were analyzed by utilizing the Statistic Package of Social Science for Window Version 8.0. Descriptive Statistics and 2 x 3 ANOVA (gender x years of experience) were computed.

Tables 1 and 2 showed the means and standard deviations for male and female swimmers according to their gender and years of experience.

Table 1. Means and SD for the Swimmers on the Physical Self-Efficacy Scores.

Variables	N		Male		Female	
	76		M	SD	45	M SD
PPA			36.18	6.09		36.24 6.25
PSPC			46.78	5.89		48.71 5.42
PSE			82.96	9.82		84.96 9.51

Table 2. Means and Standard Deviations for Swimmers on the Physical Self-Efficacy Scores According to their Experience.

Variables	N	0-1 year		2-5 years		6 or above years			
		M	SD	M	SD	M	SD		
PPA	37	36.95	5.56	33.52	5.53	37.72	7.07		
PSPC		45.32	4.50	45.67	5.61	51.06	6.80		
PSE		82.27	8.33	79.19	9.27	88.78	11.09		
Females	27	M	SD	7	M	SD	11	M	SD
PPA		34.78	6.58		38.71	6.24		38.27	4.63
PSPC		47.67	5.27		50.29	0.15		50.27	6.28
PSE		82.44	9.84		89.00	8.23		88.55	7.93
Total	64			28			29		
PPA		36.03	6.05		34.82	6.04		37.93	6.17
PSPC		46.31	4.99		46.82	5.59		50.76	6.50
PSE		82.34	8.90		81.64	9.87		88.69	9.85

The result of 2 X 3 ANOVA at Table 3 demonstrated that significant differences were found on mean PSPC and PSE for college swimmers in three experience groups.

Table 3. 2 x 3 ANOVA Comparing Physical Self-Efficacy Scores for Male and Female Swimmers in Three Experience Groups.

Source	SS	df	MS	F	p
PPA					
Sex	31.83	1	31.83	0.88	0.349
Experience Gp.	89.23	2	44.64	1.24	0.293
Sex x Exp. Gp	216.60	2	108.30	3.01	0.050
Error	4143.02	115	36.03		
Total	163123.00	121			
PSPC					
Sex	95.20	1	95.20	3.23	0.075
Exp.Gp.	330.94	2	165.47	5.61*	0.005
Sex x Exp. Gp	90.72	2	45.36	1.54	0.219
Error	3393.33	115	29.51		
Total	276965.00	121			
PSE					
Sex	237.13	1	237.13	2.77	0.009
Exp.Gp.	755.68	2	377.84	4.41*	0.015
Sex x Exp. Gp	405.98	2	202.99	2.37	0.098
Error	9859.04	115	85.73		
Total	859062.00	121			

* Table F(.05)(1,115)= ±h3.94
Table F(.05)(2,115)= ±h3.09

Table 4 showed the result of the Turkeys' Test for the PSPC and PSE scores. The "6 or above" group was significantly higher than the "0-1" group for the PSPC score, while the "6 or above" group was significantly higher than the "0-1" and "2-5" group for the PSE score.

Table 4. Tukey's Test Result for PSPC and PSE.

Source	Mean	0 — 1	2 — 5	6 or above
PSPC				
0 — 1	46.3125	-----	-.5089	-4.4461*
2 — 5	46.8214		-----	-3.937*
6 or above	50.7586			-----
PSE				
0 — 1	82.3437	-----	.7009	-6.3458*
2 — 5	81.6429		-----	-7.0468*
6 or above	88.6897			-----

* Significant beyond the .05 level

Discussions

Gender

The present study shows that the PPA, PSPC and PSE scores for both male and female swimmers are not significantly different. Mandell (1995) found similar result for collegiate soccer players. Watkins, Garcia and Turek (1994) also supported this finding.

Some researches found contradictory results: male has higher self-efficacy scores than females (e.g. Godin, & Shephard, 1985; Lirgg, 1991 and Weinberg, Gould, & Jackson, 1979). Cann (1991) pointed out that females received less support and encouragement to participate in sport activities. Jones, Swain and Cale (1991) conducted the self-confidence questionnaire to 28 male and 28 female university athletes and found that males had higher self-confidence score. Moreover, Corbin (1984) found females often lacked confidence under certain conditions in physical activity settings. Grayden (1997) stated that the perceived physical competence for girls were lower than boys. He explained that the feeling of self-worth is not static, it will be influenced by many factors. Women generally displayed less confidence than men on the male-appropriate tasks, while no gender differences were found on the female-appropriate tasks. (Grayden, 1997) In addition, Lirgg (1991) had utilized meta analysis to examine gender-differences in self-confidence in physical activity and pointed out that female has less confidence than male when the task was male oriented. He also reported that as female children grew older, their self-confidence decreased.

In the present study, male and female swimmers have similar physical self efficacy score, Grayden (1997) classified swimming as neutral sport activity and this may explain the finding of the present study.

Experience

The PSPC and PSE scores of experienced swimmers are higher than less experienced swimmers in this study. George (1994) stated that college baseball players had high self-efficacy score than high school players. On the contrary, Koczajowski (1997) compared the physical self-efficacy scores for professional and amateur golfers and no significant differences were found.

Schmidt (1991) stated that practice and experience can develop motor program and automaticity, thus the capability for skill performance can be improved. George (1994) pointed out that successful athletes demonstrated greater self-confidence than less successful athletes. Therefore, increase in year of experience

may increase self-confidence.

According to Bandura (1977), enactive experience is one of the sources of efficacy information and personal performance accomplishments increase with year of experience. It is therefore not surprising to find in this study that experienced swimmers have higher self-efficacy score. In particular, the "6 or above" group had significant higher physical self efficacy. This may reflect that those who choose and persevere in swimming competition are those with higher physical self efficacy scores.

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