DISCUSSION AND CONCLUSIONS

The results of this exploratory research reveal that co-acting exercisers report more favourable affect after their exercise workout than interactive exercisers. One exception was physical exhaustion, that was lower in interactive exercisers. This observation may be due to lesser "perceived" fatigue resulting from sustained mental focus on interaction rather than on associative thoughts that can freely occur in individual and co-acting exercises. The observed differences in positive affect may be attributed to a number of factors. The skills involved and outcome orientation in the two types of exercises can influence affect (Abele & Brehm, 1993). Further in co-acting physical activities the exercisers maintain control over their exercise while in team activities they interact and their success or failure largely depends on others' work too. The evolution of the latter has a significant influence on the post-exercise affect experienced by interacting team exercisers (Abele & Brehm, 1993).

Given that no comparable research exists in the literature, the explanations given above should be considered as tentative. Knowing that differences do exist between the post-exercise affect experienced by co-acting and interacting exercisers, future inquiries need to explore the effects of mediating variables. Among these, attention should be given to the degree of control over one's exercise behaviour, the type of interaction, skill components, sex, attentional focus, performance roles, and self-efficacy. Although the current study does not shed light on the role of these mediating variables, it reveals that co-acting physical activities may be preferred when exercise is prescribed for affective benefits.

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TENNIS MATCH PSYCHOLOGICAL ANALYSIS

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(A) KEY WORDS
Tennis match analysis, tennis psychology.

(B) INTRODUCTION
This program is based on the comprehensive strategy of establishing determinants of player's performance in tennis. Its **objective** is to teach the player and the coach how to recognize the player's mental, technical, tactical, and partially also fitness, virtues and shortcomings. The program also contains recommended procedures for eliminating the found problems.

(C) METHOD AND PROCEDURE
The whole **program** is divided into **several modules**. The first serves for registration of variables, the second classifies them according to chosen psychological principles, the third serves for their statistical, graphical, and verbal interpretation, the fourth covers theoretical knowledge from psychology of tennis and the fifth offers application methods for changing undesirable states. Independently from recorded tennis matches, it is possible to study the theoretical and application questions of tennis psychology.

List of observed variables
Technique

1. Service	Direction	Net	Out	Point
First	1,2,3	4	5,6,7	W, Unforced error
Second	1,2,3	4	5,6,7	W, Unforced error

2. Kind	Type	Direction/side	Depth
Forehand	return	down the line from	short
Backhand	volley	the backhand side	medium
Smash	passing	down the line from	long
	shot	the forehand side	
	lob	down the middle	
	ground	cross court from	
	stroke	the backhand side	
	drop shot	cross court from	
		the forehand side	
		down the middle into	
		the backhand side	
		down the middle into	
		the forehand side	
		down the middle from	
		the forehand side	
		down the middle from	
		the backhand side	

Change of direction	Change of depth	Point
down the line/down the line	short/short	Winner
down the line/down the middle	short/medium long	Unforced error
down the line/cross court	short/long	Forced Error
cross court/cross court	medium long/short	Lucky
cross court/down the middle	med.long/med.long	
cross court/down the line	medium long/long	
down the mid./down the mid.	long/short	
down the middle/ cross court into the backhand	long/medium long	
down the middle/ cross court into the forehand	long/long	

3. Smash: Point: Winner Unforced Error Forced Error Lucky

Tactics

Playing systems

a) whole-court system
b) activity at the net
c) activity in the middle part of the court
d) activity at the baseline
e) playing from the backhand side of the court
f) playing from the forehand side of the court
g) playing from the middle of the court

Fitness versus Mind

1. Time length of the point on the slow and fast surfaces.
2. Break length before each point.

Psychological indices of the tennis match

1. Arousal index 1
2. Anticipation index
3. Mental toughness index 1
4. Motivation index
5. Index of the player's mental state 1
6. Index of the player's mental state 2 (Efficiency curve)
7. Auto-relaxation index (Efficiency curve)
8. Prerequisites index 1 (Efficiency curve)
9. Index of psychophysiological preparedness
10. Index of psychophysiological toughness
11. Prerequisites index 2 (Efficiency curve)
12. Relaxation index (Efficiency curve)
13. Arousal index 2 (Efficiency curve)
14. Arousal index 3 (Efficiency curve)
15. Fatigue index 1 (Efficiency curve)
16. Fatigue index 2 and Mental toughness index 2 (Efficiency curve)
17. Arousal index 4 (Efficiency curve)
18. Fatigue index 3 and Mental toughness index 3 (Efficiency curve)

(D) RESULTS

The program automatically classifies the most important data in the statistical, graphical, and verbal forms. An additional function of the program is the classification of data using any chosen key. The program also enables comparing of individual observed variables with other matches according to selected criteria.

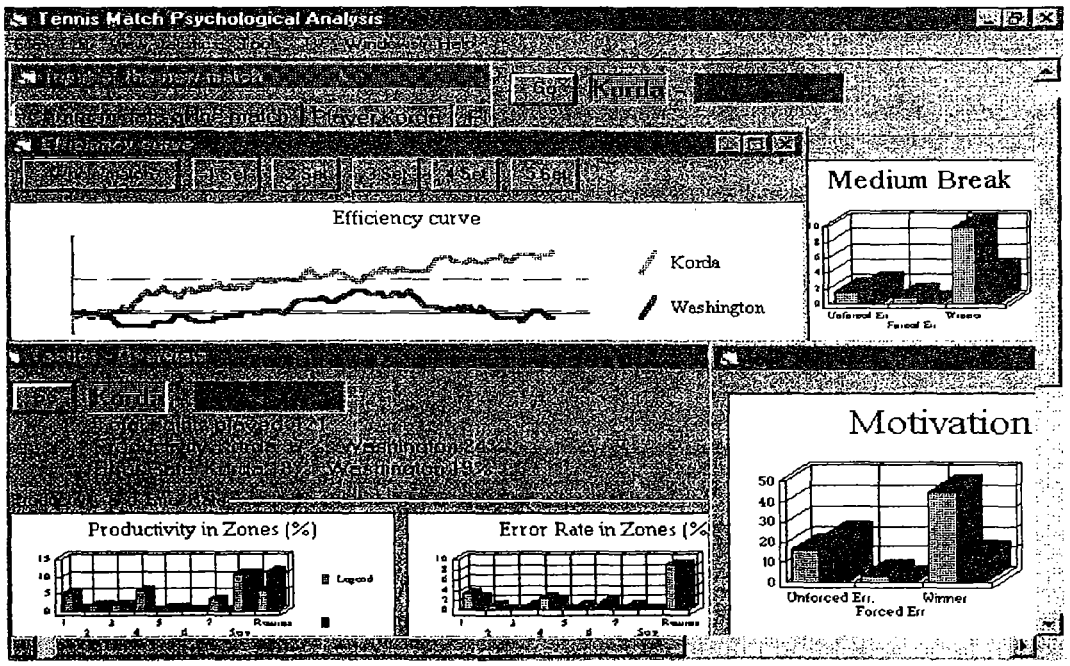
(E) DISCUSSION AND CONCLUSIONS

The program enables recording and processing of a number of observed variables (about 70 variables) of the match. By means of comparison of some various matches it is possible to evaluate the efficiency of the player in the term of the given time limit with regard to the different playing conditions. The specificity of the program lays with the possibility of the monitoring of all items of sport training simultaneously: techniques, tactics, physics and mental. That is why the complex monitoring of the tennis player personality in the action (in the match) is guaranteed.

(F) REFERENCES

The whole **program is original** and it is a result of several years' research of **PHDR. JIŘÍ ŠLÉDR**. The psychological part of the program has been consulted with the specialists within the **Association of Sport Psychologist of the Czech Republic**, the tennis part of the program has been consulted with the specialists of the **Czech Tennis Association**. The reviewer of the psychological part of the program is **PROF. PHDR. MIROSLAV VANĚK, DRSC.,** the emeritus President of the International Society of Sport Psychology. The reviewer of the tennis part of the program is **ING. SVATOPLUK STOJAN, CSC.** (the emeritus National Coach of Switzerland. Software quality is guaranteed by **CT - GROUP, A.S.**

This program was successfully used for the preparation of players before the Davis Cup matches of the Czech Republic against the USA, Sweden, and India.



THE INFLUENCE OF PHYSICAL ACTIVITY ON SENIORS

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KEY WORDS
personality type, performance motivation, difference in neuroticism, personality changes

INTRODUCTION

The senior's club at FTVS UK Praha was established in 1996. This senior club provides a variety of physical activities, in which seniors can participate ones a week. The exercise sessions are lead by qualified instructors. A large number of people, who are interested in physical activities confirmed our believe that many seniors would like to improve their health and live independent in their environment.

The aim of this program is to increase quality of life.

WE HYPOTHESIZED THAT

1. There are personality differences in temperament and in performance motivation between seniors who exercise on a regular basis and seniors who do not exercise.
   a) The seniors, who exercise on a regular basis, are extroverts and stable. The seniors, who do not exercise are introverts and unstable.
   b) The seniors who exercise have higher level of performance motivation.
2. Physical activity can influence the formation of the personality type in old age.

METHOD

The group of seniors was observed from various health and functional points of view. The purpose of this study is to find the influence of regular physical activity on senior's personality.

We worked with two groups of people who were older than sixty years. Thirty seniors in the experimental group took part in our regular exercise program. Twenty seniors in the control groups didn't exercise regularly.

We tried to find out differences in the personality type and in performance motivation.

EPQ – Eysenck personality questionnaire and the performance motivation questionnaire were used to evaluate personality and motivation respectively.

RESULTS AND DISCUSSION

In accordance with the extrovert and introvert characterization it appears that people who take part in a regular physical exercise program are more frank, more outgoing, active and sociable. It means they can be classified as extroverts.

On the other hand it can be assumed that people who do not take part in exercise program are more passive, more reserved, inaccessible and less social, less confident, they have more inhibitions, and they concentrate on their own world. It means they are classified as introverts. These characteristics can be found, especially in answers to questions about hobbies or about the type of physical activity. Differences in relationship to the regular exercise can also be seen.

The following results confirm our hypothesis.

Table 1.

Temperament	*exercise group.*	*Non excercise group.*
Melancholik	**33 %**	**50 %**
Sanguine	**20 %**	**25 %**
Phlegmatic	**33 %**	**20 %**
Choleric	**14 %**	**5 %**

The introverts dominated in both groups. There is the difference in neuroticism between the groups. The measure of representation of unstable people is higher for those who do not exercise. The number of unstable and stable people is equal in the exercise group of seniors.

The " ideal change " from introvert to extrovert or from unstable to stable was noted only in 10% cases. The changes in neuroticism and extroversion are more pronounced. We did not find the complete change from introvert to extrovert or from unstable to stable type but we could see a tendency towards the ideal change over a period of time. For seniors who exercise this trend was noted in neuroticism level in 40% of cases changing from unstable to stable. In the extroverzion level changes were observed in introvert to extrovert direction in 23% of cases.

The results showed some personality changes for people who do not exercise, but these changes did not have statistical significance. It appears that these changes were caused by various life variables.

Active seniors demonstrated, that physical activity brings pleasure to some people, their self-confidence increases, people discover their abilities, they learn to know their body, they are more efficient, more sure of themselves. They felt also more relaxed. All these developments led to a more psychologically stable life .

The reasons for changes towards extroversion can be in the "well feeling" factor. People who feel well, can be characterized as self-confident, frank, courageous and assertive. A friendly environment can also contribute to the development of these personality characteristics.

We also compared the motivation questionnaire results of seniors, who do exercise with the results of seniors who do not exercise. The average score of motivation of seniors who do exercise (6,04 out 10 points) is higher than the scores of the exercise group of seniors (5,5 from 10 points).

The higher motivation level in the group of seniors who took part in exercise program can be explained by the following factors: incentive feelings, which were affected by their good physical condition, intensive enjoyment of life and a more optimistic outlook to the future. These people were able to manage difficult situations, which their lives bring. Higher motivation can support their efforts to plan their future. They want to live life to the fullest.

The comparison of both groups in anxiety and performance variables is also very interesting. Results of this study suggest that the seniors who do not exercise are more anxious than the seniors who do not exercise.

Table 2.

Seniors who do exercise	**4,85**
Seniors who do not exercise	**5,45**

This may be why the seniors without regular physical activity do not want to take part in exercise programs. May-be, they are afraid of the problems connected with exercise, such as self-consciousness in public, and juries and their treatment.

The differences between the two groups of seniors, who completed both questionnaires, show the effect of regular exercise on personality type and performance motivation. These differences show the benefit for seniors who take part in exercise programs. This study analyzed data of a small sample of seniors so the results can not be generalized to the general population, but they indicate the effect of regular exercise on development and the state of some personality characteristics in old age.

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PERCEPTION OF MOTIVATING FACTORS OF DIFFERENT SPORT PROGRAMS IN CHILDREN AGED 10-11 YEARS

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KEY WORDS
enjoyment, competence, intrinsic motivation,children

INTRODUCTION

Intrinsic motivation in sport and exercise, i.e. exercising purely for fun and self-fulfillment and not for any of the extrinsic reasons (rewards, winning or else) becomes an issue of more research studies recently (Scanlan & Lewthwaite, 1986; Buonamano et al., 1995; Fortier et al., 1995; Horga and Štimac, 1995).

The concept of intrinsic motivation was operationalised in several ways: as Weiss, Bredemeier and Shewchuk's I/E scale, as Sport Motivation Scale (SMS) by Vallerand et al.(according to Fortier et al., 1995) or as well known Intrinsic Motivation Inventory IMI (Ryan, 1982, according to McAuley et al., 1995), developed as a multidimensional measure of subject's experience in experimental tasks, but being usable in other tasks as well. The 27 items inventory measures intrinsic motivation as an additive function of four dimensions: interest-enjoyment, perceived competence, effort-importance and pressure-tension.

McAuley et al.(1989) modified IMI into 18 items version and applied it immediately after the competition in prior exercised basketball shooting game. In their field study Scanlan and Lewthwaite (1986) examined the problem of motivation during and after exercising wrestling for a longer period. In these and other investigations subjects were well acquainted with the activity or they performed it at least several times before answering the motivation inventory. But, would subjects, future participants, act according to the intrinsic motivation principles too when selecting program as they do when participating in already chosen activity? Or, what do the future participants expect to be the potential source of fulfillment of their motives before the program starts?

The issue of this paper is therefore focused on the period before starting the actual engagement in a freely adopted sport activity program. We tried to answer the question whether there exists any difference in the dimensions of intrinsic motivation among students who freely choose from the basketball, table tennis and track-and-field programs for boys and volleyball and rhythmic gymnastics programs for girls.

METHOD AND PROCEDURE

Students from three fifth classes of the "Matija Gubec" primary school in Zagreb, aged 10-11 years, participated in the study. They freely chose one from the offered sport programs. Subject were 35 boys (basketball 17, table tennis 12, track-and-field 6) and 28 girls (volleyball 11, rhythmic gym. 17).

The programs were being realized throughout the schoolyear (10 months), 5 hours a week. Before actually starting the chosen activity, but being already acquainted with it, the children answered Ryan's IMI with 4 dimension: interest-enjoyment, perceived competence, effort-

importance and tension-pressure, assessed by 18 items given on the 5-point scale, ranging from "never so" to "always".
Three analyses of differences: between sports for girls, between sports for boys, and between girls and boys (genders) were accomplished by ANOVA. To determine the differences between dimensions for the each sport group independently t-test for the dependent samples was employed- All analyses were accomplished by the STATISTICA program for Windows.

RESULTS

There are no differences between sport groups and between genders in any dimension of intrinsic motivation (The results of ANOVA are not presented here because of their statistical insifignificance). In other words, all groups, independently of the sport preferred or gender answered similarly to the items of tension, effort, competence and enjoyment scales incorporated in the IMI. This fact can be easily seen in the rows of Table 2, which contains means for groups in every dimension.
Table 1 shows that in some instances there exists difference between dimensions in almost every sport group. The main cause for these differences is the dimension of tension, significantly different from all other dimensions. Track-and-field group failed to show any significant difference except between tension and effort, probably because of a small number of subjects.

TABLE 1. Sport groups in which T- tests for dependent samples between four dimensions of intrinsic motivation are significant, $p<0.02$ (RG = rhythmic gymnastic, TT = table tennis, VL = volleyball, TF = track-and-field, BB = basketball)

	effort	competence	enjoyment
tension	RG, TT, VL, TF, BB	RG, TT, VL, BB	RG, TT, VL, BB
effort			RG

In Table 2 it can be seen that tension has the lowest grade in each sport group in comparison with other dimensions all of which have grades above 4.

TABLE 2. Means of four dimensions of intrinsic motivation according to the sport activity

dimensions	volleyball	rhythmic gymnastic	table tennis	track-and-field	basketball
tension	2.20	2.59	2.77	3.21	2.50
effort	4.30	4.43	4.40	4.54	4.37
competence	4.05	4.27	4.42	4.20	4.12
enjoyment	4.31	4.08	4.33	4.17	4.16

Therefore, in this experiment all intrinsic motivation dimensions were similarly assessed by children, independently of thear sport preferences or gender. Further, they perceived offered sport activities as those that require the exertion of effort, for which they are competent and which they enjoy, but in which they don't expect to feel tension.

DISCUSSION AND CONCLUSION

We presumed that the possibility to freely choose the sport activity would reveal the various inherent motivational meanings that subjects ascribed to these activities. Obviously, this was not the case. That is in accordance with the results of Wankel and Kreisel (1985) who, by means of another motivation inventory, failed to obtain significant differences between young players of soccer, baseball and hockey. So, independently of program and even gender, children perceived sport activities in the similar way.

More important is the second finding: subjects actually graded the dimensions of intrinsic motivation differently. While interest-enjoyment, perceived competence and effort-importance got almost the highest grades, tension-pressure got hardly mean grades. It seems that this finding is independent of age, because McAuley's (1989) subjects, mean age of 21.35 years, showed the same grading, the highest grades for the first three dimensions and the lowest for tension. This finding is also in accordance with Wankel and Kreisel's results with enjoyment and skill competence on the top of the motives list.

The second finding could be considered as a sport-optimistic one because the above mentioned three facets of intrinsic motivation are the strongest and the tension the weakest in experiencing the first contact with the sport program. The next project step is to analyze whether the children's' perceptions of sport engagement change in the middle and at the end of the program application or not.

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EVALUATION OF GAME-RELATED STRESS CONDITIONS IN MALE AND FEMALE SOCCER REFEREES

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KEY WORDS: Stress, evaluation, questionnaire survey, male and female soccer referees, game-related conditions.

INTRODUCTION

According to the fundamental theoretical model of Lazarus & Launier (1981) the development of stress in a person, who is confronted with a specific stressful situation, can be described in a cognitive process model of three phases. In the first phase of the primary appraisal a person evaluates a specific situation as irrelevant, benign/positive or stressful. The reasons of the evaluations of a situation to be stressful can be personal harm/loss, thread or challenge. The secondary appraisal consists of the subjective assessment of the abilities of the person under the specific circumstances and the possibilities of coping with the situation. The reappraisal incorporates a new evaluation of the situation after the alteration of the transaction as a result of the secondary appraisal.

On the basis of this fundamental theoretical framework the activity of referees in soccer on and off the field can be described in a differentiated way. In general, the activity of referees in soccer is obviously associated with various kinds of psychological stress conditions. The subjective interpretation of the requirements of the tasks of the referee by the players, the coaches, the club representatives, the journalists and the referee observers can result in low to high degrees of stress in the specific referee.

Heisterkamp (1977) decribed the activity of referees in soccer from the expectations and perspectives of the players, the spectators and the coaches. He pointed out the different views and requirements of the referee from the three different groups.

Taylor & Daniel (1988) analysed the stressful conditions of referees by means of the soccer officials' stress survey. The questionnaire consisted of 53 items in respect of potentially acute and chronical stressors in the activity of soccer referees. 215 referees from low to high leagues in Canada answered the questionnaire. These referees were between 31 and 50 years old and had experience as referees from 6 to 15 years. The most stressful event was the referees' assessment of having a bad game. The second highest amount of stress was perceived in the case of working with poor officials. The third highest degree of stress was evaluated in the situation of making a bad call. Furthermore, comparatively stressful events were the interaction with players or coaches who had not enough knowledge of the laws, dismissing players, dealing with over-exited or hostile coaches and dealing with abusive players. Lower degrees of stress were perceived in the events of spectators being close to the field, violence/fighting in the game and the intrapersonal conflict between officiating asnd daily demands. 87% of the 215 referees had already made the experience of players or coaches who had not had enough knowledge of the laws. More than 70% of the referees had already been confronted with the conditions of very important games to one or both teams, spectators being close to the field and aggressive games. By means of the factor analysis 6 factors could be

extracted from the 53 items. These 6 factors were: interpersonal conflicts, fear of physical harm, time pressures, peer conflicts, role-culture conflict and fear of failure.

In the present study the attitudes of male and female referees in soccer were analysed in respect of their evaluations of specific stress conditions in daily life, before, during and after the game.

METHOD AND PROCEDURE

The present study is based on a questionnaire survey concerning the evaluation of stress of referees in daily life, before the game, during the game and after the game. The specific questionnaire consisted of 64 items in respect of stressful conditions of male and female referees. These 64 stress conditions were rated on a 7-point-scale from '1=not stressful' to '7=very stressful'.

The exploratory study was conducted with samples of male and female german referees. 27 male and 26 fenmale referees from amateur to professional level took part in the investigation. The average age of the male referees was 39.4 years and of the female referees 30.4 years, thus the male referees were more than 9 years older than the female referees. The male referees showed with an average of 19.4 years more than 9 years longer experience as referees than their female colleagues with an average of 10.2 years.

RESULTS AND DISCUSSION

The description of the results refers to the comparison of stress evaluations between male and female referees in daily life, before the game, during the game and after the game.

In reference to the stress conditions in daily life, the male and female referees considered the severe challenge in the original profession as most stressful. The conditions of insufficient preparation for the game and the manifold activities in the family were regarded as comparatively less stressful. The male referees evaluated the severe challenge in the original profession as tendentially higher stressful than the female referees.

Concerning the situation before the game the male and female referees showed high stress assessments in the conditions of a long travel to the site of the soccer game and the perception of their own nervousness. The male referees felt a higher amount of stress in the interaction with the teams' representatives than the female referees. On the other hand, the female referees looked upon the self-perception of their own nervousness to be more stressful than the male referees.

In respect of the situation during the game high stress evaluations in the group of the male and female referees were found in the conditions when a referee had not seen an aggressive action behind his back, when he decided on a penalty after an obvious fake, when he was in danger of losing the control of the game and when he did not perceive a tackle from behind. The male referees evaluated the condition of a high win of the home team, the necessity of a demonstrated leadership of the game especially at the beginning and handing out a yellow-red card after repeated fouls as significantly higher stressful than the female referees. Moreover the male referees regarded the game result of a tie after a hard and intensive fight of both teams as more stressful than the female referees. Furthermore the male referees

showed higher stress assessments than the female referees in the conditions of a bad cooperation with the referee assistants in situations of off-side, the decision of direct free-kick on the border line of the penalty area, handing out the yellow-red card after repeated fouls and sanctioning by the yellow card after an unclear situation.

In reference to the conditions after the game high stress assessments were detected in the situations of a negative evaluation by the referee observer and the expectation of a negative evaluation by the media because of an obviously wrong decision. The male referees manifested higher rates of stress sensations in the conditions of the interaction with players of the losing team and the interaction with normally engaged spectators of the losing team than the female referees. Besides the male referees felt higher degeres of stress than the female referees in the situations of the interaction with the coach of the losing team and the reproach of lacking sensitiveness in specific unclear game events

Thus, the male referees obviously showed significantly higher degrees of stress evaluations in more than 10 of the 64 specific conditions in daily life, before, during and after the game than the female referees. These findings could apparently be due to the fact of the longer experience as referees and hereby the higher degree of sensitiveness to stressful situations in the male referees in comparision with the female referees.

The present study showed similar findings concerning stressful evaluations of referees as the investigation of Taylor & Daniel (1988). What is more, the present study included the sample of the female referees, who apparently had been less experienced and less sensitive to manifold stressor in the activity of referees than their male colleagues.

The findings of the present study should be incorporated in the educational programme especially of young and unexperienced, but also of older and more experienced male and female referees. The knowledge of the kinds and degrees of game-related stress conditions and of dealing with these situations by means of specific coping strategies seems to be obligatory in the education programme of high quality referees.

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ATTITUDE TOWARDS STRESS CONDITIONS IN GERMAN AND JAPANESE SOCCER PLAYERS

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KEY WORDS: Attitude, stress conditions, questionnaire study, male and female german and japanese soccer players.

INTRODUCTION

The male and female soccer players are educated in a long-lasting process of training and competition. This educational process mainly includes the improvement of speed and endurance and of various kinds of technical and tactical skills. But the educational process also comprises ways of perception, anticipation, decision making, reaction planning as well as the evaluation of and coping with several kinds of stressful situations. This evaluating and coping process can be described in 3 cognitive phases, according to Lazarus & Launier (1981). In the first phase of the primary appraisal the player perceives a specific situation in training or in connection with the game as irrelevant, benign/positive or stressful. The secondary appraisal consists of the subjective assessment of the abilities of the player under the specific circumstances in training or in relation to the game as well as the possibilities of coping with this situation. The reappraisal incorporates a new evaluation of the situation after various kinds of coping strategies have been considered or at least partly realised. According to Teipel (1992), female german soccer players showed higher degrees of stress assessments in respect of conditions in training, before, during and after the game than male german soccer players.

In the present study the attitudes towards stress conditions in training, before and after the game were investigated in comparison of male and female german and japanese soccer players.

METHOD AND PROCEDURE

The present study is based on an investigation by means of a specific questionnaire in respect of stress conditions of male and female soccer players in training, before and after the game. The specific questionnaire comprised 35 situations, 15 of which were related to conditions in training, 10 to conditions before the game and 10 to conditions after the game. These 35 stress conditions were rated on a 7-point-scale from '1=not stressful' to '7=very stressful'.

The whole group of the questionnaire study consisted of 230 male and female german and 400 male and female japanese soccer players. The group of the male soccer players included 130 german and 246 japanese soccer players from high to low male league levels. The group of the female soccer players encompassed 100 german and 154 japanese soccer players from high to low female league levels. The male and female german soccer players were a lot older and more experienced than the japanese male and female soccer players. In the present study the attitude of the male and female german and japanese soccer players towards specific stress conditions in training, before and after the game were analysed.

RESULTS AND DISCUSSION

The results are described in respect of the comparison of the attitude towards stress conditions between 100 german and 246 japanese male soccer players as well as between 130 german and 154 japanese female soccer players.

Comparison Between Male German and Japanese Soccer Players

The 246 male japanese soccer players showed in 12 from 15 stress conditions in training significantly higher stress assessments than the 130 male german players. The male japanese soccer players evaluated the conditions in training as more stressful than the male german soccer players, when they conducted boring exercises, when the training required too much time, when the field conditions were poor, when some teammates played aggressively, when some exercises were regarded as inefficient and when the final training before the game was too intensive. But the male german players perceived the situation as more stressful than the male japanese soccer players when there were conflicts between the players and the coach.

Concerning the conditions before the game the male japanese soccer players displayed in 9 from 10 situations higher stress evaluations than the male german players, but in one situation a significntly lower stress evaluation. The male japanese soccer players assessed the events as more stressful than the male german players, when they were attacked verbally by the opponent spectators during warming-up, when they had to play against the best player of the opponent team, when the opponent team was known for its hard playing style, when a referee acted with whom there had been conflicts in the past and when they had to play on a team position which they did not like. In contrast, the male japanese players showed a lower stress evaluation than the male german players in respect of the situation when they were taken off the team shortly before the beginning of the game.

In respect of the conditions after the game the male japanese soccer players displayed in 4 from 10 situations significantly higher stress assessments than the male german players. The male japanese soccer players perceived the situations as more stressful than the male german players, when they were criticised by their teammates despite adequate performance, when the coach did not give any explanation for the substitution, when the journalists evaluated the performance negatively and when the loss had been caused by a poor performance of the referee. On the other hand, the male german soccer players rated the conditions as more stressful than the male japanese players, when the injury turned out to be worse than expected, when the poor performance had been caused by lacking effort of some teammates and when there was a lack of cohesion in the team after a loss.

Comparison Between Female German and Japanese Soccer Players

The 154 female japanese soccer players manifested in 13 from 15 stress conditions in training significantly higher stress evaluations than the female german soccer players. The female japanese soccer players assessed the conditions by far more stressful than the german soccer players, when some boring exercises were conducted, when they were not challenged up to their abilities, when the final training before the game was too intensive, when the training required too much time, when some exercises were regarded as inefficient, when some teammates played aggressively, when the field conditions were poor and when there was not enough training.

In reference to the situations before the game the female japanese soccer players assessed 9 from 10 conditions as more stressful than the female german players. Thus, the female japanese players manifested markedly higher stress evaluations than the german players in the situations, when the expectations of the club managers were unrealistically high, when a referee acted with whom there had been conflicts in the past, when they were attacked verbally by the opponent spectators during warming-up, when they had to play against the best player of the opponent team, when they had to play on a team position which they did not like and when the coach applied wrong tactics according to their opinions.

Concerning the situations after the game the female japanese soccer players perceived 6 from 10 conditions as more stressful than the female german soccer players. These 6 conditions were, when the player was criticised by the teammates despite adequate performance, when the spectators whistled because of the poor performance, when the player had caused the loss by a fault, when the coach did not give any explanation for the substitution and when the coach attributed the loss to lacking motivation. In contrast, the female japanese soccer players showed a lower stress evaluation than the female german players, when the poor performance had been caused by lacking effort of some teammates.

Thus, the male japanese players manifested in 25 from 35 conditions in training, before and after the game significantly higher stress assessments than the male german players. Furthermore, the female japanese players showed in 28 from 35 situations markedly higher stress evaluations than the female german players. The distinct differences in the attitudes towards specific stress conditions could apparently be due to the vast differences in age and experience between the male and female german and japanese soccer players. The male and female german players were by large more experienced than the male and female japanese players. Because of their greater degree of experience the male and female german players had apparently become more adjusted to the various kinds of stress conditions in training, before and after the game in comparison with the male and female japanese players. Besides, there seems to be a more pronounced tendency of internal attribution of performance deficits, faults and negative feedback from other persons in the male and female japanese soccer players than in the male and female german soccer players, which may also be due to somewhat cultural differences.

It seems necessary to include the results of the present study in the further education of young and unexperienced male and female japanese and german soccer players. As a consequence, specific conclusions should be drawn in respect of specific kinds of coping behavior in order to deal with the various kinds of stress conditions adequately and effectively in terms of performance enhancement.

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EXAMINATION OF ATTENTIONAL FLEXIBILITY AND TARGET DETECTION IN HIGH AND LOW LEVEL ATHLETES VARYING IN AGE

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(A) KEY WORDS

Attentional flexibility, target detection, age, skill-level.

(B) INTRODUCTION

Research has shown that experts use their knowledge base to allow faster and more accurate interpretation of stimuli present in game situations, and to facilitate more rapid and accurate retrieval of appropriate previous experiences. The present stimuli are "chunked" in a manner that depends on the experience and knowledge, which has been gained through deliberate practice (Ericsson et al., 1993), and exposure to many similar situations in the past. The superior short-term memory performance is also facilitated through the process of packing more information into the same amount of memory (see Ericsson & Kintsch, 1995 on "long-term working memory" and Tenenbaum et al., in press). Earlier studies have shown that experts are superior in their use of strategies that enable the detection of a target within the environmental display (Beitel, 1980) via the use of memory representations which are sensitive to the objects in the display (Neisser, 1967; Prinz, 1979). In addition, selective and flexible attention was found to differentiate between expert and novice athletes in a variety of sport, (Nougier et al., 1989; Nougier et al., 1990), a trait which enables athletes to better cope with unexpected stimuli in the playing environment.

The first study reported here is aimed to directly challenge the "chunking" hypothesis in basketball using high and low level basketball players in 3 age-categories. The second study was designed to build on the previous research on attentional flexibility. High skilled tennis players are compared to low skilled players in 3 age-categories on a tennis computerised task which mimic the game of tennis. A cross-sectional developmental approach was adopted in the two studies.

(C) METHOD AND PROCEDURES OF STUDIES 1 AND 2

Eighty-one (81) and fifty-nine (59) female basketball players divided into 3 age-categories, 11-14, 15-17, and >17 years of age participated in Study 1. Low skill-level players were obtained from local clubs and high schools while high skill-level players were obtained from the State Academy of Sport Junior Development Squad and high level basketball clubs. The participants in Study 2 were ninety (90) male players divided into 3 age-categories: 11-14, 15-18, and >18 years of age. Within each age-category, half were classified as high-skill players and half as low-skill players. All were members of tennis clubs and practiced at least once per week. Skill-level was determined in conjunction with coaches' judgements and players' achievements and rankings.

To examine target detection (Study 1), the participants were required to respond to basketball game scenes presented to them on a large computer screen using the left and right mouse buttons. Eighty (80) game scenes were viewed of which half were structured and half transitional and within them, half contained a distracter (missing ring, line marking, etc) and half not. Participants were instructed to respond as fast as they could by pressing the left

mouse button to respond "no distracter present" or right mouse button to respond "distracter present" per each scene. Time (DT) and Accuracy of Decision (DA) were the DVs.

To measure attentional flexibility in tennis, the cost/benefit paradigm (Posner & Snyder, 1975) was applied to tennis. The player was required to respond to a moving tennis ball appearing on the computer screen with his index finger on the left key and middle finger on the right key, depending on the direction of the ball. Participants were primed to expect that if the ball is hit from the middle court there is a 50% chance to left or right direction ("neutral"), and if ball is either right or left, it is expected to be hit across court (80%, "benefit") or on the line (20%, "cost"). Each player received 450 trials, 150 in neutral condition, 60 "cost" and 240 "benefit" conditions, respectively. Within each of these conditions one-third had warning-imperative stimuli foreperiod of 05, 1.0, and 2.0 seconds, respectively. Foreperiods were randomly distributed among all trials. Decision Time (DT) was the DV.

(D) RESULTS

Study 1

Mixed RM ANOVA performed separately for DT and DA revealed that players of age 11-14 were slower then their 15-17 and >17 years counterparts by 1.53 second (Effect Size (ES) = 0.70) and by 1.0 second, respectively. As age increased skilled players made faster decisions however, low skilled players did not. Players were found to make slower decisions when observing structured game scenes then transitional ones by an average of 0.73 second (ES = 0.32). There was an average of 1.71 seconds (ES = 0.69) increase in DT when a distracter was absent in the scene. High skill players were 3.9% more accurate than low-skill players in their decisions, and 11-14 age players were less accurate than 15-17 years by 7.3% (ES = 0.70) and >17 by 5.3% (ES = -0.50) across game situations.

Study 2

Mixed RM ANOVA applied to DT revealed significant effect ($p<.001$) for age but not for skill-level. DT became faster with age. Players reacted faster to the "benefit" then to the "neutral" and "cost" conditions. DT was similar in the 0.5 second and 1.0 second foreperiod conditions but significantly ($p<.05$) slower in the 2.0 second delay.

(E) DISCUSSION

The main question approached in the two studies was whether task-related cognitive components such as target detection and attentional flexibility develop with skill-level and experience. The computer simulated tasks failed to show that with experience the differences between high and low skill players increase with age, i.e. years of experience, as shown in Figure 1.

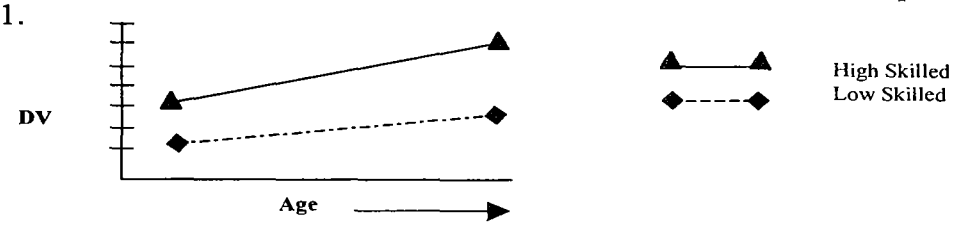

Fig. 1. Hypothesized Age by Skill Level Effect on any Task-Related Cognitive Component

The studies have confirmed that cognitive skills improve with age and skill-level, and experimental conditions resulted in changes of decision time and accuracy. The lack of the expected interaction can be attributed to two main shortcomings: (a) the task does not accurately represent the real world of sport (i.e., lack of ecological validity), and (b) computer simulation is perceived as regular computer games with which young children are very familiar (both high and low skill-level). Thus developmental perspectives in sport should be studied in the real world in which they occur.

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HOW DO PEOPLE COPE WITH EXERTIVE EXPERIENCES?

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(A) KEY WORDS

exertion, coping strategies, physical task

(B) INTRODUCTION

Theory on motivation suggests that goal orientation and self-efficacy are major determinants of how much effort a person will invest in a task and how long he/she adheres to it depending on the nature of the task. Task-specific psychological states such as perceived ability/competence, self-efficacy/confidence, commitment/effort, and exertion/feedback tolerance are important attributes which may determine how well the person can cope with the environmental conditions he/she is engaged in (see Roberts, 1992). The purpose of the two studies reported here is to examine the relationship between the dispositional (i.e., goal-orientation and physical self-efficacy), task-specific states, and performance under manipulated conditions which evoke feelings of exertion.

(C) METHOD AND PROCEDURE OF STUDIES 1 AND 2

Participants in Study 1 were forty-seven (47) males (mean age: 22.53 years, SD = 5.98) of whom one-third were runners, one-third were ball-game players, and one-third were untrained. Participants in Study 2 were forty-nine (49) males (mean age = 23.0 years, SD = 4.5) university students and athletes recruited from local sporting teams. In the second study, maximal oxygen uptake was directly measured on a treadmill and the mean values were 70.4 $\pm$ 8.8mm·kg·min^{-1} for aerobic athletes, 57.7 $\pm$ 5.7 for aerobic athletes, and 54.8 $\pm$ 7.2 for untrained students.

The following questionnaires were administered to all participants: TEOSQ for measuring Ego and Task Orientations (Duda & Nicholls, 1992), and PSE for measuring Physical Self-Efficacy (Ryckman et al., 1982). Also Perceived Exertion was measured by the RPE unidimensional scale (Borg, 1982). The degree of Commitment, Exertion/Discomfort tolerance, and Effort investment was measured by 3 items which pertained to each of these tasks.

Experiencing exertion in Study 1 was obtained through the use of a handgrip dynamometer mounted on an adjustable stand to standardize its use. The participants were asked to squeeze the dynamometer 3 times as strong as they could with 5 minute intervals. Then they were asked to squeeze the handlebar and maintain it at 50% of maximum strength as long as they could. A drop in performance exceeding 10% of the maximal value terminated the trial. RPE was administered each 15 seconds. "Time in Exertion" was determined as time elapsed from experiencing RPE=5 (hard) until ceasing the task. In Study 2, participants were tested for maximal oxygen consumption, and a week later they ran 90% of this value as long as they could. RPE was administered every 60 seconds. "Time in Exertion" was the time elapsed from reporting RPE=5 and placing the hands on the front railing of the treadmill.

(D) RESULTS

Study 1

To examine the overall contribution of the dispositional and task-specific variables to performing strength exertive task a hierarchical regression was employed. Familiarity with exertion (i.e. activity-type) was entered first followed by goal-orientation, self-efficacy, and task-specific commitment, effort, and exertion/discomfort tolerance. The results are shown in Table 1.

TABLE I. Summary of Hierarchical Regression Accounting for 'Time in Exertion' While Squeezing 50% Max Hand-Dynamometer by Dispositional and Task Specific Variables

		DV = time in exertion			
Step	**Variable**	β	**Mult.R**	**Mult.R^2**	**ΔR^2**
1	Activity Type Untrained Aerobic Anaerobic	0.33*	0.33	0.10	-
2	Goal Orientation Ego Task	0.08 0.07	0.56	0.31	0.21
3	Physical Self-Efficacy Perceived physical ability Perceived self-presentation Task-specific confidence	0.11 0.15 0.19	0.65	0.43	0.12
4	Task-Specific Effort Commitment Exertion Tolerance	0.10 0.28* 0.31*	0.76	0.59	0.16

$p<.05$

The four clusters accounted together for 59% of the Exertion Time Variance. Each cluster of variables accounted for a substantial explained variance of exertion. However, the only significant regression coefficients were those of activity-type and exertion tolerance, and commitment.

Study 2

Similarly to Study 1, in Table 2 the accounted variance of Exertion Time by the dispositional and task-specific variables is presented.

TABLE II. Summary of Hierarchical Regression Accounting for 'Time in Exertion' While Running 90% VO_2 Max by Dispositional and Task Specific Variables

		DV = time in exertion			
Step	**Variable**	β	**Mult.R**	**Mult.R^2**	**ΔR^2**
1	Activity Type Untrained Aerobic Anaerobic	0.33*	0.33	0.11	-
2	Goal Orientation Ego Task	0.14 0.03	0.55	0.31	0.20
3	Physical Self-Efficacy Perceived physical ability Perceived self-presentation Task-specific confidence	0.00 0.14 0.09	0.61	0.38	0.07
4	Task-Specific Effort Commitment Exertion Tolerance	0.07 0.11 0.38*	0.69	0.48	0.11

$p<.05$

48% of exertion time was accounted for by the 4 clusters. Though a substantial variance was accounted for by each of the predictor variables, only exertion-tolerance feelings were found to be significant.

(E) DISCUSSION

Given that aerobic athletes such as runners and cyclists have to cope with exertion and physical discomfort on a regular basis during training, they get accustomed to such feelings and are more motivated to endure and efficiently cope with them. This was evident in the two studies reported here.

Though not significant in our studies, task orientation was found to be associated with persistence and effort exertion (Duda, 1989). The non-significant results may be attributed to the homogeneity that the participants rated themselves on task orientation (i.e., very high on the 1-5 category range) and the failure of the tasks to exert competitive feelings, needed to elicit differences in high and low ego-oriented persons. Self-efficacy was found to be both a coping mechanism (Bandura et al., 1987) and a mediator (Bandura, 1977) of how persistent one can be in the face of aversive conditions. In the present study such a trend was found but more familiarity with the task could strengthen this relationship.

The two studies demonstrated that task-specific psychological states account for a substantial exertion level variance. It is evident that participants who more commit themselves to complete aversive tasks are more ready to tolerate exertion and sustain longer in such conditions.

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THE INFLUENCE OF DIFFERENT TYPES OF SELF-TALK ON BASKETBALL PLAYERS' PERFORMANCE

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KEY WORDS: Self-talk, basketball, performance

INTRODUCTION

Self-talk is a term that describes what people say to themselves, which can be manifested in verbal or non-verbal ways, in the form of a word, a thought, a smile, a frown, etc. Athletes' private talks and thoughts impact their feelings, which subsequently shape the actions they will take. Internal dialogues can aid in skill acquisition by fostering proper attentional focus, assisting athletes in building confidence, and also creating a positive mood. For example, positive thoughts may create feelings of confidence, which may lead to good performances, whereas negative thoughts often develop pessimistic and debilitating feelings, which ultimately contribute to poor performance (Bunker, Williams, & Zinsser, 1993). Based on what we know from the existing studies, self-talk tends to be either positive or negative and rarely neutral and results to either a positive or negative effect on one's performance.

Researchers who conducted experimental as well as self-reported self-talk studies have reported controversial findings. Meyers, Schleser, Cooke, and Cuvillier (1979) found no differences in gymnastic skills acquisition between groups that used various types of self-talk. Palmer (1992) also reported that self-talk was not effective in improving figure skating performance. On the contrary, a number of studies (Ziegler, 1987; Ming & Martin, 1996; Mallett & Hanrahan, 1997; Thomas & Fogarty, 1997; Theodorakis, et al., 1998) provided evidence for the effectiveness of positive self-talk in improving performance. Nevertheless, there are studies that provide mixed results. Rotella, Gansneder, Ojala, and Billings (1980) were not able to differentiate between successful and non-successful elite skiers in terms of the self-talk they used. Van Raalte, Brewer, Rivera, and Petitpas (1994) reported that the observed and self-reported negative self-talk was associated with losing in junior tennis players whereas there was no association between positive self-talk and winning.

Summarizing the literature, a partial support is evidenced for the effectiveness of self-talk as a cognitive strategy used to facilitate athletic performance. Positive self-talk was found in some studies to be associated with enhanced performance and optimal emotional states, while in others it had no effect. Ming and Martin (1996) argued that the studies, which failed to provide evidence regarding the positive effect of self-talk on performance, suffer from methodological limitations. Therefore, simplicity in self-talk and the need for more research guided the design of this project. More specifically, little empirical research has been conducted in the sport domain focusing on the effectiveness of different types of self-talk. Why would someone choose the cue-word "I can" before executing a free-shot in basketball, over the phrase/thought "I see the center of the basket"? The purpose of this study was to examine the impact that different types of self-talk--in the verbal-cue form--have on individuals' performances of a well learned skill (basketball shot).

METHOD AND PROCEDURE

Participants

Sixty men who were undergraduate students at the Department of Physical Education and Sports Sciences of a University in Greece participated voluntarily in this study. All participants previously have had completed a semester course in basketball, thus, they were cognizant of the free-throw shot technique and were all competent in its execution regardless of the shot outcome. The students' average age was 19.3 years of old (SD = + 0.8).

Experimental Procedures

The participants (N = 60) were distributed into three equal groups (A, B, and C) and were asked to execute consecutive shots from a 4.5 m distance to the hoop, from five different positions within the 4.5m perimeter, for three minutes. Initially, all groups received the same general instruction to "execute as many successful shots as possible" and completed the first trail of the three-minute shooting task. Upon its completion they rested for 20 minutes. Next, groups B and C received new, specific instructions on how to use the self-talk technique prior to each shot: group B was asked to use the cue-word "relax"; and Group C was instructed to use the cue-word "fast". Group A was the control group and received the same general instruction as the first time. All three groups completed two more trails of three-minute shooting, while between each trail they had a 20-min rest period.

RESULTS

Descriptive statistics (see Table 1) and repeated measures MANOVA were computed.

TABLE 1. Descriptive Statistics for Performance Scores

	First Trail			Second Trail			Third Trail		
	M (SD)	Min	Max	M (SD)	Min	Max	M (SD)	Min	Max
Gr. A	19.15(+7.1)	8.0	31.0	20.60(+5.4)	14.0	34.0	20.60(±5.9)	12.0	31.0
Gr. B	19.10(±6.9)	6.0	32.0	20.70(+6.3)	4.0	34.0	22.20(±5.6)	11.0	34.0
Gr. C	19.30(±5.9)	5.0	31.0	20.60(+6.9)	7.0	31.0	19.60(±5.4)	8.0	28.0

A repeated measure MANOVA was conducted in order to determine any differences in performance between groups. Significant differences were computed [$F(2, 114) = 6.90$, $p < .05$]. Scheffe's test revealed significant differences ($p < .05$) in performance between group B and C. More specifically, participants in group C, who repeated the cue-word "fast" prior to each shot, showed a decrease in performance, when compared to group B participants who used the cue-word "relax."

DISCUSSION

As the reviewed sport-psychology literature suggests, self-talk defined as one's internal dialogue, it may influence his/her actions and emotional states. In this study the use of self-talk effected participants' performance. The different types of self-talk utilized had a different effect in performance. The participants who used a cue-word with implications to lowering their arousal level ("relax") were able to improve their performance. However, the participants who were instructed to use the word "fast" which implied an increase in their arousal level did not improve. Thus, self-talk that triggers a lower arousal level was found to be more effective for performing a well-learned skill when compared to self-talk that triggered an increase in arousal. Yet, it may have been that the arousal increasing cue-word ("fast") instead of effecting the participants arousal level it actually effected their speed of execution (as the number of successful shots were recorded and the more they shot, the higher their chances to improve performance). Increasing the speed of execution possibly resulted to a decrease in preparation time (e.g., pre-shot routine, breathing) and an increase in fatigue. In contrast, the cue-word "clam" even if it did not effect their arousal level, it purported time to prepare for a successful

shot and to cognitively counteract the fatigue of the three-minute trial. This leads to recognizing a possible methodological limitation for this study, as the researchers did not control the meaning of the words used for each participant. Different words mean different things to different people, and perception is a factor we cannot ignore. In this of thought, the shot task was a well-learned skill since all participants had a semester-long course in basketball. Adding a new component to a well-learned skill and asking for maximum performance without practice is not a principle for effective training. The new component needs practice in order to be effectively incorporated into the task execution and to consequently facilitate and enhance one's performance.

In conclusion, the findings of the present study suggest that cognitive interventions such as self-talk, can positively impact performance if it is learned and its content is appropriate for the task performed. Previous studies have reported self-talk as an effective intervention technique for enhancing performance a finding that the present study appears to partially support. Although our study provides additional data on the effectiveness of self-talk and the importance of its content, it also opened one more door for future research on self-talk and the level of comfort in using the technique.

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PREDICTORS OF SELF-ESTEEM IN PHYSICAL EDUCATION CLASSES IN THE ELEMENTARY SCHOOL

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Key words: self-esteem, divergent teaching method, traditional teaching method

INTRODUCTION

Self-esteem is a central construct to theories and models of self-system and human behavior (Combs & Snygg, 1959; Cooley, 1902; Coopersmith, 1967; Epstein, 1973; Harter, 1982, 1985, 1986; James, 1890; Marsh et al, 1984; Mullener & Laird, 1971; Piers & Harris, 1969; Rosenberg, 1979). For many years, self-esteem has been considered as an unidimentional entity (Coopersmith, 1967; Piers & Harris, 1969), which reflects the self-esteem of the different areas of the individual's life, assessed by combining self-evaluations across a range of domains. The unidimentional approach has been criticized because of its insufficiency to clearly differentiate among the elements that contribute to self-esteem (Harter, 1986). The recognition that there are different domains of self-esteem and that people can distinguish between them and judge themselves differently according to the specific domain has resulted in the development of a multidimentional approach to self-esteem. Within the multidimentional perspective, Harter (1985) developed a self-esteem model, according to which there are multiple selves, suggesting that self-evaluation depends upon the person's specific judgment of different domains. She described five specific domains of competence and adequacy (i. e., scholastic competence, social acceptance, athletic competence, physical appearance, behavioral conduct) and one domain for general self-worth (overall sense of self-worth). The teaching methods used in the study were the «divergent production» teaching method (Mosston & Ashworth, 1994), a child-centered approach to physical education, which implements learning through improvisation and creativity, experimentation, problem solving, exploration, and discovery, and the «traditional» teaching method, a teacher-centered approach, which implements learning through command-demonstration (Mosston & Ashworth, 1994). The present study investigated self-esteem components as determinants of self-esteem in physical education classses.

METHOD AND PROCEDURE

One hundred and seven (N=107) elementary school children (49 boys and 58 girls), 5th and 6th graders, aged 11-12 years, formed the two experimental groups, that is the «divergent production» and the «traditional» teaching method. In the «divergent production» group participated 54 subjects, while in the «traditional» group participated 53 subjects. The teaching methods were systematically applied for 3 months (24 teaching hours). Self-esteem components (scholastic competence, social acceptance, athletic competence, physical appearance, behavioral conduct and global self-worth) were assessed through the modified Greek version of the «Self-Perception Profile for Children-SPPC» (Harter, 1985). Data, analyzed in the present paper, was gathered from the children's self-reports to the SPPC's questionnaire «What I Am Like». A 2 x 2 x 2 (groups x sexes x measurements) multile regression analysis was applied in order to define important predictors of the dependent

variables in the post-test, using the measurements of the same dependent variables in the pre-test. Each self-esteem component was the dependent variable, with scholastic competence, social acceptance, athletic competence, physical appearance, behavioral conduct and global self-worth as the set of predictor variables.

RESULTS

The results for the whole sample (Table 1) and the two experimental groups showed that important predictor for each self-esteem component in the second measurement is the same component in the first measurement. However, athletic competence and physical appearance (whole sample), social acceptance («divergent production» group), behavioral conduct («traditional» group) appeared, also, as important and frequent predictors. With regard to genders, athletic competence, and physical appearance were the most important predictors for boys and girls, respectively. The predictability of the self-esteem variables was found to be significant ($p<.001$).

TABLE 1. Multiple Stepwise Regression Analysis

Variable	Predictors	*MR*	R^2	R^2	*Beta*	*F*	*df*	*p*
Scholarstic	Scholastic Comp.	.88	.78		.87			
Competence	Behavioral Cond.	.89	.79		-.12			
	Physical Appear.	.90	.80	.80	.13	138.68	(3,103)	<.0001
Social	Social Acceptance	.79	.62		.79			
Acceptance	Athletic Comp.	.80	.64	.63	.16	92.09	(2,104)	<.0001
Athletic	Athletic Comp.	.85	.72		.85			
Competence	Physical Appear.	.86	.73	.72	.14	142.27	(2,104)	<.0001
Physical	Physical Appear.	.85	.73		.85			
Appearance	Athletic Comp.	.86	.74		.13			
	Behavioral Con	.87	.75	.74	-.13	199.63	(3,103)	<.0001
Behavioral	Behavioral Con	.77	.60		.77			
Conduct	Athletic Comp.	.80	.64	.63	.20	90.53	(2,104)	<.0001
Global	Global self-worth	.78	.61		.78			
self-worth	Physical Appear.	.80	.64	.63	.21	90.82	(2,104)	<.0001

Important Predictors of Self-Esteem in Elementary School Children (N=107)

DISCUSSION AND CONCLUSIONS

The results of this study show that important predictor for each self-esteem component is, in the first place, the component itself. Athletic competence and physical appearance appear, also, as frequent and important predictors, indicating that athletic and physical aspects are important for children's self-evaluations. These findings suggest that childrens' self-perception in the athletic and physical domain can affect the development of self-esteem. This can lead to the encouragment of participating in exercise and sport, as factors enhancing a person's self-esteem. Furthermore, athletic competence is the most important predictor in boys' sample, showing that athletic self-perception is a determinant factor for boys' self-esteem, while in girls' sample, physical appearance comes first and then follows athletic competence, indicating that physical appearance is more important than athletic competence for the development of self-esteem in girls. With regard to teaching methods, social acceptance in «divergent» method and behavioral conduct in «traditional» method, appear as important predictors, showing that the divergent teaching method favors social aspects, while the traditional method favors behavioral ones. Further research is needed to examine the predictability of self-esteem components in different ages, as well as, in different training settings, as for example in sport teams. Finally, it would be interesting to study the predictability of self-esteem in exercising and not-exerciging groups.

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Experimentally Induced Effects of Goal Distance in Time on the Relationships between Achievement Motives and Indications of Performance in Sports.

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Summary

Introduction
Based on earlier theory and research developed by Gjesme (1974, 1975, 1981), it was predicted that (a) individuals high in motivation to approach success and low in motivation to avoid failure (approach-oriented) would increase their performance and (b) those with the opposite motivation constellation (avoidance-oriented) would decrease their amount of performance as a distant future achievement task (goal) approached in time. Further, it was assumed that individuals high in future time orientation (FTO) would perceive a distant future event (goal) as nearer in time than those who are low in FTO. This implies the hypotheses that (c) the slope of the positive goal gradient is steeper for those of the approach-oriented individuals who are low in FTO as compared to those who are high in FTO, and (d) the slope of the negative goal gradient is steeper for those of the avoidance-oriented individuals who are low in FTO as compared with those who are high in FTO.
Results have confirmed postulates a) and b) when both cognitive (Gjesme 1974) and physical (Halvari 1991) performance are studied. Postulate c) has been rejected for cognitive performance (Gjesme 1974), whereas it has been supported regarding energy consumption during physical performance (Halvari 1991). That is: The energy exerted decrease more rapidly among avoidance-oriented individuals than the increase in energy output observed among approach-oriented subjects when a distant goal approach in time.
In other words; the results on cognitive performance contradict results revealed on physical performance, i.e., speed-accuracy. Avoidance-oriented individuals with high scores on future time orientation performed more poorly than those with low scores on future time orientation in the goal condition, whereas no performance differences occured in goal conditions remote in time (Halvari 1991). This implies that avoidance-oriented individuals with high scores on future time orientation should have a steeper slope of negative goal gradient for physical performance than those with low scores on future time orientation. Other research (Halvari & Thomassen, in press) show that the over all effect of future time orientation on personally best achieved in sport is negative. Thus, in order to be successful in sport and physical exercises, an orientation toward the present situation seems to be better than beeing too future orientated.
Individulas who are too highly future time oriented may be too occupied with cognitive activities and less action oriented. Another interpretation is more closely tied to achievement theory: Avoidance-oriented individuals with a high future time orientation will probably expect more negative affects and worries to occur as a consequence of possible failure than those low in future time orientation. This should occur in particular in the goal situation. Success or failure in a goal situation is more important or dramatic, respectively, than a positive or negative outcome in training situations. Thus, the perceived importance of goal

condition should arouse cognitive activities related to future time orientation of individuals. This corresponds well with the definition of future time orientation described above.

Based on the theories and discussions presented above, the following hypotheses are outlined:
(1) Relations between achievement motives and performance increases as the goal distance in time decreases. This interaction of achievement motives and goal distance in time on performance implies that approach-oriented individuals should perform better than avoidance-oriented individuals in the goal situation, whereas no performance differences between these motive groups should emerge in training situations far away from the goal.
(2) There is an interaction of achievement motives, future time orientation and goal distance in time on performance. This implies that among avoidance-oriented individuals, those with high scores on future time orientation should perform more poorly than those low in future time orientation in the goal situation, whereas no performance differences between the groups should emerge in training situations far away from the goal.

Method

The subjects were 128 male pupils from all 19 classes who studied general subjects or sports at an Upper Secondary senior highschool in Alta, Norway. The students were aged from 16 to 19 year.

Assessment of Independent Variables: The motives were assessed by the Achievement Motives Scale by Gjesme & Nygård, 1970.
Future Time Orientation and Perceived Instrumentality were estimated on scales developed by Gjesme (1979 and 1981, respectively).

Assessement of Dependent Variables: Blood Lactate Consentration and Performance Time
Blood tests were taken immediate before and after performance. These tests were analysed for Lactate Consentration and measures in mmol/L. The after minus before measures gives the dependent Blood Lactate Difference scores. Descriptive statistics for these scores are:
M=4.35, SD=2.19, Mdn=4.15, Min=0.00, Max=9.90.
The time the subjects used to complete the 1500m distance was registered. Descriptive statistics for the time scores are: M=401.70 sec., SD=50.44, Mdn=400.50 sec, Min=275.00 sec, Max=516.00 sec.

Experimental Procedure
128 boys were randomly assigned to each of the three experimental conditions.
Experimental condition 1 (goal). The boys were told: «Now you shall have a test of running on the treadmill. The distance is 1500m, and you get a signal when you have passed 500m, 1000m and 1400m. The test does not have any implications for your mark in physical education. You decide yourself the velocity to start with, and the increase of the velocity during the test».
Experimental condition 2 (1 month): The pupils were told: «Now you shall practice in running on the treadmill. The distance is 1500m and you get a signal when you have passed 500m, 1000m and 1400m. The practice does not have any implications for your mark in physical education. One month from now you shall have a test in exactly the same task as you shall practice today, and you can take the test independent of how you do it in practice today. - I start the watch when the treadmill begins to roll».
Experimental condition 3 (1 year): The boys in this condition were given exactly the same instructions as under condition 2 except that 1 month was replaced with 1 year.

The instructions concerning the next test to come, under conditions 2 and 3, were entirely fictious. After the experiment was finished, the subjects were debriefed.

Treatment of date

Correlational analyses (pearson r`s), analyses of variance and regression analyses were used. Probability estimates on or lower than the .05 level are treated as significant and regards both one- and two-tailed tests.

Results

An analysis of variance left some significant main and interaction effects. The motive to avoid failure (Mf) was significantly related to performance in time. The higher the Mf, the lower the performance ($p<.05$). In addition the approach-oriented individuals performed significantly better than the avoidance-oriented individuals in the goal and in the 1 month from goal condition. The performance difference was nonsignificant in the condition farthest away from the goal.

The avoidance-oriented had their best performance when the goal was far away. The opposite results were shown among aproach-oriented individuals. This results gave support to hypothesis nr.1.

According to hypothesis nr. 2, the avoidance-oriented individuals with high future time orientation performed more poorly than those with low scores on future time orientation in the goal condition, whereas the performance differences between the same motive groups in the training condition was insignificant.

Regarding effort exerted, the same pattern of results emerged. In the goal condition, avoidance-oriented individuals with high scores on future time orientation have the lowest difference in blood lactate concentration observed, and this measure was significantly lower than those who score low on future time orientation. In the training conditions the mean effort exerted between the same groups was nonsignificant.

The test of increases and decreases of performance as a function of goal proximity for different personality combinations showed that approach-oriented individuals with high scores on future time orientation exerted more effort in test situation and lowest one year from goal. Conversely, avoidance-oriented individuals who scored high on future time orientation decreased both performance and effort exerted when a distant goal approaches in time. In addition we observed that among individuals who scored high on future time orientation, avoidance-oriented individuals had a steeper or more rapidly decrease in performance when a distant goal approached in time than the nonsignificant slope observed for approach-oriented individuals.

Converting the results into educational policy might suggest that the goal should be kept close in psychological distance for approach-oriented and at a distance for avoidance-oriented individuals.

DECISION-MAKING DYNAMICS OF THE SPEED PERCEPTION

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Key Words: Anticipation, fatigue, perception of speed, visual-motor system.

INTRODUCTION

Researchers have undertaken the study of motor learning and motor control from different perspectives. Researchers in motor control have been interested in which variables are controlled during movement (Stein 1982). They have advanced several models for how movements are controlled. These models include the equilibrium point hypothesis (Bizzi, Polit, Morasso 1976; Feldman 1986), dynamical system theory (Schoner, Kelso 1988), the pulse-step model (Freund, Budingen 1978; Ghez 1979), the impulse-timing model (Wallace 1981), various motor program models (Meyer, Smith,Wright 1982), the dual-strategy hypothesis (Gottlieb, Corcos, Agarwal 1989b), and models predicated on minimizing certain variables (Stein, Oguztoreli, Capaday 1986; Uno, Kawato, Suzuki 1989). Researchers have conducted a few studies to determine how control parameters change as a function of skill acquisition (Newell 1992), and studies related to schema theory (Schmidt 1975).
In the Laboratory of the Cognitive Neuroscience and Experimental Psychology at Tallinn University of Educational Sciences the topics of research are related with relationships and laws in functional systems. P.K. Anokhin's functional systems theory of the organism's vital functions, or human behaviour, have been viewed in the aspect of the final goal, i.e. adaptation results through the functional systems that are formed according to the principle of self-regulation. The factors forming functional systems are various parameters of organism's requirements. In physiology and psychology, a functional system is a certain block with six key stages where certain organs and processes of the organism are joined (Anokhin 1970).
The aim of this paper is to show how a stressor like physical fatigue influences the functional system, related the decision-making time and the correctness of the speed perception. The practical value of the research is to show how the psychophysiological basis of a specific movement changes in realizing the technical and tactical preparation like:

- ability to anticipate the flight of the ball
- ability to anticipate the movement of a foot or a hand
- ability to anticipate the movement of the players
- ability to anticipate the approaching objects in extreme situations as driving a vehicle, etc

METHOD AND PROCEDURE

For the evaluation of the perception of speed, or anticipation, we have used software designed in the laboratory of cognitive neuroscience and experimental psychology at Tallinn University of Pedagogical Science (Thomson 1997). The method for measuring anticipation based on the fact that in our brain the control over action is constantly going on. Success of the control depends on the speed and the precision of the nervous impulses in the "stage of action result" where the indicators of the action of the given movement are compared with the engram which has been saved in our memory by the same or an analogous action. During the demonstration of the test, the subject had to first memorise the speed of movements on the display. Next, the subject had to compare the speed of movements presented in the course of the test at the shortest time and with maximum correctness, with the ones displayed during the

demonstration. The decision-making after comparing the speed of movement is carried out with the pressing the designated keys on the computer keyboard as quickly as possible.
The tread-mill test consists of running (30 min) with the velocity increasing in every three minutes. We have used a computerised tread-mill. Checking of the anticipation is carried out 2 minutes before and 2 minutes after the tread-mill test. The research included 135 (112 male and 23 female) Estonian top-level athletes, 20 (15-37) years of age.

RESULTS

During the experiment, relatitonships were determined in the ability to anticipate different speeds with the elaborated method before and after the tread-mill test. The results of the experiment indicate that:
1) the means of decision-making speed differ before and after tread-mill test at the 5% signifance level (significance probability p = 0,000; and t-value, t = 7,774).
2) the means of decision-making correctness differ before and after tread-mill test at the 5% signifance level (significance probability p = 0,000; and t-value, t = -4,096).

TABLE 1. T-Test Statistics

	N	Mean	Std. Dev.	Std.M.Err
Decision-making speed before tread-mill test	135	0,62	0,1064	9,159E-03
Decision-making speed after tread-mill test	135	0,57	8,400E-02	7,230E-03
Decision-making correctness before tread-mill test	135	1,38	1.1517	9,912E-02
Decision-making correctness before tread-mill test	135	1,87	1,2387	0,1066

DISCUSSION AND CONCLUSIONS

Based on investigations on related topics (Travlos, Marisi 1995) and on the results of the current study, one can to assume that various mental tasks may be differently affected by exercise intensity, duration and fitness of the subjects. It may be assumed that exceeding the anaerobic threshold is associated with a decrement in the psychomotor perfomance because of accelerated development of fatigue. Moreover, since circulating plasma catecholamines (CA) are, to some extent, related to the level of central nervous system (CNS) activation it seems likely that a rapid increase in plasma CA concentration may indicate hastened CNS activation influencing psychomotor functioning (Chmura, Nazar, Kaciuba-Uscilko 1994).
There are two possible explanations for the conflicting findings of the foregoing studies regarding physical arousal and its effects on mental functioning. First, the arousal of the CNS and physical fatigue of the skeletal-motor system may have alternative influences on mental functioning. Low-intensity exercise may facilitate attentional processes by directly affecting the CNS. Nonetheless, as exercise intensity or duration increases, the facilitative effects of exercise may be affected by the debilitating effects of physical fatigue. Second, it may be that some mental functions are not affected by increased intensity of exercise to exhaustion while some other mental functions are impaired. It is possible for exercise to facilitate or impair perfomance on the same cognitive task depending on the individual's physical fitness and the intensity of exercise at which the individual is performing (Tomporowski, Ellis 1986).
In conclusion, this study demonstrated that the decision-making dynamics of the speed perception, after the influence of the tread-mill test, is following:
1. Decision-making time shortened (0,62 sec before and 0,57 sec after).
2. Decision-making correctness worsened (1,38 mistakes before and 1,87 mistakes after).

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PROGNOSES OF OLYMPIC TRACK AND FIELD MEN PERFORMANCES IN 2 000 – 2008 OLYMPIC GAMES

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KEY WORDS: sports performance, track and field performance prognosis, Olympic Games, modelling of sport performance.

INTRODUCTION

Human existence is vitally connected with the interaction of past and future. The point of interaction of both is the present, disappearing fast into the past. Any human activity in the present is actually the result of an analysis of the past, the application of experience from more or less successful solutions of problems in the past, and looking for patterns and ways of solution of both past and present tasks. Thus for man, the future represents the unknown, uncertain, unexpected, a summary of tasks, problems, and activities he will encounter. It is apparent that since time immemorial people have been trying to learn about the future in some way. Frequently used terms are: prediction, outlook, prognosis, anticipation, fortune - telling, fantasy, vision, utopia, speculation, science - fiction, prophesy, futurology etc. (Tilinger, 1990).

In the field of sport, prognosing may be considered to be an inseparable part of the system of sport preparation (prognosis - plan - realization - recording - checking - evaluation). The concepts of a possible future performance may be often found in the system of the selection of talented beginner athletes. Possibilities of elite performances are considered in a prognosis for the future and in yearly plans of athletic preparation at all performance levels. Prognosis is especially important in top sport, and so e.g. for Czech Republic sport representation at top world competitions (Olympic Games, World Championships). Sport is regarded as a phenomenon of various time related social, economic, political etc. factors.

METHODOLOGY

The methods of this study were derived from the prognosing methodological basis realized in various areas of human activity (Clarke & Eckert 1985). The following general prognostic

methods were applied: Delft method, the method of extrapolation and correlation analysis, the method of modelling (Tilinger 1983, Šulc 1987). Their successful application depended on a good knowledge of the individual athletic events, of the structure of athletic performance, athlete's preparation and the specific features of competition in respective events.

Our interest was directed to the top world competitions - World Championships, Olympic Games etc. That is why the database represents the results from Olympic Games, World Championships and other top competitions of past 25 years (1972 – 1997). The performances of winners and of athletes up to sixth place were investigated.

RESULTS

Our analysis of numerous World Championships and Olympic track and field competitions enabled us to estimate the values of performances, which may be expected at top competitions in future years. (Table 1)

CONCLUSION

The past developments and the present level of performance allow us to predict future results. But it would be too to simple deal only with probable future performances. Prognostics in sport must have much wider scope, it should contribute to objectivization of preparation of top athletes, and it has to consider the sports events from a view point of future.

In a complex prognosis, the data concerning probable development of training, technique of sport activity, tactics, performances, rules of competitions, equipment etc. must be included.

This is the basis on which a complex prognosis might be achieved, and which will lead to the evaluation of possible success at Olympic Games, selection of teams, planning and control of athlete's preparation.

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Table 1 Prognoses of Olympic track and field men performances in 2000 – 2008 OG

Event	Place	2000	2004	2008	Equation	R^2
100 m	1.	9,73	9,68	9,62	Y= -0,0127X + 35,131	0,6600
s	6.	10,01	9,95	9,90	Y= -0,0146X + 39,212	0,637
200 m	1.	19,78	19,71	19,65	Y= -0,0163X + 52,382	0,271
s	6.	20,29	20,22	20,15	Y= -0,168X + 53,894	0,424
400 m	1.	43,54	43,36	43,18	Y= -0,0446X + 132,74	0,451
s	6.	44,72	44,60	44,48	Y= -0,0304X + 105,52	0,433
800 m	1.	103,34	103,14	102,94	Y= -0,0503X + 203,94	0,149
s	6.	105,06	104,85	104,63	Y= -0,0537X + 212,46	0,219
1500 m	1.	214,88	214,37	213,86	Y= -0,1268X + 468,48	0,128
s	6.	217,09	216,56	216,04	Y= -0,1318X + 480,69	0,199
5000 m	1.	786,10	783,02	779,94	Y= -0,7699X + 2325,9	0,467
s	6.	798,10	796,19	794,29	Y= -0,4767X + 1751,5	0,341
10 000 m	1.	1643,60	1639,76	1635,92	Y= -0,9595X + 3562,6	0,248
s	6.	1668,10	1664,77	1661,46	Y= -0,8322X + 3332,4	0,2330
110 m hurdles	1.	12,84	12,77	12,70	Y= -0,0178X + 48,441	0,6240
s	6.	13,25	13,16	13,07	Y= -0,022X + 57,25	0,86
400 m hurdles	1.	47,44	47,35	47,28	Y= -0,02X + 87,437	0,12
s	6.	48,35	48,12	47,89	Y= -0,0575X + 163,35	0,718
3000 m hurdles	1.	483,90	482,07	480,23	Y= -0,4568X + 1401,1	0,487
s	6.	490,00	487,55	485,11	Y= -0,6113X + 1712,6	0,678
High jump	1.	242	244	246	Y= 0,5492X - 856,66	0,678
cm	6.	238	241	243	Y= 0,6901X - 1142,4	0,774
Pole vault	1.	606	614	622	Y= 1,9518X - 3297,3	0,836
cm	6.	586	594	602	Y= 2,0258X - 3465,7	0,7710
Long jump	1.	873	878	882	Y= 1,2048X - 1536,9	0,276
cm	6.	806	807	809	Y= 0,3076X + 191,03	0,123
Triple jump	1.	18,14	18,28	18,42	Y= 0,0347X - 51,256	0,765
m	6.	17,35	17,44	17,53	Y= 0,0238X - 30,254	0,447
Shot put	1.	21,90	21,99	22,09	Y= 0,0234X - 24,901	0,198
m	6.	20,06	19,99	19,92	Y= -0,017X + 54,06	0,138
Discus	1.	68,80	69,22	69,64	Y= 0,1048X -140,8	0,291
m	6.	64,16	64,22	64,30	Y= 0,0181X + 27,955	0,013
Hammer	1.	83,60	84,40	85,20	Y= 0,2015X - 319,40	0,39
m	6.	79,00	79,90	81,88	Y= 0,2473X - 414,69	0,6350

EVALUATION STRATEGIES AND EFFECTS OF A FOUR MONTH INTERVENTION MODULE „STAIRS INSTEAD OF LIFT"

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KEY WORDS
Use of stairs promotion, Evaluation of daily activities, Health enhancing physical activity

INTRODUCTION

Recent studies have demonstrated that a physically active lifestyle offers numerous benefits for improved physical and psychological health (Blair et al., 1995). Despite the increasing evidence regarding the benefits of regular physical activity, there is a high prevalence of sedentariness in industrialised countries with a large percentage of the population not participating in regular exercise. In Switzerland, only a third of the Swiss population is sufficiently regularly active to achieve health benefits (Calmonte & Kälin, 1997). Increasing the proportion of individuals interested in initiating or increasing exercise behaviour is currently a major public health challenge.

While past research on the health benefits of exercise concentrated on vigorous exercise, the new guidelines assume that health benefits may also result from regular moderately intense activities which accelerate breathing such as brisk walking, climbing stairs or cycling.

Some investigations (Andersen et al., 1998; Blamey, Mutrie, & Aitchison, 1995) examine the effect of a sign that encourages stair use for health benefits placed at the base of a lift that was adjacent to a flight of stairs in both a mall and a city centre underground station. In these studies the percentage of subjects using the stairs increased from baseline to intervention phase by 2.1% and around 8% respectively.

The goal of our project was the development of an intervention programme to increase the physical activity of white collar workers with emphasis on daily working life activities. „Use of stairs instead of lift" was one intervention module of the 4 month intervention programme.

METHOD AND PROCEDURE

Design and Intervention

After a pilot project in November 1996, a 4 month intervention programme was implemented in offices of the Swiss federal government in February 1997. The programme included information (leaflets, lectures) about circulation, endurance training, nutrition, relaxation, stretching at the photocopier, recent physical activity recommendations to achieve health benefits, and how to start with it. Exercise professionals offered exercise facilities during lunch break, and arranged single action-days encouraging people to use the stairs instead of the lift To enhance stair use the following strategies were carried out: Every employee received a leaflet about the health benefit of regular daily activities, fruits were offered on the stairs, a game of chance was performed for stair users, and during a whole day the lift was symbolically closed.

In this study, the transtheoretical model was important to understand that changing behaviour is commonly a non-linear and long lasting process. In addition, because of the assumption of the model that people use different processes of change at different times of their struggle with behaviour change (Prochaska, Redding & Evers, 1997) at least two types of strategy were realised to improve stair use. However, the way in which the programme was carried out did

not allow an stage matched intervention. Before and after the intervention period (January 1997 and June 1997), energy expenditure, stages of change and stair use were assessed.

Participants

All 338 employees of four intervention offices were included. The mean age of the employees was 42.2 (SD=9.7) years, 32 % were female, the mean years of education was 16.4 (SD=3.4) and 78.1 % were non smokers.

Procedure

Two methods were used to assess stair use. In the first, a non-covert observer recorded frequency of stair and lift use (up and down) for one hour per day during a whole week (five days). In each office the observations were made during the same hour every day: 8:00 a.m. to 9:00 a.m. in office 1, 9:15 a.m. to 10:15 a.m. in office 2, 10:30 a.m. to 11:30 a.m. in office 3 and 11:35 a.m. to 12:35 a.m. in office 4. People carrying heavy or large items were recorded separately and later excluded from statistical analyses. In the second method, automatical measurement (photoelectric barrier) was installed to assess both stair and lift use during 24 hours. At follow up the same procedure was repeated.

Statistical Analyses

The change in proportion of people using the stairs from baseline to follow up was analysed by using the chi-square test. Results are presented as the proportion of stair users.

RESULTS

Overall, the use of stairs at baseline was 61.8% for observation and 66.6% for automatical measurement. After the 4 month intervention period, observed stair use in the four offices increased to 67.1% (difference 5.3 %). Compared with the baseline value, stair use measured by photoelectric barrier was about the same at follow up (66.9%). The stair use level of each office at baseline varied between 31.3% and 86.2% with reference to observation data and between 46.6% and 78.6% with reference to automatical measurement. The rank order of the 4 offices was the same with both assessment methods.

TABLE 1. Changes in Stair Use - Observation Data

	Baseline		Follow up			
Offices	Observations total	Persons who took the stairs	Observations total	Persons who took the stairs	Difference	Significance Chi-Square
	n	%	n	%	%	p, χ^2
4 offices n=338	819	61.8	774	67.1	5.3	p=0.0281 χ^2=4.82
Office 1 n=56	137	31.4	144	35.4	4	p=0.474 χ^2=0.51
Office 2 n=75	152	86.2	82	89.0	2.8	p=0.535 χ^2=0.38
Office 3 n=55	259	69.1	251	74.9	5.8	p=0.145 χ^2=2.12
Office 4 n=152	271	56.5	297	69.7	13.2	p=0.001 χ^2=10.70

All four offices together, a significant increase in stair use was found between baseline and follow up observation. In each office, observational data show an increase in stair use but in

only one office was this statistically significant (from 56.5% to 69.7%, difference 13.2%) (Table 1). The pattern of stair use examined automatically was not as consistent. In two offices there was a decrease in stair use at follow up, which was statistically significant in one office (from 78.6% to 74.9%, difference -3.7%). However, in the same office in which a significant increase in stair use was observed (office 4), a significant increase was also measured by the photoelectric barrier from 64.7% to 69.2% (difference 4.5%).

DISCUSSION AND CONCLUSIONS

By observation, we found a moderate effect caused by the 4 month intervention. Overall, there is a statistically significant increase in stair use at follow up. The improvement in stair use was greater than that found in the American study in a mall (Andersen et al. 1998) and lower than that found in the British study observing individuals in an underground station (Blamey, Mutrie & Aitchison, 1995). The data gained by automatical measurement do not show the same pattern: the increase in stair use is less clear. These differences in outcome suggest that the observer influenced the behaviour of the employees. The possibility of manipulating the photoelectric barrier may be another reason for the different outcome. Especially at baseline people were curious and tested the mechanism of the photoelectric barrier (stairs) by waving a hand backward and forward. However, even if it may be supposed that the observer influenced the behaviour of the subjects, she was able to enhance the use of stairs. Remarkable are the different proportions of stair use at baseline among the four offices. From our point of view the attractiveness of the stairwell and the number of stairs between the floors may be the reasons for these differences. In office 1 the stairwell is dark the floors are high, and it is only accessible with a key. In office 4 the stairwell is much brighter but it is as well an old building with high floors. Office 2 and 3 are new buildings with decorated bright stairwells and lower floors. In this study, however, age seems not to influence the proportion of stair use at baseline. There is no statistically significant difference in mean age between the employees of the four offices. Finally, the number of actions encouraging people to use the stairs during the intervention period may relate to the improvement of stair use. Additional to the two types of strategy to improve stair use in each office (leaflet and fruits) only in office 4 two further actions (game of chance and symbolically closed lift) were carried out. We assume that the repeated invitations to use the stairs instead of the lift like information about new health behaviour facts, rewards for the positive behaviour change, and cues to increase stair use were helpful reminders for the employees to engage in healthy behaviour.

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PROVIDING SUPPORT IN THE PROCESS OF DEVELOPMENT OF THE ELDERLY VIA PHYSICAL ACTIVITY AND RELAXATION TRAINING AND PHILOSOPHICAL-PSYCHOLOGICAL SEMINARS

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Key words: physical activity, quality of life, old age, therapeutic programme

INTRODUCTION

In the contemporary world, where the number of the elderly people is going up from year to year, we tend to more and more often reflect on the health condition of this part of the society. Traditional, stereotypic approach to the old age boil down to the "recording of deficiencies, losses, discomforts and disabilities inextricably linked with advanced age. It concerns, generally speaking, the biological fitness of the old man as well as his psychical or social capacities, and – what results from it – his general adaptative abilities" (Cichocka, 1993, p. 249). The elderly people are often those who sit in great numbers in queues to doctors, who abuse medicines, who permanently complain and torment their close relatives with descriptions of the bad state of health, who do not see the purpose in life any more, without the slightest satisfaction in life. These are people who are hypochondriac, overwhelmed with pessimism, claiming attitudes and depression (Ory, Cox, 1994).
Physical activity is treated in the research as a kind of health competence in the area of public health understood as experiencing the quality of life among the members of a given group, in this case of the people more than 60 years old. The research is associated with the Poland's National Health Programme, decisively oriented on promoting health by suitable shaping of the health-related behaviour of the society. At the top of the list we can find the aims related with health hazards resulting from behavioural patterns, among which the increase of physical activity was included (Baltes, Mayr, Borchelt, Maas, Wilras, 1993; Brink, Niemeyer 1993; Ory, Cox, 1994; Roberts, Dunkle, Haugh, 1994). The role and share of time devoted to physical activity in the life of the elderly, who approach to sum up the balance of their life is also important. For many of them it is a closing balance, meaning in practice that they feel no need to develop any life plans or to set any life targets. The feeling of sense of life is an important element of the people's quality of life, being particularly important for the elderly. Could the increase in conscious life activity be accomplished thanks to an attainment of a higher level of physical activity? Are the attempts to develop a new philosophy of life closely connected with the ability to use physical activity and relaxation a feasible proposition for the elderly? Our own research was intended to provide answers to those questions.

METHOD AND PROCEDURE

Subjects: 75 people more than 60 years old, living in the city of Gdańsk were studied (Age: M=63,81; SD= 4,99). None of the persons in question was active in professional life.

Method: *The Prupose in Life Test (PIL)* of J.C.Crumbaugh and L.T. Maholick was used (Crumbaugh, Maholick, 1964). It is the Polish version of the American scale containing 20 questions, inquiring the sense of one's life, i.e. whether life has a sense and a purpose (Popielski, 1987).
Computations were made with the help of the "Statistica 5.0"statistical software package.

Procedure: The research was made three times: before the introduction of the prevention-intervention programme, after the conclusion of a four month programme and six months later. The aim of such timing of research was to find out how the programme influenced the feeling of the sense of life of the elderly and to what extent the expected effect proved to have exerted lasting influence. The programme included four months of two sessions lasting 3+4 hours each per week. The programme consisted in the realisation of a series of physical activity exercises combined with seminars on psycho-social issues (Krawczyński, Olszewski, Sołowiej, Tłokiński, 1997):

1. Rhythm and music based sessions oriented towards an increase of the participants' own activity, self-satisfaction and motional self -control.
2. Recreational tourism activities: walks, games and sporting events improving the motional skills.
3. Correctional, ability increasing gymnastic exercises oriented towards upgrading of particular muscle groups, tailored to the needs of individual participants.
4. Relaxation training sessions as components of psycho-regulating influences, oriented towards the improvement of the participants' own abilities (thanks to the development of their consciousness of motional abilities).
5. Complementary lectures and seminars on the philosophy of life, creativity and social communication (i.a. assertiveness).

RESULTS

The descriptive statistics and results of the ANOVA unifactoral variance analysis for particular dimensions of the sense of life: before the introduction of the programme (PIL 1), after having run the programme (PIL 2) and after a six month break (PIL 3) in the studied group are presented in the following Table 1:

Variables	Means	Standard Deviations	Effect
PIL 1	106.03	19.72	F(2,148)=13.762
PIL 2	112.77	15.02	p<0.0001
PIL 3	113.16	15.93	

TABLE 1. Means, Standard Deviations and One-way ANOVA Effect for Particular Dimensions of Sense of Life.

When the PIL 1 - PIL 3 measurement results were compared with the Duncan test it could be concluded that there was a meaningful difference between the first measurement and the second measurement ($p<0.0001$) as well as between the first and the third measurements ($p<0.0001$). No differences were found between the second and the third measurements.

CONCLUSION

The presented results of our own research indicate, that a four months lasting intervention-prevention programme realised in Gdańsk contributed to the influenced the feeling of the sense of life in the studied group of people who were more than sixty years old. The durability of the effects of the programme after six months has also been observed. It seems to be an important fact that the participants of the programme often stressed the role and importance of a holistic approach, exerting influence both on the *some* as well as on the *psyche* thanks to the lectures and seminars and, or perhaps first of all, mobility and relaxation exercises.

The acquired data provide ground for hope that it is possible to support the development of the elderly people with the same of similar programmes and training sessions developed specially for this, more and more numerous group in the society.

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PSYCHOMETRIC EQUIVALENCE OF A TRANSLATION OF THE PSDQ (PHYSICAL SELF-DESCRIPTION QUESTIONNAIRE) INTO SPANISH

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KEY WORDS

Physical self-concept, test translations, psychometric equivalence, cross-cultural comparisons, and Physical Self-Description Questionnaire.

INTRODUCTION

Progresses in theory and research further substantiates the claim that self-concept must be understood as a multidimensional construct instead of a global construct. Because of that researchers are recommended to use multidimensional measures of self-concept instead of global measures of self. More recently, researchers have developed self-concept instruments to measure specific domains such as physical self-concept (Fox, 1990; Marsh, Richards, Johnson, Roche y Tremayne, 1994), which has at the same time specific subdomains. In order to study and validate the physical self-concept multidimensionality, and to ensure the replicability of such dimensions, it is necessary to carry out cross-cultural research. When cultures do not share the same language, traslation is required.

Translating psychological tests from one language and culture to other languages and cultures has been, and is, a common practice. Unfortunately, there is empirical evidence which suggests that too often the quality of test translations is not very good, and so the validity of any results produced with the translatd tests is reduced (Hambleton, 1993). There are several procedures and guidelines that have been suggested to ensure the fidelity of test translations (Van de Vijver y Hambleton, 1996). For example, one of this recommended procedures is back-translation. However, even taking into account all that procedures and guidelines, investigators should not assume that the translation is perfectly equivalent to the original source language version.

The objective of the present paper is to develop a translation into Spanish of the Physical Self-Description Questionnaire (Marsh, et al., 1994), and furthermore, to use confirmatory factor analysis techniques to study the equivalence of the traslated version of the questionnaire.

METHOD AND PROCEDURE

Instrument

The Physical Self-Description Questionnaire (PSDQ) is a 70-item instrument which is designed to measure nine specific subdomains of physical self-concept (Strength, Body Fat, Activity, Endurance, Sports Competence, Coordination, Health, Appearance, Flexibility), and two global components (Global Physical Self-concept, Self-Esteem). Each item is a simple declarative statement and subjects respond with a 6-point true-false response scale.

Sample

The English version of the PSDQ was administered to 986 Australian teenagers (537 males and 448 females), and the Spanish version of the questionnaire was administered to 986 Spanish teenagers (499 males and 487 females). The ages of the subjects in both samples ranged from 12 to 16. The mean age was 13.5 (S.D.= 1.11) in the Australian sample, and 13.3 (S.D.=1.07) in the Spanish sample.

Procedure

The instrument was translated following the back-translation procedure. Three diferent bilingual persons translated the questionnaire from English into Spanish. A fourth bilingual person translated this first version of the questionnaire from Spanish back to English. The original and back translated versions of the tests were then compared. Differences were noted and corrected. A pilot study was then carried out in order to test the adequacy of the questionnaire to be used with Spanish teenagers. The Spanish version was administered to a group of 27 Spanish boys and girls whose ages ranged from 12 to 13. Some changes where introduced to make the items more understandable. Finally, a second pilot study was carried out to test these modifications, concluding with a final Spanish version of the PSDQ.

Both English and Spanish versions of the questionnaire were administered under standardized conditions in classroom settings in groups of 30 to 40 persons by teachers (Australian sample) or by members of the Spanish research team (Spanish sample).

Analysis

Confirmatory factor analysis were carried out with LISREL 8 (Jöreskog y Sörbom , 1993) to test the equivalence of both versions of the questionnaire. The following nested models were tested: Model 1 = structural equivalence (a 11 common factor model holds in both groups); Model 2 = total factor loadings invariance model (all factor loadings are invariant across groups); as the hypothesis in Model 2 might not be tenable, a third model (Model 3) with partial factor loadings was also tested (only some factor loadings are invariant across groups).

RESULTS

The results in Table 1 show that the χ^2 value for Model 1 is statistically significant, however as this index is very sensitive to sample size and the other indices suggest a reasonable fit for the model, it could be concluded that a eleven common factor model holds in both groups, so the structural equivalence of the questionnaires is confirmed. The chi-square difference of Model 2 and Model 1 is statistically significant, so suggests that all items are not related to the trait in the same way across the two versions of the questionnaire. Further analyses are then required to identify whether a subset of items is invariant across groups. That search is facilitated by LISREL modification indices (MIs). The MI values suggested that the factor loadings of 14 items could not be held invariant across samples. In Model 3 the factor loading parameters associated with these 14 items are freely estimated for each group. The chi-square difference of Model 3 and Model 1 is not statistically significant showing that 14 of the 70 items of the questionnaire do not provide equivalent measurement across groups. This 14 items display nonuniform differential item functioning (DIF). The goodness of fit indices of the different nested models are showed in Table 1.

TABLE 1. Goodness of Fit Indices for Models Tested

Models	χ^2	df	χ^2 Diff	Diff df	RMSEA	p-value	RMSRS	GFI	CFI
Model 1	13449.05*	4580			0.031	1.00	0.053	0.82	0.90
Model 2	14124.22*	4639			0.032	1.00	0.054	0.81	0.89
(2/1)			675.2*	59					
Model 3	13511.94*	4625			0.031	1.00	0.052	0.82	0.90
(3/1)			62.9 ns	45					

* = $p < 0.01$; ns = not statistically significant

Note: χ^2 Diff and Diff df = difference between χ^2 and df for two models, for example models 2 and 1 (2/1); RMSEA = Root Mean Square Error of Aproximation; RMSRS = Root Mean Square Residual Standardized; GFI= Goodness of Fit Index; CFI = Comparative Fit Index.

DISCUSSION AND CONCLUSIONS

The purpose of the present investigation was to produce a Spanish equivalent version of the PSDQ. Although some items displaying DIF were detected, the only requirement to compare groups on a latent variable is that partial factor loading invariance be established (Byrne, el al., 1989). Taking into account that the percentage of invariant items in the different subscales range from 50% to 100%, we could conclude that the translated version of the PSDQ can be a useful instrument to be used in physical self-concept cross-cultural research. However, further research is needed to analize to which source of variance (linguistic or cultural) we should attribute the observed lack of item equivalence. Finally, the results of this study demonstrate that even following the guidelines traditionally suggested for test translation, investigators should not assume the equivalence of the translated questionnaire. DIF analysis should be carried out, so that non equivalent items might be identified and either eliminated or modified.

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AN EXAMINATION OF THE RELATIONSHIP BETWEEN THE INTENSITY AND DIRECTION OF ANXIETY AND PERFORMANCE

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KEY WORDS: Competitive anxiety, intensity, direction,

INTRODUCTION

Anxiety is an emotional state that has been viewed as negative and with debilitative effects upon performance. Consequently, the majority of sport psychologists has tried to educate their athletes to cope with anxiety (Jones, 1995). Regarding sport performance, there has been a controversy in the attempt to describe and explain the relationship between anxiety and sport performance. Since recently, the relationship between anxiety and sport performance has been examined by the estimation of the intensity of the anxiety symptoms. However, a considerable body of literature from mainstream psychology suggests that anxiety might have positive effects upon performance (see review from Jones, 1995). Thus, a possible explanation for the inconsistent findings concerning competitive anxiety could be based on the interpretation of anxiety symptoms, i.e. the direction of the anxiety experience.

The direction of anxiety refers to the experience of the cognitive and physiological symptoms as positive or negative for the performance. For example, an athlete may be concerned about an upcoming event in a near panic state that inhibits his performance, while another one may be equally concerned about the upcoming event. The latter views his concern as necessary for an optimal performance (Jones, 1995).

The direction of anxiety has been examined in the sport domain during the last decade. The research findings support the distinction between the intensity and the direction of anxiety (Jones, 1995). Bakker (1993), using the same research design with the same subjects in different occasions, found both positive and negative associations between anxiety and sport performance. He attributed these results to the either positive or negative effects that anxiety might have upon performance. Moreover, Jones and Swain (1992), although they didn't find differences on the intensity of cognitive and somatic anxiety of high and low competitive athletes, reported that the highly competitive group interpreted their cognitive anxiety as more facilitative than the low competitive group. Jones, Swain and Hardy (1993) found similar results regarding the level of performance. On the other hand, Edwards and Hardy (1996), using an intraindividual paradigm, did not support the relationship between direction of anxiety and performance. The researchers attributed these results to the gender, age and cultural differences of the sample.

The aim of the present study was to examine the relationship between the intensity and direction of anxiety using an intraindividual paradigm such as Edwards and Hardy's one. Moreover, the present study aimed to test the following hypotheses: a) self confidence predicts the direction of cognitive and somatic anxiety symptoms; and b) direction of anxiety adds to the variance of performance explained by the intensity of anxiety.

METHOD

SAMPLE

The sample of the study consisted of 36 female basketball athletes competing at the A^1 and A^2 national divisions. The mean age of the sample was 21.9 years and the standard deviation was 3.7.

PROCEDURE

Measures: The subjects of the study completed the greek version of Competitive State Anxiety Inventory – 2 (Tsorbatzoudis, Barkoukis, Kaissidis-Rodafinos & Grouios, 1998). The CSAI-2 was modified in order to measure the direction of anxiety. The directional interpretation scale used by Jones and Swain (1992) was added. This scale ranges from +3 (very positive) to –3 (very negative). Thus, the possible direction scores on each subscale ranged from +27 to –27. Moreover, the instructions used by Edwards and Hardy (1996) were added to the questionnaire.

Performance: For the estimation of the performance the athletes' subjective evaluation was used as proposed by Edwards and Hardy (1996). Moreover, the subjective evaluation of the coach was used. The athletes and the coaches were asked to evaluate the performance on a 10-point Likert scale (1=played much worse than usual to 10=played much better than usual). Finally, an objective measure of performance was used. This measure included the assessment of points, assists, steals, rebounds, blocks, turnovers, missing shots and missing free throws divided by participation time. The scores of these measures were standardized and an overall index of performance was computed from the addition of these measures. The whole procedure was repeated for six competitions.

RESULTS

The results of the study indicated the existence of moderate to high correlations between intensity and direction of anxiety (Table 1).

TABLE 1. Analysis of Correlation between Intensity and Direction of Anxiety Symptoms

	2	3	4	5	6	7
1. Cognitive anxiety intensity	.604**	-.654**	-.793**	-.474**	-.734**	-.287*
2. Somatic anxiety intensity		-.474**	-.528**	-.488**	-.621**	-.196
3. Self-confidence intensity			.618**	.451**	.801**	.218
4. Cognitive anxiety direction				.652**	.741**	.176
5. Somatic anxiety direction					.565**	.102
6. Self-confidence direction						.269*
7. Performance						

* $p < .05$, ** $p < .01$

The regression analysis was used to examine the relative influence of intensity and direction of anxiety symptoms upon performance. The results indicated that the cognitive anxiety intensity contributed significantly to the prediction of performance ($R^2 = .10$, $F_{(2,71)} = 3.98$, $p<.05$) while anxiety direction did not add significantly to the variance explained by the intensity. Regarding somatic anxiety and self-confidence, the regression analyses indicated that both these variables did not contribute significantly to the prediction of performance.

DISCUSSION

The correlation analysis revealed the existence of significant correlations among intensity variables and among direction variables. The correlations found among the intensity variables were in the same direction with those reported by Martens, Vealey and Burton (1990). These findings indicate that increased self-confidence is related to lower levels of cognitive and somatic anxiety. The positive correlations found among the direction variables are similar to those reported by Edwards and Hardy (1996). Regarding performance, the intensity of cognitive anxiety and the direction of self-confidence were the only variables

related significantly to performance. These findings support the multidimensional anxiety theory, that considers cognitive anxiety to be the anxiety component related most strongly to performance. Additionally, the aspect of this theory that cognitive anxiety deteriorates performance was supported in the present study.

Furthermore, the analysis of correlation revealed the existence of significant correlations between the intensity and direction variables. These correlations were in the same direction with Edwards and Hardy's (1996) findings. These findings indicate that the intensity of the anxiety symptoms has negative relationship with all the direction variables suggesting that athletes with high cognitive or high somatic anxiety perceive their symptoms as debilitative to their performance. On the other hand, the results revealed the existence of positive relationship between the intensity of self-confidence and the direction variables. These results confirm the first hypothesis of the present study. These findings suggest that increased self-confidence leads athletes to perceive their cognitive and somatic symptoms as facilitative to their performance.

The regression analyses demonstrated that the direction of anxiety symptoms does not contribute significantly to the prediction of performance. Therefore, the second hypothesis of the present study was not supported. These findings are similar to Edwards and Hardy's (1996) findings but they are in contrast with Jones and his associates' findings. Edwards and Hardy (1996) attributed their results to the not fully validated scale, as well as the age, gender and culture of the subjects. It should be noted that the samples of the present and Edwards and Hardy's (1996) studies are similar regarding the age and gender, but different regarding their culture. It can be argued that these characteristics might influence the interpretation of the anxiety symptoms by the athletes. Furthermore, the research design employed by Edwards and Hardy (1996) and used in the present study might be responsible for the inconsistent findings. In conclusion, the results of the present study suggest that: a) the intensity of cognitive anxiety is the component most strongly related to performance, b) self-confidence can in a degree predict the direction of cognitive and somatic anxiety; and c) the direction of the anxiety symptoms does not add significantly to the prediction of performance.

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AN EXPLORATORY STUDY OF METAMOTIVATIONAL STATES IN INDIVIDUALS PARTICIPATING IN EXTREME ACTIVITIES

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KEY WORDS: Reversal theory, metamotivational states, telic-paratelic states

INTRODUCTION

Reversal theory appears to be an interesting perspective describing the perception of arousal by individuals participating in risk activities. This theory is thought to provide the most satisfactory theoretical interpretation of the arousal experienced by individuals (Kerr, 1989). A fundamental aspect of reversal theory, which provides a satisfactory framework for understanding the interpretation of motivation, is the notion of metamotivational states (Kerr, 1989, 1993). Metamotivational states differ from motivational states and have been described as the frames of mind existing over and above the individual's motives at that specific time. Metamotivational states influence the general characteristics of motivation. According to the reversal theory, there is a number of metamotivational states which are linked together in opposite pairs constituting the component features of a bistable system (Kerr, 1990). Metamotivational states do not represent a range of behaviour along a continuum but they represent opposite states. Only one of these pairs is operant at a specific time. An individual may be in a particular state for a few seconds or for longer periods of time and then change to the opposite state (Kerr, 1989). These changes from one metamotivational state to the opposite one are called reversals (Kerr, 1989, 1993).

As far as arousal is concerned, the telic-paratelic pair is the most relevant metamotivational state. Individuals in the telic state are usually serious minded, planning oriented and generally tend to avoid arousal, because they experience it as anxiety. On the other hand, individuals in the parartelic state are usually spontaneous, playful, and oriented towards the present, seeking immediate pleasure and high arousal, which is experienced as pleasant feelings of excitement (Kerr, 1989, 1990).

Individuals often display a preference towards one metamotivational state over its opposite one. For example, a person might spent more time in the telic state while another one might spent more time in the paratelic state. These persons are described in the reversal theory as telic and paratelic dominant respectively. However, dominance as described by reversal theory is fundamentally different from the notion of other personality traits that consider behaviour to be consistent. On the contrary, although someone is paratelic he will switch to the telic state under certain condition (Kerr, 1990). Murgatroyd, Rushton, Apter and Ray (1978) developed the Telic Dominance Scale (TDS) for the measurement of the telic dominance. Moreover, a state version of the TDS, the Telic State Measure (TSM) has been developed by Svebak and Murgatroyd (1985).

The development of the TDS and the TSM gave researchers the opportunity to examine the tenets of reversal theory. Research conducted by Kerr (1987) showed that professional athletes are more telic dominant persons than amateur and recreational athletes. On the other hand, Kerr and Cox (1988) found no differences in telic dominance regarding the ability level of the athletes. Regarding the type of the sport, Svebak and Kerr (1989) reported that endurance athletes are more telic dominant than athletes from explosive sports. Additionally, research has been done for the investigation of telic-paratelic dominance of individuals participating in extreme activities (Kerr, 1991). The results of these studies showed

that individuals participating in extreme activities were less telic dominant than athletes of 'safe' sports.

However, the theoretical concepts of the theory have not been thoroughly examined so far. Thus, the aim of the present study was: a) to exploratory examine the degree to which the telic state can be predicted from telic dominance; b) to test the correlations among TDS subscales and TSM items.

METHOD

SAMPLE:

The sample of the study is consisted of 84 individuals participating regularly in extreme recreational activities. The mean age of the sample was 21.4 years and the standard deviation was 8.1.

PROCEDURE:

The subjects completed the Greek version of the TDS (Tsorbatzoudis, Barkoukis & Angelakopoulos, 1998) in neutral conditions and the TSM after their participation in an extreme activity. The TDS includes 42 items measuring three factors: seriousmindness, planning orientation and arousal avoidance. Moreover, a total score indicating telic dominance was calculated (Murgatroyd et al., 1978). The TSM is consisted of four items, as follows: a) how serious or playful they felt, b) how far they would have preferred to plan ahead or be spontaneous, c) how aroused they felt and d) the level of arousal they would have preferred. Subjects were asked to respond in a six point Likert scale.

RESULTS

The results of this study indicated the existence of moderate but significant correlations among the subscales of the TDS and among the items of the TSM (Table 1). The regression analysis revealed that none of the TDS subscales significantly predicted the correspondent items of the TSM. Furthermore, none of the TSM items were predicted by the telic dominance.

TABLE 1: Correlation Coefficients among TDS Subscales and TSM Items

	2	3	4	5	6	7	8
1. Arousal avoidance	ns	.27**	.62**	ns	ns	ns	ns
2. Seriousmindness		.48**	.74**	ns	ns	ns	ns
3. Planning orientation			.80**	ns	ns	ns	ns
4. Telic Dominance				ns	ns	ns	ns
5. TSM (a)					ns	.56**	ns
6. TSM (b)						ns	.40**
7. TSM (c)							.22*
8. TSM (d)							

* $p < .05$, ** $p < .01$

DISCUSSION

The results of this study showed that there was a moderate to high relationship among the subscales of the TDS. The correlation coefficients of this study were found to be similar to those reported by Murgatroyd et al. (1978). These findings suggest that: a) individuals who avoid arousal prefer to plan their future carefully and derive satisfaction rather from the achievement of their goals than the immediate behaviour; and b) individuals who perceive their

goals as essential and important prefer to plan their future and organise the pursuit of their goals. Moreover, the moderate to high correlations found among the subscales of the TDS and the total telic dominance score suggest that seriousmindness, planning orientation and arousal avoidance are basic characteristics of a telic dominant individual.

The correlations found among the TSM items suggest that individuals in the telic state, i.e. individuals who wished to have planned their actions and felt high arousal preferred lower levels of arousal. These results support the notion of the reversal theory that individuals in the telic state seek for low intensity activities. According to reversal theory, this is attributed to the fact that these individuals experience high arousal as unpleasant (e.g., anxiety; Kerr, 1989).

Finally, the results of this study suggested that neither the subscales of the TDS nor the telic dominance score can predict the telic state. These findings provide support for the fundamental tenet of reversal theory, suggesting that behaviour is inconsistent and metamotivational states are not traits but opposite pairs. However, the results of the present study are only indicative, since the research design might not be appropriate to test this aspect of reversal theory. A research design including repeated measurements of the subjects could have been more suitable. In conclusion, the results of this study support the tenets of reversal theory and provide a basis to initiate research upon the theoretical concepts of the theory.

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CHANGES IN MOTIVATION THROUGH SPORT OF YOUNG TO ELITE-TOP SPORT

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(A) KEY WORDS

Sport motivation,top sport, sport of young, participation and incentive motivation, achievement motivation, cognitive motivation, self-efficacy, goal orientations, group and individual sport

(B) INTRODUCTION

Motivation for sport activities has become very popular area among sport psychologists. Success in competitive sports depends mostly on athlete's skills, personality and motivation. The presence of "zeitgeist" social cognitive perspective in psychology has changed the view on motivation for sport. I have combined some of the popular approaches to sport motivation:

- *social cognitive perspective* (which has started with the work of Weiner (1971) and is built around expectancies and values, that individuals attach to different goals and ach. activities)
- *theories of ahievement motivation* (vhich emphasize the athlete's need to achieve success), achievement and goal orientations, and
- *the principles of incentive motivation* (which are built around the incentives, which represents the kind of "pull" motivation).

A few important principles follows:

- Self-efficacy (Bandura, 1977, 1986) is a common cognitive mechanism for mediating athlete's motivation, thought patterns and behaviour. Self-efficacy beliefs and expectations are defined as *athlete's judgements of their capability to perform at certain levels. It is a conviction that an athlete needs to successfully execute the behaviour necessary to produce a certain outcome. It is athlete's assessment what he/she can do with his/her ability.*
- Perceived competence: A prediction of Harter's model (1981) is that athletes who perceive themselves competent in sport should be likely to participate in sport.
- Achievement goal approaches: Participation and persistence in sport, the choice and intensity of training and participating are goal directed (Duda, 1992). The goal is subjective and the effect of multiplicity of different goals is presented in the process of motivation. There are two major goal perspectives or ways of defining success: task and ego orientation.
- Participation motivation and incentive motivation: It is focused on the reasons why people engage in sport and continue in their athletic participation (Gill, Gross & Huddleston, 1980; Gould, Feltz & Weiss, 1985). Different researchers have found mainly 5 to 8 primary goals or incentives for participating in sport. These are: achievement, team, friendship, fitness, energy release, skill development and fun.

(C) METHOD AND PROCEDURE

Sample: *357 male athletes have been questioned from group* (basketball, football, waterpolo, ice hockey and handball) *and individ. sports* (ski-jumping, alpine skiing, judo, sport climbing)

- 168 top athletes: TA (national representatives of Slovenia) and
- 189 young athletes adolescents aged 12-14: YA.

4 main groups of athletes have been formed:

- top athletes in group sports (TG), top athletes in individual sports (TI),
- young athletes (12-14) in group sports (YG),young athletes (12-14) in individual sports (YI)

Instruments:

Motivational questionnaires: nAch questionnaire (Costello, 1967); sport attitudes inventory (Willis, 1982); sport orientation questionnaire (Gill & Deeter, 1988); self-motivation inventory (Dishman, Ickes & Morgan, 1980); task and ego orientation sport questionnaire (Duda, 1989); sport motivation scales (Butt, 1979); motives for competition scales (Youngblood & Sinn, 1980); participation motivation questionnaire (Gill, Gross & Huddleston, 1983); questionnaire of atribution of success (ability and effort) and self-efficacy.

Procedure:

The athletes were tested in groups separately by sport disciplines. The general instruction were explained and they were asked to complete all questionnaires. Different statistical procedures have been used: DESCRIPTIVES; ANOVA for searching for differences between group and individual sports, top and young athletes; FACTOR ANALYSIS for building incentive systems and multi-dimension dynamic model of motivation; DISCRIMINANT ANALYSIS for searching for main motivational discriminant functions.

(D) RESULTS

The Factor Analysis extracted 6 incentiv systems and participation motivation: Recreation (Fitness) Motives, Skill (ability) Development Motives, Achievement Motives, Motives for Improvement and Challenge, Sensation Seeking and Individual Motives, Group Atmosphere and Friendship Motives. Factor analysis of second order extracted two factors: general (skill development, achievement, improvement, challenge and group atmosphere) and specific factor (sensation seeking and individual motives).

Fig.1: Incentive systems

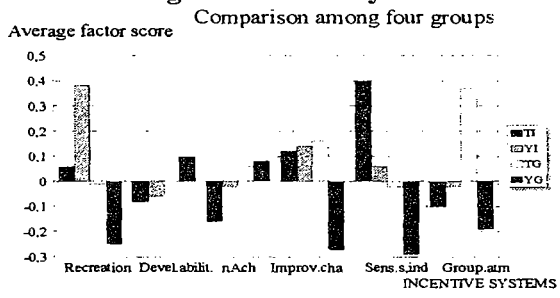
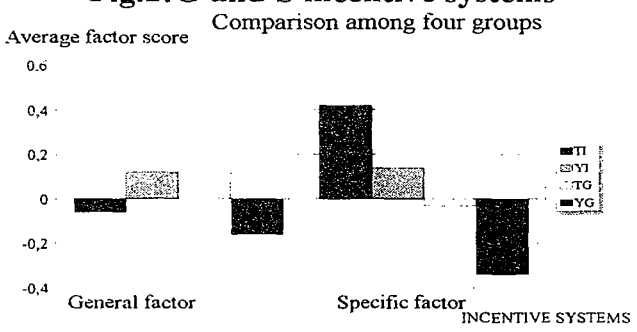


Fig.2:G and S incentive systems



Factor analysis of all motivational variables made the base of New (eclectic) Motivation model.

Table 1: Factor Analysis of reduced model of variables of motivation (PC, Varimax)

Factor	Eigen Value	% of Var.	Cum.% V.
Intrinsic achievement motivation	5,48	27,4	27,4
Self-regulatory mech., cognitive mediator of motiv.	2,15	10,7	38,2
Achiev.Orient.,Personal Charact.of Ach. Behavior	1,42	7,1	45,2
Exstrinsic achievement motivation	1,27	6,3	51,6
Incentive system of general (group) motivation	1,08	5,4	57,0
Incentive system of ego (individual) motivation	1,01	5,1	62,0

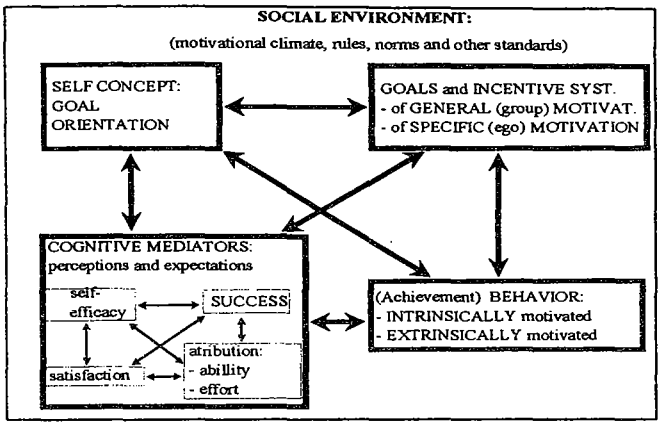


Fig. 3:Multidimensional Dynamic Model of Motivation (Tušak, 1997)

Fig. 4: Group Centroids and Canonical Discriminant Functions

FUNCTION	YG	YI	TG	TI
The Power of Extrins.Syst. of Incent. Motiv.	1,56	0,15	-1,09	-1,33
Individual Ego Motiv.	-0,31	1,25	-1,19	0,62
Cognit,Mediat. of Motivation, Group Aspects of Motivation	-0,27	0,80	0,43	0,77

(E) DISCUSSION AND CONCLUSIONS

- There are many differences in motivation between athletes in group and individual sports
- There are many differences in motivation between top and young athletes
- Motivation of young athletes is more general and wide, motivation of top athletes is more specific and similar among different sport disciplines
- Motivation of young Slovene athletes is specific (perhaps more competitive than in other countries-which is bad), the reasons must be searched for in specific motivational climate in Slovene (the country goes from socialism to capitalism; sport as a country promotion)
- There are lots of motivational differences among sport disciplines in sports of young, but they are dissapearing in top sports
- We can describe differences in motivation with 3-fnc. discriminant model of motivation
- The model of motivation presents the determinants of motivation for sport, but what we still need is exploring more about the relations among these determinants.

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THE EFFECTS OF PROGRAMMED SPORTS RECREATIONAL TRANSFORMATION PROCESS IN THE EARLY PERIOD OF REHABILITATION ON THE SELF-IMAGE OF PARAPLEGICS

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(A) KEY WORDS

Self-image, self-esteem, sport, early period of rehabilitation, paraplegics, quality of life, sports recreational transformational process

(B) INTRODUCTION

Physical activity contributes to health and quality of life. Various researches confirm the significance of physical activity for mental health (Brown, 1990). However, there are not so many researches which would deal with physical activity from the aspect of its importance for the improvement of the quality of living of the physically impaired. The researches confirm that regular involvement in physical activity is connected with better mental health (Morgan & Goldston, 1987). Above all, people feel better after physical activity; their confidence and self-image improves; and their self-esteem increases as well (Sonstroem, 1984). Indeed, the self-image represents the basis of the awareness and communication of an individual in the whole field of personality. It is a multi-dimensional image which involves several dimensions of the opinion about oneself. It also involves the personality dimensions of self-evaluation and self-esteem and is very much connected with the personality traits. The foundations of the self-image and personality traits are laid in childhood in the early interaction with the persons that are important to an individual; in the late adolescence it becomes relatively stable. Traumatic events, of course, cause that the self-image and personality may change.

Can an improvement in the quality of life of the disabled also be achieved by means of sports? Can their adjustment problems after the injury be stabilised or reduced in any way whatsoever? Can sports activity alleviate the initial shock at the injury which has interfered in the peacefulness of their previous life in such a traumatic way? By means of such questions we try to penetrate into the laws of the behaviour and the changing life of the disabled in order to come, on the basis of the findings, to some concrete possibilities of improvement.

(C) METHOD AND PROCEDURE

Sample: An experimental and a control group were selected at the Department for the Disabled with Spinal Injuries at the Institute of the Republic of Slovenia for Rehabilitation. Selected were those disabled with spinal injuries whose medical indications, psycho-physical abilities and medical status were such as to allow their participation in the experimental programme. 8 persons were selected into the experimental group (EG), and 7 persons into the control group (CG), total 15. The subjects in both groups were equalised by sex and, as much as possible, also by age and the level and type of physical disability.
Instruments: For the measurement of the self-image we used the Tennesse scale of the self-concept (TSCS, Fitts, 1965) with the subscales: Physical self, Moral-ethical self, Personality self, Family self, Social self, Identity, Self-image, Behaviour, Self-evaluation.
Procedure: The kinesiological sport recreational transformation process took place 6 months

3 times/week in sessions of 60 minutes. The selected sports recreational programme was devised so as to form individual methodological units comprising corrective-relaxation gymnastic and stretching exercises, polygons for the execution of various movement tasks and various adjusted sports games on a wheelchair or without it (basketball, table-tennis, hockey, volleyball). The initial (IS) and final state (FS) of the self-image in both groups were checked-in CG of the disabled who were exposed only to the factor of the time that had elapsed from the injury or the begin of rehabilitation, and EG of the disabled who were, in addition to time, also subjected to the experimental factor. For the differences between the EG and CG in the IS and FS, a t-test for independent samples were used, for the differences within the individual group with respect to the IS and FS, a t-test paired were used. It was necessary to combine all four types of differences for good interpretation.

(D) RESULTS

The comparison of the initial state has revealed that the CG and EG do not differ statistically significantly in any of the components of the self-image. The conclusion was that the initial state (IS) represented the same starting basis for the both groups. The analysis of the differences between the EG and CG in the final testing has revealed some tendencies and also statistically significant differences in six (of 9) components of the self-image.

Figure 1:Self concept

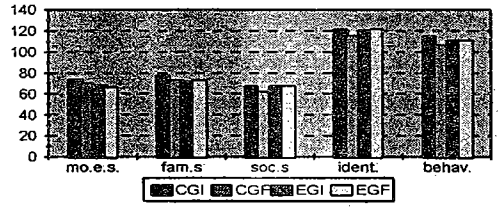
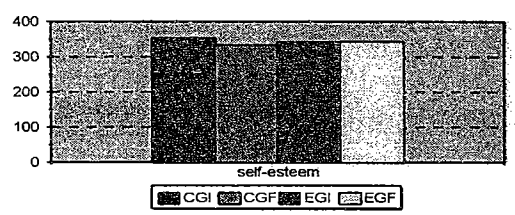


Figure 2: Self-esteem



The comparative analysis of the differences between the initial and final state in the EG and CG has shown that in the given traits and dimensions of the self-image, the trend is quite the opposite. In the CG occurs a noticeable statistically significant deterioration of the self-image, while in the EG the situation, viewed statistically, remains unchanged or even improves slightly. Hence, we can claim that the changes were caused by the experimental factor. The point is not so much that this factor caused improvement, but that it stopped the deterioration of the self-image. We must be aware of the fact that the changing of the self-image is a process. A disabled person begins to understand only gradually that life has changed for him, that they are not capable of what they do before. Thus, the self-image deteriorates with a certain time lag relative to the time of the occurrence of injuries. When after an acute stress period during which one surrounded oneself with an impenetrable defence shield, one slowly begins to open up again, he or she must begin to face all the negative consequences of the new situation. The result is a drastic deterioration of the self-image. One perceives oneself as worse than before (immediately after the injury) although the state, viewed objectively, is improving relative to the begin of rehabilitation. The disabled feels that their value and role in the family has decreased, that they are more often left out. In the field of the social self, the disabled also feels less adequate and worth in the communication with others. The feeling of identity, one's opinion about oneself, is worse than before, and the perception of suitability of behaviour is also different. One sees one's behaviour and activities as less suitable. However, in the EC there do not occur any important changes, which fact certainly ensures better possibilities of

more efficient dealing with the difficulties faced by the disabled person after the traumatic event. Thus, it seems that the influence of the experimental factor slows down or even stops the deterioration of the situation. Differences also occur in self-evaluation, where, similarly, self-evaluation or self-esteem in the CG strongly and statistically significantly worsens, while in the EG it remains the same.

(E) DISCUSSION AND CONCLUSIONS

The results confirm some of the previous findings that engagement in sports activities positively affects the entire personality. Tušak (1997) states that those who engage in sports should have higher self-regulation abilities, and that they should also better confront stressful events. Berčič and Tušak (1997) have also confirmed this fact in the researches dealing with the disabled. They in particular emphasise emotional stability which is higher in the disabled if they engage in sports. Ryan (1983), for example, states that the depressiveness reduces, and Boutcher & Landers (1988) report about the reduction of anxiety. Self-image must be understood as a mediating factor of one's interaction (i.e. the interaction of a disabled person) with the environment. The experiencing of oneself is subjective and takes place through the filter of one's self-image. The more positive the self-image of a disabled person is, the greater is the probability that he/she will not change too much as regards to his or her personality. In our study we have established that the consequences of the experimental factor in the domain of psyche are seen above all in the prevention of the occurrence of a negative self-image in the disabled, thus reducing the danger of defence reactions. The self-image of a disabled person remains more or less the same, so their information from the environment remain also to a greater extent unchanged. This probably enables the disabled to preserve a suitable personality structure suitable behaviour. In the disabled who were not subjected to the experimental factor there occurs, however, the deterioration of the self-image which results in defensive behaviour, increased depressiveness, inhibition, greater emotional instability and increases the probability that a disabled person will isolate from the environment (Berčič and Tušak, 1997).

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UPBRINGING OF SPORT MENTALITY IN CHILDREN 4 - 7 YEARS OLD

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Key words: sport mentality, motivation, necessity, upbringing, health, methods, competitiveness, healthy environment.

Introduction

The problem of maintaining children's health continues to challenge specialists and parents in many countries of the world. In Russia the deterioration of children's health has taken a steady downward path. Unfortunately, ecological, social and political activities didn't bring desirable results. Regarding this problem, the fact that health is considered disconnected from an individual intensifies the problem. We cannot consider health an abstract notion - it is part of every individual. That is why every person must take care of him or her self in order to maintain and increase health. The state cannot, as earlier, guarantee a person good health as the state does not consider the needs of a healthy nation. This fact brings forward the problem of raising motivated, conscious mannered children regarding health by creating a healthy environment and cultivating a mentality towards sports. We consider sport mentality as the understanding of a child's striving for spiritual and physical harmony, which must be part of childhood as a motivated necessity for strengthening and maintaining a child's health - with the help of physical activities which include competitiveness. In the notion of a healthy environment there is also a widescale complex of economic, ecological, socio - psycological and even political measures. This complex is directed to create optimal conditions for people's lives.

Methods and procedure

An attempt to bring up the sport mentality of children 4 - 7 years old was carried out during 1994 - 98 in families and kindergartens. Over 1000 4 - 7 year olds took part in the experiment. A special programme and methodical materials were worked out for upbringing of sport mentality.

The goal of the programme was to introduce children to spiritual and material values of the Olympic movement as one of the most important cultural phenomenon of the XX century.

Tasks - to introduce children to the history of ancient and modern Olympic movement.

- to bring up children in the spirit of values and morals common to all, friendship, peace between peoples and nations.

- to cultivate in children the necessity of competitiveness in all spheres of life.

Form at the programme narratives, fairy - tales, quizzes, riddles, competitions of illustrations, all kinds of performances and presentations; Olympic lessons; role and subject games, entertaining and intellectual games, visiting sport museums, competitions and trainings; meeting with champions. This programme has been carried out within the framework of creating a healthy environment for children.

Results

We chose a kindergarten of special education which taught children with chronic illnesses of the upper respiratory tract and those with a low level of physical and functional preparedness in order to estimate the results of the experiment.

As a result of the programme "To Olympic picks since childhood" children have mastered eagerly complex co-ordinative exercises such as skating, skiing, swimming, sport games with objects and gymnastic apart. All these skills helped to improve both their physiological and intellectual indexes of development. F.E. index of vital capacity of lungs of 4 year old children has improved by 26,4%; and by 41,5% for 7 year old children. The children's intellectual indexes improved in all age groups. The time of visual motor reaction improved by 26,3%. The index of mobility of nervous processes rose by 17 - 20%. During these years there was not refusal from competitive activities by the children. Masters at the kindergarten and children's parents have noticed positive improves in children's memory, diction, emotional and motor skills. According to medical observations, the rate of illness has reduced by half. In 1998 this Kindergarten earned the title "Kindergarten of the year".

Conclusion

Upbringing of child's sport mentality at pre-school age creates favourable pre-conditions to strengthen their health, to raise emotional and physical status of every child through individual competitive activity in different spheres of their lives.

ME AND MY BODY. THE PERCEPTION OF PHYSICAL APPEARANCE IN ADULT PSYCHIATRIC PATIENTS IN COMPARISON TO NON-PATIENTS.

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KEY WORDS: physical appearance, physical self, self-esteem, psychiatry, exercise therapy

INTRODUCTION

Most psychiatric patients lost their feeling of self-control. This lead to a lowered self-esteem and initiated a vicious circle of loses of self-belief and increased avoidance. Following the hierarchical multidimensional structure of the self, physical dimensions have come to be considered as a specific concept within this structure. This 'physical self' got operationalised into different subdomains, including physical appearance and perceived physical competence (Fox, 1997; Marsh et al., 1994; Sonstroem & Morgan, 1989).

The purpose of the present paper is to investigate whether the perception of physical appearance in adult psychiatric patients (at the moment of intake) is different from 'normal' individuals and whether any correlation between perceptions of physical competence and physical appearance can be found. If this is the case, further research could address the effectiveness of exercise therapy as a mean to increase perceptions of the physical self in psychiatric patients during their treatment period. The following research questions were formulated:

1. Are there any differences in perception of physical appearance between psychiatric patients, at the moment of intake at the hospital, and non-patients?
2. What is the relationship between perceived physical competence and perceived physical acceptance in psychiatric patients and non-patients at the same time?

METHOD AND PROCEDURE

Subjects

The total group consists of 256 persons, split over three subgroups, namely psychiatric patients (n=111), sedentary persons (n=86) and sportsmen (n=59) (table 1). All psychiatric patients were admitted in a cognitive-behavioural setting with a main DSM-IV diagnosis of mood disorder or personality disorder. Although arbitrary, but as the main purpose of the study was the distinction between patients and non-patients, sedentary is defined as performing less than 4 hours of sports per week and sportsmanship is defined as performing more than 4 hours of sports per week.

No age differences are found between the different groups, nor in a posteriori testing.

Instruments

Physical acceptance was questioned by means of the Body Attitude Scale (Bosscher & Baardman, 1989). This scale was originally developed towards Dutch adult psychiatric patients.

It consists of 45 self-report items as a measure of cognitive perception of physical appearance, and is organised in three subscales: (a) Body Appreciation, or the negative idea one has of his/her own body; (b) Body Projection, or the conviction that others share that opinion of negative thoughts towards one's own body; and (c) Body Attribution, or the conviction that others link negative social consequences to this attitude. Scores (5-point Likert-type scale) range from 45 to 225, with low scores representing adequate perception of physical acceptance.

Perceived physical ability, as a measure of physical competence, was questioned by means of the Dutch version of the Perceived Physical Ability subscale of the Physical Self-Efficacy Scale (Ryckman et al., 1982; Bosscher et al., 1987). This subscale is a 10-item Likert-type scale appraising the individual's perception of his/her physical abilities. Scores range from 10 to 50, with low scores representing adequate perception of physical ability.

Both instruments have adequate validity and reliability for psychiatric populations (Bosscher & Baardman, 1989).

TABLE 1. Perception of Physical Appearance in Male and Female Psychiatric Patients, Sedentary Persons and Sportsmen.

	patients		sedentary persons		sportsmen	
	male	female	male	female	male	female
number	55	56	47	39	29	30
age ± SD	36 ± 9.09	35 ± 10.86	36 ± 12.88	38 ± 13.15	32 ± 12.22	34 ± 11.75
body attitude	118.60 ± 31.88	98.43 ± 25.93	90.47 ± 16.27	79.13 ± 12.89	88.10 ± 17.38	81.00 ± 13.98
body apprec.	53.07 ± 15.37	42.68 ± 11.89	40.26 ± 8.58	35.03 ± 7.43	38.66 ± 9.14	35.10 ± 7.37
body proj.	37.62 ± 9.57	31.00 ± 8.23	30.68 ± 5.91	25.10 ± 4.73	28.83 ± 5.59	25.53 ± 4.64
body attrib.	27.91 ± 8.67	25.57 ± 8.76	20.38 ± 4.41	19.05 ± 4.09	21.21 ± 4.72	19.93 ± 4.99
perc. phys. ab.	29.14 ± 11.01	31.04 ± 8.10	23.87 ± 6.35	29.87 ± 6.54	21.90 ± 4.90	22.86 ± 5.93

Procedure and analysis

Data for psychiatric patients were collected during regular psychomotor therapy sessions. Data for the other participants were collected by proxy. Data analysis included simple ANOVA, followed by post hoc Scheffé Test to identify group differences, and Pearson product correlation coefficients for examination of relationships.

RESULTS AND DISCUSSION

In answer to the first research question, adult psychiatric patients in both males and females, do have significantly lower perception of physical appearance (figures 1 & 2) than the non-patient groups ($F(2,123) = 13.42$, $p<.01$ for males; $F(2,129) = 22.88$, $p<.01$ for females). The same results are found for the three subscales of the Body Attitude Scale, namely body appreciation ($F(2,123) = 9.56$, $p<.01$ for males; $F(2,129) = 20.08$, $p<.01$ for females), body projection ($F(2,123) = 11.85$, $p<.01$ for males; $F(2,129) = 16.59$, $p<.01$ for females), and body attribution ($F(2,123) = 12.88$, $p<.01$ for males; $F(2,129) = 19.19$, $p<.01$ for females).

With regard to the second research hypothesis, significant correlations between perceived physical ability and physical appearance are found for both male and female psychiatric patients

and sedentary persons (ranging from r=.37 to r=.64). No significant correlations between both variables are found for sports(wo)men.

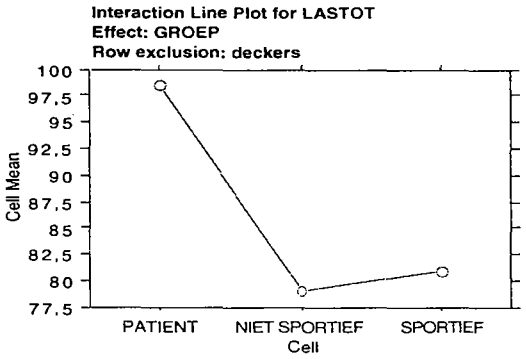

FIGURE 1. Differences in Perception of Physical Acceptance in Male Psychiatric Patients, Sedentary Persons and Sportsmen.

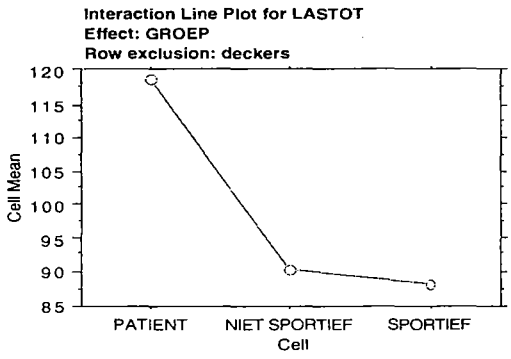

FIGURE 2. Differences in Perception of Physical Acceptance in Female Psychiatric Patients, Sedentary Persons and Sportsmen.

CONCLUSION

Perception of physical acceptance is found to be significantly lower in psychiatric patients than in non-patient groups. The interaction between perceived physical ability and physical appearance, however, is significant in psychiatric patients as well as in sedentary persons. These findings support that exercise therapy, consisting of both body awareness training and training towards improvement of subjective physical well-being as two different factors, might be an effective strategy towards improvement of perceptions of physical acceptance in psychiatric patients. Effect studies will have to confirm these findings.

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PSYCHOMOTOR THERAPY FOR DEPRESSIVE PSYCHIATRIC PATIENTS: EFFECTS ON THE SELF AND ON THE MOOD

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KEY WORDS: exercise, clinical depression, self-esteem, single-subject methodology

INTRODUCTION

Psychomotor therapy is defined as a treatment form that aims to act systematically on body perception and behaviour during movement situations in order to achieve therapeutic objectives. It has been an integral part of the general treatment plan in Belgian psychiatric hospitals for over 30 years. Originally, psychomotor therapy goals followed general therapy theories and were not individualized. Currently, however, therapeutic objectives are based on specific observations and diagnostics of individual patients during or related to movement situations. This has lead to the development of individualised treatment programs. Initially inspired by the experiences of Bosscher (1993) and Martinsen (1990), a fitness training program was set up as a specific form of psychomotor therapy for depressive patients with the major objective of improving their mood. Evidence existed that exercise is as effective in reducing depression as more traditional treatment plans (psychotherapy, medication), provides a low-cost therapy; and does not produce the unpleasant side effects such as cardiovascular complication and addiction that are associated with some drug therapies. Above all, exercise improves immediate and long term prospects for health as it reduces chances of diseases associated with a sedentary lifestyle.

The fitness program (1 hr, three times/week) combines strength and endurance training through cycling, walking or running, and resistance exercise in an indoor training facility at the psychiatric hospital. Training sessions are given to open groups of 3 to 5 patients. The goals of this program are situated within a cognitive-behavioural therapy approach, including (1) creating success experiences by setting concrete and achievable objectives; (2) reinforcing and showing social appreciation by fellow patients and therapist; (3) a critical evaluation of personal performance and progress; and (4) improving objective and subjective fitness.

In the initial phase of the program, primary focus is on the relationship between improved cardiorespiratory fitness and reduction of depressive symptoms (Van Coppenolle, Probst, Knapen, Poot & Peuskens, 1993). Although the program has produced both an improvement of mood status and an increase in cardiorespiratory fitness (+ 17%), we have faced a number of problems. In order to prevent drop out, we have had to lower the training intensity below 50% of the maximal capacity. Following the guidelines of the American College of Sports Medicine, the requirements for aerobic training were therefore no longer fulfilled. Furthermore, participants reported therapeutic response to exercise that was situated merely in the psychological domain. Improvement in aerobic fitness and strength are therefore no longer considered as prerequisites for changes in mood status. This was also reported by Martinsen and Morgan (1997) and Craft and Landers (1998).

With regard to both further research and therapeutic work, it is important to focus on the identification of patients responding especially well to exercise, as well as on the

identification of the effective elements within the exercise program. However, the nature of the study did not allow a random sampling of our subjects. This made us change our methodology towards single-subject methodology or 'individualised effect-study'. In comparison to group designs, these designs have a number of features that might be beneficial towards clinical populations in general, and our patients in particular (Hrycaiko & Martin, 1996). The purpose of this contribution is to illustrate the use of single-subject methodology in psychomotor therapy interventions in patients with recurrent depressive disorders.

METHOD

All participating patients are admitted to this cognitive-behavioural setting using the main DSM-IV diagnosis of mood disorder and an elevated depression score (BDI > 16) (Beck et al., 1961). All patients undergo careful medical screening: patients with increased cardiovascular risk factors or somatic contra-indications are excluded from participation. Patients with acute psychotic symptoms are also excluded. Data are collected by means of self-recorded daily measures on perception of depression, anxiety, tension and physical well-being (7-point scale, from 1 'absent' to 7 'overruling all'). Data on cardiorespiratory measures are collected via the Åstrand-Rhyming Ergometer Cycle Test (estimation of VO_2max.; Åstrand & Rodahl, 1977).

RESULTS AND DISCUSSION

Differences in both depression scores (improvement of mood) and cardiorespiratory fitness (increase in VO_2max.) between the initial phase and after a 5 months of fitness training program assume a relationship between those two variables (Table 1).

TABLE 1. Raw Scores on Depression (BDI) and Cardiorespiratory Fitness (VO_2max.) before and after Fitness Training.

	33yr F (295.5)	34yr M (296.3x)	47yr M (296.23)	34yr M (296.23)
BDI	27 → 4	29 → 23	16 → 6	m.v.
VO_2max.	23 → 42	40 → 52	37 → 54	m.v.

F: female M: male ( ): DSM-IV diagnosis m.v: missing value.

Investigating the perception of depression however (Table 2), a cluster with significant correlations with perceptions of anxiety, tension, AND physical well-being in three of the four individual cases can be distinguished. Because these variables correlate significantly with 'time' (resulting in an improvement of the variable over the time of the intervention), we forward the hypothesis that it is not the intervention itself, but the positive changes in perception of the physical activity throughout participation (improvement in 'physical well-being'), that influences mood in a positive way [after the Exercise and Self-Esteem Model (Sonstroem & Morgan, 1989)]. Because clinical depression is associated with losses of self-belief or lowered self-esteem (Bosscher, 1993), fitness training, aiming at ameliorating the physical self, might therefore be taken into consideration as an effective means to enhance general psychological well-being in depressive patients as well. The improvement in cardiorespiratory fitness is provides additional benefit from a health-related perspective.

TABLE 2. Relationship between Perception of Depression and other Mood Related Variables (all measures are significant for $p<.01$).

	Perception of depression			
	33 F (295.5)	34 M (296.3x)	47 M (296.23)	34 M (296.23)
Perception of ...				
anxiety	.77	.54	.79	.91
tension	.72	.40	.72	.87
phys. well- being	-.82	-.44	-.51	-.73

F: female M: male ( ): DSM-IV diagnosis

CONCLUSION

Fitness training as psychomotor therapy is implemented in the treatment plan of hospitalised depressive patients as an effective, low-cost and health-related treatment form. Primary focus was on the improvement of cardiorespiratory fitness as an explanation for the enhancement of psychological well-being. In statistical analysis using single-subject methodology, however, a cluster 'improved mood - improved perception of physical well-being' can also be distinguished. If this can be confirmed in further research, the hypothesis that regular participation of depressive patients in a fitness program leads to an improvement of physical self-worth, and eventually produces improvements in self-esteem can be forwarded as an explanatory mechanism.

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SOPHROLOGY EFFICACY IN FEMININE VOLLEY-BALL PLAYERS

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A) KEY WORDS

Sophrology, volley-ball, coping, anxiety

B) INTRODUCTION

The purpose of this study is to analyse the effects of Caycedo sophrology sessions on the volley-ball players behaviour and more particularly on state and trait anxiety and coping.

C) METHOD AND PROCEDURE

16 feminine volley-ball players from 4 clubs of national first division participated at 6 group sophrology sessions during 6 weeks (S group).

12 feminine volley-ball players from the same clubs constituted the control group (C group).

All the athletes are 19 to 25 years old.

They answered 2 tests (coping test, Vitaliano, 1985) and Spielberger anxiety test before and after the first and last session (without sophrology for C group).

Martens state anxiety test (1990) was presented two times before a competition at the beginning and at the end of the experimentation.

D) RESULTS ANALYSIS

Variance analysis and Student t tests were applied to the results.

D1. Spielberger anxiety test

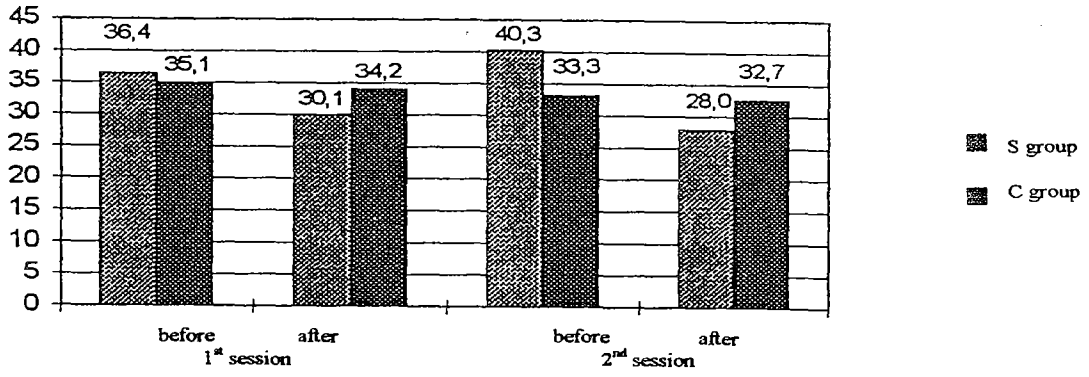

Fig. 1. Means of Spielberger Test in Standard Scores. S and C Groups.

We didn't record differences between both groups before and after the first session like after the last session. Group S means only decrease after the last session (paired t = 5.21 P<.01).

D2. Coping test

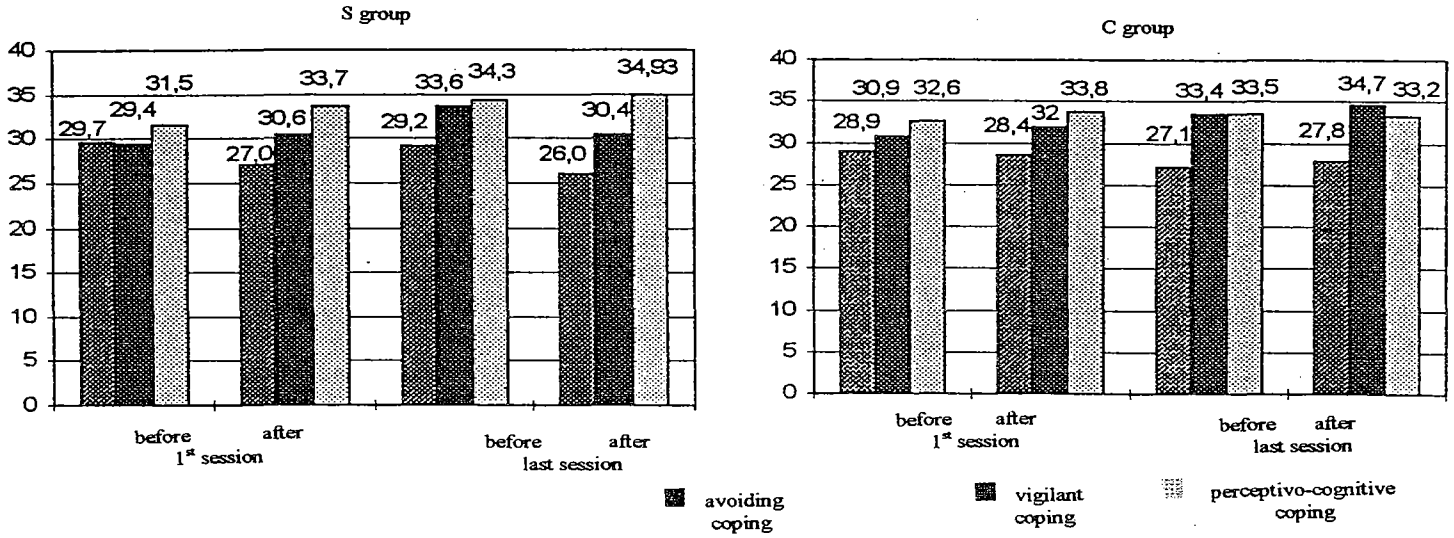

Fig. 2. Means of Coping Tests in Standard Scores.

We didn't note any differences between both group at the first session. At the last session we only noted a decrease of avoiding coping in S group in comparison with C group (P<.05) as well as in paired t (t = 5.36 P<.01).

D3. Martens state anxiety test

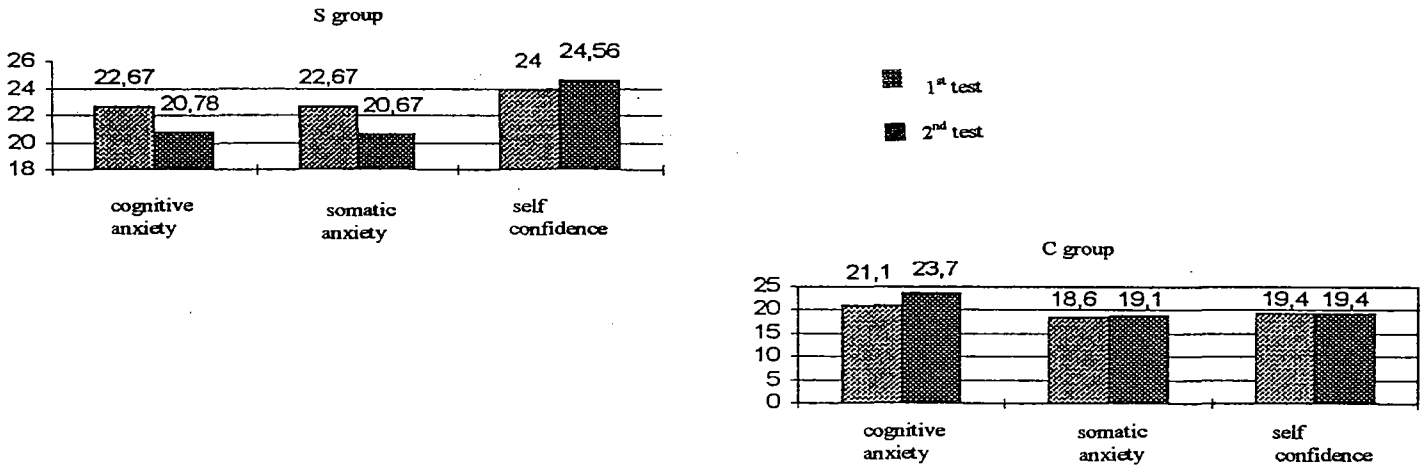

Fig. 3. Means of State Anxiety Test.

We didn't note any differences in both groups in cognitive anxiety before first and last competition like in their evolution. We noted a decrease of somatic anxiety in S group from 1st

to 2nd test (P<.01) and in comparison with the C group evolution (P<.05). We also recorded a difference between both group : self confidence is higher in S group at both tests.

E) DISCUSSION AND CONCLUSIONS

We think that the S group has learned to manage their anxiety in comparison with the control group. In literature the positive sophrology effect on anxiety is often reported (Caycedo, 1995, 1996, 1997).

In competitive situation active coping is more efficient (Lazarus, 1984). It is thus interesting to note a decrease of avoiding coping in S group after the last session.
A reverse correlation between anxiety and vigilant coping confirm this fact (r = .71 P<.05).

The correlation between somatic anxiety and avoiding coping reinforce this interpretation (r = .74 P<.02).

The somatic anxiety decrease is explained by the session contents (centered on body control).

It is interesting to point out the anxiety decrease in sport situation. Those facts lead us to follow this kind of experience. Moreover the players express their satisfaction to manage their stress in competitive situation and they wish to go on in this way.

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THE EFFECT OF MENTAL IMAGERY ON FLEXIBILITY TRAINING.

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Key Words
Mental Imagery; Stretching; Physiological Imagery.

INTRODUCTION

Mental imagery has been studied extensively, both outside and inside the sports domain. A considerable number of studies have shown that mental imagery can produce a wide range of physiological responses (Qualls, 1982-83; Sheikh, Kunzendorf, & Sheikh, 1989). The most well-known physiological response to imagery within the sport setting is the EMG-activity produced in muscles as a result of imagining movement (Bakker, Boschker, & Chung, 1996; Harris & Robinson, 1986).

While in movement imagery, the physiological response (EMG activity) is generally an unintentional and implicit by-product resulting from the content of the image, there are other forms of imagery where the physiological response is the intended end-product of the imagery. Within the psychoneuromuscular literature in particular, a type of imagery has emerged which emphasizes the explicit imaging of specific changes in physiological processes (often at cellular level), with the aim of actually bringing about those particular changes (Rider & Achterberg, 1989; Rider et al., 1990). In the sports setting, some correlational evidence exists that this type of imagery applied to the healing process of a sports injury may be associated with a faster recovery (Ievleva & Orlick, 1991).

In this study we compared both types of imagery in relation to the physiological process of flexibility. Athletes often mentally imagine their skills while they are stretching. Considering the potential for contracting effects on the muscles, the question arises whether this type of imagery during stretching may be counter-productive to the intended lengthening of the muscle. On the other hand, could physiological imagery of the stretching process augment the intended lengthening of the muscle?

Purpose

The purpose of this study was to explore the effect of using different forms of mental imagery during stretching on subsequent increases in flexibility. Specific questions involved: (1) Does movement imagery during stretching interfere with the intended effect of the stretching? It was hypothesized that stretching accompanied by movement imagery would lead to smaller increases in flexibility than stretching without imagery. (2) Does stretching imagery (i.e. mentally imaging the muscles and tendons becoming longer) during stretching augment the effect of the stretching? It was hypothesized that stretching accompanied by stretching imagery would lead to greater increases in flexibility than stretching without imagery. (3) Does imagery ability influence the effect of the image content on the stretching? It was hypothesized that vivid imagers would show greater effects, i.e., a stronger increase in flexibility for the stretching imagery group and the smallest increase in flexibility in the movement imagery group.

METHOD AND PROCEDURES

Thirty volunteer subjects (18 males, 12 females) completed a five-week training programme in which they participated in a total of 11 half-hour stretching sessions. The subjects were all university employees and ranged in age from 21 to 55 years. The average age was 40.8 years. The subjects were matched for age and gender, and were randomly assigned to one of three conditions: (A) movement imagery; this group imagined that they were moving the leg they were stretching (i.e. repeatedly bringing the foot towards the buttocks), (B) stretching imagery; this group imagined the muscles becoming longer, first at cellular level (i.e. imagining the sliding movements of actin and myosin filaments to create a lengthening of the muscle), then for the muscle as a whole; and (C) control; this group did not engage in imagery.

Flexibility measures (range of motion around the hip joint) were taken at baseline and at the end of the training programme. Measures were taken uni-laterally, using an inclinometer (Maud & Foster, 1995). All measures, pre- and post, were taken by the same research assistant, who was trained in taking flexibility measures and was blind to the experimental condition of the subjects. Both active and passive flexibility were recorded.

Imagery ability was assessed by means of the Vividness of Visual Imagery Questionnaire (VVIQ, Marks, 1973) at the time if the pre-test.

The three groups met separately, three times per week for a total of eleven training sessions. Each session consisted of a 5-7 minute warm-up, followed by a series of 5 different stretching exercises. Each stretch was repeated 3 times and was held for 20-30 seconds, with 20 seconds rest in between the stretches. The two imagery groups were instructed to start their imagery at the same time as they started the stretch, and to maintain the imagery throughout the stretch.

RESULTS

Statistical analyses (ANCOVA and paired-sample t-tests) showed that all three groups increased in flexibility (significant at $p < 0.001$), but that there was no significant difference between the groups in flexibility gain. Specifically, these findings suggest that the movement imagery did not have a significant adverse effect on flexibility, and that the stretching imagery did not significantly augment the effect on flexibility. There was no significant correlation between imagery ability and flexibility gain for any of the groups.

DISCUSSION AND CONCLUSION

The results of this study suggest that the effect size of the mental imagery intervention during stretching was not large enough to have a significant impact on the physical process of flexibility, neither in a positive nor in a negative direction.

While there are indications that movement imagery can have an effect that is strong enough to improve muscle strength (Smith et al., 1998), in this study, the effect of the movement imagery was not of the magnitude to have a detrimental effect on flexibility gain. The mechanical act of stretching appeared to be sufficiently strong to counteract any possible contractile activity in the muscle as a consequence of the movement imagery. Similar to what has been found with respect to the performance-enhancing qualities of the EMG activity generated in the muscle during movement imagery (Smith et al., 1998), these findings suggest that the local physiological results of movement imagery are not highly influential.

Although the stretching imagery was a different type of imagery than the movement imagery - in that the physiological effects were intended outcomes rather than implicit by-products of the image content -, the stretching imagery in this study was also not very influential. It was evident that the stretching imagery did not augment flexibility gain. These findings do not corroborate results of earlier studies which showed that mental imagery of particular physiological processes can produce significant changes in those processes (Rider & Achterberg, 1989; Rider et al., 1990). There may be a variety of reasons for this. These may lie in the physiological process itself that the imagery was intended to affect (i.e. a change in muscle properties versus a change in immune cell behavior), or in the nature of the imagery task. As the subjects were combining two different tasks, it is possible that the subjects may have needed more practice to effectively execute the imagery and the stretching simultaneously. It is also possible, because the subjects were asked to imagine a process that they were unfamiliar with, that the imagery instructions were insufficient to create clear and vivid images.

Whereas imagery ability, as measured by the VVIQ, has been found to be related to the effectiveness of physiologically oriented imagery (Sheikh et al., 1989), this relationship could not be reproduced in this study. This is another indication that the imagery interventions in this study had little effect on the intended physiological changes.

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MOTIVATION AND PHYSICAL ACTIVITY ACROSS THE LIFESPAN: THEORY, RESEARCH, AND PRACTICE

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Introduction

Regular physical activity during childhood, adolescence, and young, middle, and older adulthood affords participants a variety of physical and psychosocial health outcomes (Bouchard et al., 1996). Yet statistics on individuals at all these life stages indicate that: (a) few are physically active at levels to accrue these health benefits; (b) physical activity tends to decline with age; (c) most individuals who initiate physical activity programs discontinue within the first 6 months of involvement; and, (d) females, minorities, and individuals of lower socioeconomic status are particularly at-risk for lower physical activity levels (Pate et al., 1994; U.S. Dept. of Health and Human Services, 1996). Thus, keeping children, adolescents, and adults physically active is an important goal of exercise scientists and practitioners. The key question is, "How can we help initiate, sustain, and enhance physical activity levels in individuals across the life span?"

A motivational approach to understanding physical activity focuses upon the social environmental and individual difference factors that determine motivated behavior which, in turn, translates to frequency and intensity of physical activity. What ingredients are crucial to motivating children, adolescents, and adults to maintain and improve their physical activity levels? Several motivation theories have been used to design and conduct empirical research studies to answer this question. Although each theory has its own unique features for predicting motivated behavior, there are three common elements to all theories: self-perceptions (e.g., self-schema, self-efficacy, perceived competence), affective responses (e.g., enjoyment, anxiety, satisfaction), and social influences (e.g., social norms, significant others, motivational climate).

This symposium will explore determinants of physical activity behavior in individuals across the life span from a motivational perspective. We will address key issues during childhood, adolescence, young adulthood, and middle and older adulthood, respectively. Each presenter will discuss theory and research about motivation and physical activity at a particular developmental period, and offer practical strategies based on key findings. Following the presentations (15 min. each), we will form breakout groups and facilitate discussion of issues that are unique to each life stage (30 min.). Each presenter will summarize the issues identified by her or his group (5 min.) followed by discussion. The following sections summarize the salient motivational issues to each developmental group as we examine how to maintain and enhance physical activity behavior.

Children and Adolescents

Regular physical activity during childhood and adolescence offer participants several psychological and physiological health benefits. Estimates of 20-30 million youth in agency-sponsored sports and 10 million adolescents in school sports portray an image that today's youth is involved extensively in physical activity. However, recent reports provide compelling evidence that a sharp decline in physical activity involvement occurs in early adolescence (about 11-12 years) and continues to drop across the adolescent years (Pate et al., 1994; U.S. Dept. of Health and Human Services, 1996). This cessation of adequate physical activity happens during a prime developmental period where weight-bearing and aerobic physical activity provide the necessary physical and psychological benefits that young people need to maintain a healthy lifestyle.

Researchers in pediatric exercise science have urged the adoption of physical activity guidelines for children and adolescents so that optimum health benefits can be attained (e.g., Sallis & Patrick, 1994). These recommendations suggest that children and adolescents should be physically active daily or nearly every day in activities that last 20 minutes or more and that require

moderate to vigorous levels of exertion. To make informed decisions about what strategies will help youth adopt these guidelines, we address two main issues: (a) what are the major determinants of physical activity behavior in children and adolescents? and (b) what do we know about the effect of physical activity interventions on physical and psychosocial outcomes in youth?

Three major determinants of motivated or physical activity behavior are: (a) self-perceptions (especially perceived competence and goal orientations); (b) positive affective experiences (especially enjoyment); and, (c) social support from peers, parents, and coaches. A considerable amount of research has shown that perceived competence (Weiss & Chaumeton, 1992), a task-involved goal perspective (Duda, 1996), enjoyment (Scanlan & Simons, 1992), and positive behaviors expressed by significant adults and peers (Brustad, 1996) are crucial to youths' motivation to initiate, continue, and sustain physical activity. Thus, efforts to enhance perceived competence, task-involved goals, enjoyment, and social support translate to enhanced motivation and physical activity levels. We (Weiss and Ferrer Caja) will focus on the theory, research, and practical strategies pertaining to these predictors of motivation in children and adolescents, respectively, including a summary of several intervention studies that were designed to effect changes in self-perceptions, enjoyment, and motivated behavior (e.g., Theeboom et al., 1995).

Young Adults

Despite the well-known physical and psychological benefits of leading an active lifestyle, few adults consistently engage in vigorous physical activity. In the United States, about 15 percent of adults engage in a minimum of 20 minutes of vigorous exercise three or more times per week. More telling is that one quarter of U.S. adults are not physically active in their leisure time and that an additional one-third of the adult population does not engage in physical activity necessary to accrue health benefits (U.S. Dept. of Health and Human Services, 1996). Combined with evidence for a progressive decline in activity involvement as adults age, these are powerful statistics that point to the need to better understand adult physical activity motivation and behavior.

Numerous correlates of physical activity, exercise behavior in particular, have been identified. Among these correlates are demographic, environmental, cognitive, social, and behavioral variables. Considerable research has been conducted to assess which of these correlates are determinants of physical activity behavior and to test interventions designed to increase physical activity (Dishman, 1994). Current theoretical models allow for the examination of these variables with regard to activity adoption and maintenance. Furthermore, several of these models may be deemed "practical" (Brawley, 1993) in that they provide sound templates for interventions designed to promote active living. I (Smith) will review the theory and research conducted with young adults (20's and 30's), summarize the robust findings with regard to determinants of physical activity, and forward practical recommendations for encouraging and enhancing physical activity levels in this age group.

Middle and Older Adults

We have limited research on developmental changes in the role of physical activity after the college years. But, life and life changes do not stop in the 20's or even the 30's. Most people who have reached the first 20-year milestone will reach at least 2 more 20-mile markers. Most will remain active and physical activity will play a role in the life of the 40-, 60-, and 80-year old, but that role will change. Generally, the motives of fun, skill development, and competitive achievement that dominate in the early years become less prominent (with the likely exception of fun), and middle and older adults engage in physical activity more for physical and psychological health as well as maintaining social contacts and independent living. I (Gill) will draw upon several studies that I have done with colleagues to explore the motives and perceptions of physical activity among middle to older age adults. The insights of the participants inspired me to move away from restrictive achievement and competitive models to consider a richer approach to the role of physical activity in the older adults' lives.

I have explored competitive orientations and motives among participants in running clubs, exercise classes, cardiac rehabilitation programs, and senior games. All these active groups were much less competitive than college athletes, and similar to college non-athletes. Moreover, they expressed multiple, diverse motives and emphasized fitness, affiliation, and health as well as mastery and competition. In an investigation of motivational orientations of adult women tennis league players (age 23-62), we found these women were less competitive and much less win-oriented than college athletes. They were competitive, but high task orientation and intrinsic motivation were their key motivational characteristics. My recent research involves older adults (over age 65) and those participants provide strong personal testaments to the multiple roles of physical activity. In all our studies, older adults consistently affirm the role of physical activity in maintaining health and quality of life, and they typically emphasize emotional and social well-being as well as the ability to continue to carry out daily life tasks. Within the limits of the research, physical activity clearly plays a key role over the adult lifespan. That role is multifaceted, and one developmental pattern does not fit all. Some older adults retain competitive motives and pursuits, some seek social contacts, and most emphasize health and well-being. Most important, aging adults recognize the key roles of physical activity and seek activities to meet their needs.

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The Relationship between Sense of Self and Physical Activity Level at School Level

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KEY WORDS: personal investment, sense of self, social identity, sense of competence, goal-directedness, sense of reliance, sense of acceptance, sense of support

INTRODUCTION

Personal Investment Theory was proposed by Maehr & Braskamp (1986) as a comprehensive motivational framework to explain behaviour. The framework contains a number of dimensions, sense of self perceptions, personal incentives, perceived barriers and options and situational climate. The meaning of the situation is the key determinant of individual personal investment and resources into behaviours. Researchers have applied this theory to investigate individuals' motivation in an exercise related domain (Gray-Lee & Granzin, 1997; Tappe et al., 1990) or leisure and health behaviour (Raedeke & Burton, 1997; Spruijt-Metz, 1995). Previous research has been more concerned with personal incentives and options than with the sense of self, and with adults rather than children and adolescents. Therefore, the purpose of this study is to examine the relationship between sense of self and activity levels in children and adolescents.

METHOD

Subjects

A group of 551 volunteer subjects (average age = 14.17 years) completed a questionnaire in the pilot study. In the main study, 1234 subjects from 14 different schools ranging in age from 9 to 19 (M=14.04, SD=2.42) completed the self-report questionnaire in Taiwan.

Measures

The self-report questionnaire. The questionnaire consists of three parts in the order of subjects' demography (e.g., age, sex, school, year of school), the Sense of Self Inventory (SSI) and the level of subjects' physical activity. In the pilot study, the SSI with 4-point scale (4=strongly disagree, 1=strongly agree) was developed to measure subjects' sense of self (including four components named sense of competence, goal-directedness, sense of reliance and social identity) within an exercise domain. A series of factor analyses were conducted on each component of the SSI separately. This version of SSI with 25 items was used in the main study. A series of factor analyses were employed separately in the main study to confirm the factor structure of the four components of sense of self. The first three components are SC factor extracted from a 6-item sense of competence, GD factor extracted from a 6-item goal-directedness and SR factor extracted from 5-item sense of reliance with the reliability coefficient Cronbach's Alpha 0.82, 0.77, 0.75, respectively. The fourth component consists of two factors (4-item sense of acceptance factor, SA, and 4-item sense of affiliation factor, SAF) extracted from an 8-item social identity component with α=0.74, 0.67, respectively. With reference to level of physical activity, subjects were asked to indicate their

regular weekly physical activity level outside school. According to Sallis & Patrick (1994) subjects who take part in physical activities outside school at least three times per week and more than 20 minutes each time are reaching levels recommended for health improvement and are named the 'high active' group. Subjects labelled 'inactive' group are those who engage in physical activities less than once per week or do not engage in physical activities at all. The other subjects are classified into 'moderate' active group. The questionnaire was administrated by the first author, class by class, both in the pilot study and in the main study after getting the permission from related authorities and students.

RESULTS

A Chi-square analysis was significant, [χ^2 (2, 1226)=63.72, p< .000] for an association between three levels of physical activity in the distribution of males and females. The results in Table 1 indicated that the cells of females and males in the group of inactive and high active make a major contribution to the significant Chi-square test (|R|>2.0). This means that more boys are in the high active group and less boys are in the inactive group than expected, and more girls are in the inactive group and less girls are in the active group than expected. Descriptive statistics of five factors in sense of self for level of physical activity and gender are shown in Table 2.

TABLE 1. The Gender of Subjects and the Level of Physical Activity Crosstabulation

			Level of subjects' physical activities			
			1 inactive	2 high active	3 moderate	Total
SEX the gender of subjects	1 male	Count	131	324	259	714
		Expected Count	179.4	265.0	269.6	714.0
		Std. Residual	-3.6	3.6	-.6	
	2 female	Count	177	131	204	512
		Expected Count	128.6	190.0	193.4	512.0
		Std. Residual	4.3	-4.3	.8	
Total		Count	308	455	463	1226
		Expected Count	308.0	455.0	463.0	1226.0
		Std. Residual				

TABLE 2. Descriptive Statistics of Sense of Self for Level of Physical Activity and Gender

	Male					
	High active		Moderate		Inactive	
	Mean	(SD)/N	Mean	(SD)/N	Mean	(SD)/N
SC	19.53	(2.69)/298	17.86	(2.54)/250	16.58	(2.91)/128
GD	19.70	(2.64)/298	18.23	(2.62)/250	16.48	(2.71)/128
SR	16.86	(2.17)/298	15.54	(2.10)/250	14.20	(2.46)/128
SA	11.41	(2.38)/298	10.02	(2.04)/250	9.18	(2.02)/128
SAF	13.23	(1.69)/298	12.63	(1.65)/250	11.73	(1.64)/128
	Female					
SC	18.31	(2.84)/125	16.66	(2.59)/193	16.15	(3.20)/167
GD	18.41	(2.81)/125	16.80	(2.40)/193	15.98	(2.71)/167
SR	15.94	(2.33)/125	14.64	(2.21)/193	13.83	(2.63)/167
SA	11.03	(2.42)/125	9.62	(2.05)/193	9.49	(2.32)/167
SAF	12.27	(2.02)/125	11.66	(1.67)/193	11.42	(1.88)/167

The 2 x 3 MANOVA were conducted with the five factors of sense of self as dependent variables. The main effect for gender emerge [F_{SC} (1,1161)=30.958, F_{GD} (1,1161)=43.640, F_{SR} (1,1161)=26.760, F_{SAF} (1,1161)=48.326, p<.000], exclusively sense of acceptance (SA) factor. Males have higher scores in the SC, GD, SR and SAF factors then females. The main effect was also discerned for level of physical activity [F_{SC} (2,1161)=72.407, F_{GD} (2,1161)=93.096, F_{SR} (2,1161)=87.859, F_{SA} (2,1611)=65.850, F_{SAF} (2,1161)=36.410, p < .000]. Univariate F test and post-hoc (Scheffe) indicated

that subjects in the active group had higher scores in the five factors of sense of self than the moderate group and the inactive group. One interactive effect in sense of affiliation (SA) emerged [F_{SA} (2, 1611)=11.147, $p < .05$]. In the high active and moderate groups, males have higher scores in sense of affiliation than females.

DISCUSSION AND CONCLUSIONS

The present study applied the concept of sense of self derived from the personal investment theory (Maehr & Braskamp, 1986) to explore the relationship between boys' and girls' sense of self and physical activity level. For this purpose, the Sense of Self Inventory was developed. The results of this study indicated that females have lower sense of competence which supported the results of other researches (Mullan, et al., 1997) than males. Males have higher goal-directedness, sense of reliance and sense of affiliation than females. There were more females in the inactive group as well as more males in the active group than would be expected by chance supporting previous research (Mason, 1995). The results also revealed that subjects who were classified into the high active group have a higher sense of self than those who were in the moderate active group and the inactive group. Previous research (Gray-Lee & Granzin, 1997) had a similar result in the aspect of sense of reliance. The lower levels of activity by girls especially for health reasons, and the lower scores on sense of self and their unwillingness to invest personal resources into activity contexts are of concern.

In sum, the present study has strengthened and widened the use of personal investment theory and specifically by using the concept of personal perceived sense of self on children's and adolescents' motivation in physical activity and exercise contexts. Further researches are suggested. First, longitudinal researches are needed to investigate how the change of sense of self influences personal motivation in participation in physical activities, especially for females. Secondly, comparative studies are suggested to examine the differences of the definition of sense of self between adults and adolescents as well as between males and females.

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A STUDY OF THE EFFECTS OF ECOLOGICAL-SELF IMAGERY ON SELF-EFFICACY AND PERFORMANCE ON A MOTOR TASK

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KEYWORDS

Mental imagery, Ecological self, Motor skills, Self Efficacy

INTRODUCTION

The aim of this study was to examine the effects of a mental imagery intervention based on ecological self principles on self-efficacy and performance ability. When a person generates an image of the actions that she/he performs relative action in a specific physical context, that image contains certain features of that environment that afford and constrain the performance of their action (Greeno, 1994; Moran, 1996; Neisser, 1992; Vincente & Wang, 1998). This could be the slope of the wall, the surface of a playing field, the resistance of water during a pull in a swimming stroke. Furthermore these attunements to features of the physical environment have become part of an implicit and automatically activated self information system that is embedded in any image of the person engaged in their sporting action. Thus the image is a rich and efficient carrier and organiser of essential information on the person's interaction with salient features of the sports environment (Marks, 1990; Suler, 1996). By highlighting these imagined salient features as well as elaborating and expanding on them it is proposed that motor action or skill is better controlled and therefore enhanced. Furthermore the resultant improvement in the "actor-environment" fit could further impact on self-efficacy, which in itself is an important mediating variable in the imagery-performance relationship.

METHOD AND PROCEDURE

A sample of 27 female volunteers ranging in age from 20 to 45 years (M=30.96, SD=7.77) were secured. Subjects were randomly assigned to one of three conditions with 9 subjects in each group and were matched on most physical components of fitness. Subjects had no previous mastery experiences with the the apparatus used for the experiment viz the Reebok™ Slide board.

Two group interventions were conducted with an additional control group given minimal standard instruction for the particular motor task of sliding. The independent variable, mode of instruction intervention, was manipulated while the dependant variables, slide specific self-efficacy and performance ability, were measured using the following instruments:

1. The Slide Specific Self-Efficacy Measure (SSS-E)
The SSS-E measure is based on an adaption of Bandura's (1986) micro-analytic technique used to assess self-efficacy cognitions (Locke, Frederick, Lee and Bobko,1984).

2. The Slide Ability Check List (SAC)
The SAC list is a measure of motor task performance on the slide board rated in terms of each subject's slide cadence in the prescribed time limit of one minute for the two core moves.

Details of the experimental procedure are reflected in figure 1 below:

FIGURE 1:

<table>
<tr><th colspan="4">EXPERIMENTAL PROCEDURE</th></tr>
<tr><td>PRE-INTERVENTION</td><td colspan="3" rowspan="2">Information questionnaire
Physical self-efficacy scale</td></tr>
<tr><td>ASSESSMENT</td></tr>
<tr><td>ACTIVITIES</td><td colspan="3">Warm-up and initial practice session
Slide specific self-efficacy measure
Execution of core move 1 & 2
Slide ability check-list</td></tr>
<tr><td rowspan="2">INTERVENTION</td><td>Group 1</td><td>Group 2</td><td>Group 3</td></tr>
<tr><td>Imagery</td><td>Experimental imagery</td><td>Control</td></tr>
<tr><td>POST-INTERVENTION</td><td colspan="3" rowspan="2">Slide specific self-efficacy measure
Execution of core move 1 & 2
Slide ability check-list</td></tr>
<tr><td>ACTIVITIES</td></tr>
</table>

RESULTS

One way ANOVA procedures on group mean difference scores for self-efficacy from pre- to post- assessment conditions failed to reach significance across the three groups, $F= 2.598$, $p<0.095$ at the 0.05 level of probability. However, results for performance ability revealed that there was a significant improvement in group mean difference scores from pre- to post-assessment conditions across the three groups, $F= 3.703$, $p<0.397$ at the 0.05 level of probability. Bivariate correlations between post-assessment self-efficacy and performance ability revealed that Group 1 (imagery) overestimated their performance ability by 3.19% ($r=0.92$, $p<0.000$),

Group 2 (experimental-imagery) significantly underestimated their performance ability by 16.78% ($r=0.58$, $p<0.099$) while Group 3 (control) overestimated their performance ability by 7.42% ($r=0.82$, $p<0.007$).

DISCUSSION AND CONCLUSIONS

1. Subjects exposed to an ecological self imagery condition showed improved motor performance over subjects in standard imagery and instruction groups
2. Although it was not possible to explain this advantage precisely, due to the nature of the experimental design, it is possible that ecological self construction contributed to improved performance ability.
3. The finding that self efficacy in the experimental group did not match the performance increment may be interpreted in the light of the implicit and automatic nature of this form of imagery, that would not be reflected in higher cortical level verbal codes necessary for self efficacy judgements.
4. Future research needs to include qualitative methodology to examine the nature of the imagery generated by the subjects. Furthermore, control of the physical skill ability and the age of the subjects will need to be included in the experimental design.

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THE DEVELOPMENT AND VALIDATION OF THE PERCEIVED PURPOSES OF SPORT QUESTIONNAIRE

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KEY WORDS

Achievement orientation, goal perspectives, perceived purposes, task and ego orientation

INTRODUCTION

Certain cultural activities are thought to play highly specific and important roles in how individuals are socialized into society. For example, one function of individuals participating in formalized educational experiences such as attending grade school, is to teach students how to reason, divergently think, and attain skills to become life-long learners (Nicholls, Patashnick, & Nolen, 1985; Thorkildsen, 1988). Similarly, it has been suggested that the major purpose of sport participation is to teach the individual how to acquire healthy life-style behaviors, develop cooperative skills, and enjoy attaining mastery at certain sports and physical activities. However, research findings have illustrated several discrepancies between what activities are supposed to promote and what they may actually encourage (e.g., Chaumeton & Duda, 1988; Duda, 1989; White, 1995, 1998). In addition, several studies (e.g., Carpenter & Yates, 1997; White, 1995, 1998; White, Duda & Keller, in press) have found a lack of consistency between their results due to validity problems with the Perceived Purposes of Sport Questionnaire (PPSQ: Duda, 1989). Consequently, to be able to determine what the function of an activity is for individuals within a culture, a more valid and reliable measure has to be developed. Therefore, the purpose of this study was to adapt and test a second version of the PPSQ that would yield less disparate views about the purposes of sport, and that would be more valid and reliable when used with athletic populations.

Coupled with individual's views about the function of an activity is his or her perception of how competence is derived. In the last decade, a social cognitive model for examining motivational processes in academia and sport has been developed and is known as goal perspective theory (Nicholls, 1984, 1989). This theory assumes two basic tenets. First, the major force driving individuals to engage in an achievement related situation is to demonstrate high competence and avoid illustrating low competence. Second, Nicholls (1989) has suggested that competence or ability is conceived in two distinct ways and is either self-referenced or other-referenced. Moreover, these two conceptions of ability are embedded within two achievement goals namely task and ego orientation. The task-oriented individual uses self-referenced criteria to define success and perceives competence as improvement. The focus of the person is to learn something new, achieve personal progress, or meet the demands of the task. In contrast, the ego-oriented person uses other-referenced criteria to define success, and feels competent when he or she has demonstrated superior ability. The major goal of the ego-oriented person is to outperform others and establish superiority in a normative sense. Consequently, goal orientations have important implications when studying individual differences in sport and especially, when determining what the function of an activity might be for the individual.

METHOD AND PROCEDURES

The sample consisted of 581 female volleyball players involved in a summer camp located in a midwestern city in the United States. The mean age for the participants as a whole was 14.74 (SD = 1.47) years old. The majority of the athletes had been involved in competitive volleyball from three to five years, with a sample average of 4.1 (SD = 1.8) years. A three-section inventory was administered in a group setting. The first section of the questionnaire was demographic information used to describe the characteristics of the sample. The second part was the Task and Ego Orientation in Sport questionnaire (TEOSQ; Duda &

Nicholls, 1992) that has been developed to assess an individual's goal orientation in sport. TEOSQ has 13 items and asks the individual to respond to task oriented (e.g., "I do my very best") and ego oriented (e.g., "I score the most hits") criteria for judging sport success. Responses are recorded on a 5-point Likert-type scale with strongly agree = 5 and strongly disagree = 1. The final section of the inventory was a modified version of the PPSQ. Specifically, the following alterations were made to the original PPSQ and included: the deletion of the subscales enhanced self-esteem, high status career, and good citizenship. A new subscale that captures popularity among peers by playing and being good at sport was added. The mastery and cooperation, and enhanced social status subscales remained the same as the original questionnaire. Lastly, two new items were added to the physically active lifestyle and competitiveness subscales, and these subscales were renamed Fitness, and Deception and Superiority respectively. Consequently, the new version of the PPSQ was renamed PPSQ-2 and had a total of 21 items and 5 subscales.

RESULTS

A Principal Components Factor Analysis (PCFA) with varimax and oblimin rotations was employed to determine the construct validity of the PPSQ-2. A factor weight was set at .40 and above using Pedhazur's (1982) minimum criteria for loading. The PCFA results found both the varimax and oblimin rotations produced similar solutions and the varimax data is reported. Overall the PCFA identified five factors with eigenvalues greater than one and accounted for 60.9% of the total variance. Factor 1 consisted of four items, had an eigenvalue of 4.47, accounted for 21.3% of the variance, and reflected Fitness. Factor 2 contained six items, had an eigenvalue of 3.83, accounted for 18.3% of the variance and indicated Deception and Superiority. Factor 3, 4, and 5 met the minimum eigenvalue criterion, but only accounted for between 6-7% variance each. All three factors were retained because they were interpretable and represented salient views about the perceived purposes of sport. Specifically, Factor 3 had four items, named Popularity with Peers, Factor 4 consisted of three items and called Enhanced Social Status, and Factor 5 contained four items and reflected Mastery and Cooperation.

Internal consistency measures of reliability were analyzed for the PPSQ-2 and TEOSQ subscales by calculating Cronbach's (1951) alpha coefficients. Item-total correlations and item contributions to the subscale alphas were examined to understand each item's contributions to the internal consistency of the subscale. One subscale did not meet .70 criteria for minimum inclusion, namely Mastery and Cooperation (.60) and was deleted from all subsequent analyses. Alphas, means, and standard deviations for the two TEOSQ and four PPSQ-2 subscales were: Task Orientation alpha = .77, mean = 4.56, SD = .43; Ego Orientation alpha = .83, mean = 2.36, SD = .89; Popularity with Peers alpha = .81, mean = 4.33, SD = .72; Enhanced Social Status alpha = .72, mean = 3.23, SD = .98; Fitness alpha = .92, mean = 4.61, SD = .63; and Deception and Superiority alpha = .73, mean = 4.20, SD = .62. In addition, most of the item-total correlations met an acceptable range ($r < .40$) and positively contributed to the alpha total.

DISCUSSION AND CONCLUSIONS

The purpose of the current study was to examine the construct validity and internal consistency of an instrument known as the Perceived Purposes of Sport Questionnaire-2 (PPSQ-2). Overall, the PPSQ-2 demonstrated high levels of construct validity. In particular, all five of the subscales were discerned, no items were deleted due to not meeting the minimum criteria for inclusion, and the questionnaire accounted for more than sixty percent of the total variance. It appears that the second version of the PPSQ-2 may be a valid and useful instrument when examining what the function/purposes of sport are in the lives of certain groups of athletes. However, this investigation was exploratory in nature and employed an intact group sample. These results therefore should be regarded as tentative and awaiting replication with a less homogeneous group of sport participants.

The two TEOSQ subscales demonstrated moderate levels of internal consistency, and four of the five PPSQ-2 subscales were found to be internally reliable. However, the PPSQ-2 subscale Mastery and Cooperation did not reach the minimum level of internal reliability and was excluded from all further analyses in this study. This result was surprising, as the items for the subscale had not been revised from the original version of the questionnaire developed by Duda (1989).

In past studies (e.g., Duda, 1989; White, 1998, 1995), the Mastery and Cooperation subscale has demonstrated acceptable levels of internal consistency; albeit not high levels. In this investigation, an examination of the item-total correlations showed that two of the four Mastery and Cooperation questions had correlations greater than .40. In particular, questions 8(i.e., show me that success means always trying my best) and question11 (i.e., teach me that working hard is more important than winning) exceeded the minimum item-total criteria. Further inspection of these two questions finds the common theme of exerted effort underlying the two items. The fact that items representing high levels of effort were not reliable measures of Mastery and Cooperation is puzzling. To date, much of the achievement motivation literature has identified that the demonstration of effort is a salient aspect of mastery (e.g., Duda, 1992; Nicholls, 1984,1989). Obviously, more attention is needed in future investigations on the development of an internally consistent PPSQ-2 Mastery and Cooperation subscale.

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GENDER DIFFERENCES IN LONGITUDINAL INTERACTIONS BETWEEN ACHIEVEMENT GOALS, PERCEIVED ABILITY, AND INTRINSIC MOTIVATION[1]

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KEYWORDS: Goal orientations, motivational climate, perceived ability, intrinsic motivation

INTRODUCTION

Little is known about longitudinal interactions between achievement goals, perceived ability and intrinsic motivation. This paper extends the exploratory work of Whitehead, Andrée, & Lee (1997) who examined achievement goals and related variables in pairs, using the cross-lag correlation method of Vallerand & Losier (1994), and identified asymmetric influences over time in four pairs of variables. Specifically, in a group of 69 young track and field athletes, it was found that (a) a mastery climate in Year 1 negatively influenced ego orientation in Year 2, but the Year 1 ego orientation did not influence the Year 2 mastery climate; (b) the Year 1 performance climate influenced Year 2 pressure/tension and perceptions of comparative ability but these variables assessed in Year 1 did not influence the Year 2 performance climate; and (c) effort/importance in Year 1 influenced task orientation in Year 2 but Year 1 task orientation did not influence Year 2 effort/importance.

These longitudinal interactions were of interest because they did not show a hitherto widely assumed enhancing effect of similar dispositions and climates upon each other but rather a reducing effect on the contrasting disposition or climate. Moreover it was climate that influenced disposition rather than vice-versa, and only the dominant climate in the sample did this. The goal orientations did not influence other variables but were influenced by them. The purpose of the present study is to extend the exploration by analysing males and females separately to indicate the generality or otherwise of the previous patterns.

METHOD AND PROCEDURE

The participants were a sub-set of 69 young track and field athletes aged 11 to 17 years from two clubs in central England who completed self-report inventories at mid-season training sessions in 1994 and 1995 and had complete data on all variables. Dispositional goals were assessed by the 13-item Task Ego Orientation in Sport Questionnaire (TEOSQ, Duda & Nicholls, 1992), perceptions of the motivational climate were assessed by the 29-item Perceived Motivational Climate in Sport Questionnaire-2 (PMCSQ2, Newton & Duda, 1993), intrinsic motivation was assessed by three scales (enjoyment, effort, and pressure) of the 18-item Intrinsic Motivation Inventory (IMI, McAuley, Duncan & Tammen, 1989), and perceived ability was assessed by the IMI competence scale and two items referring to (a) self-referenced and (b) comparative perceptions of ability. Responses were made on 5-point scales. The stability of the subscales over one year was improved by shortening them to use items with the best retest reliabilities for this period (5 climate items, 4 disposition items, 3 or 4 intrinsic motivation items). Internal reliabilities for the shorter scales were acceptable (Cronbach's alpha ranged from .62 to .78).

[1] Data was gathered by Kirsten Andrée with the assistance of a Sports Council Research Scholarship.

The variables were analysed in pairs using cross-lag correlations and multiple regression to indicate whether or not one of the variables assessed in Year 1 had a relatively greater influence on the other variable assessed in Year 2 . Where such correlations among paired variables were dissimilar and one was significant, stepwise multiple regression analyses were conducted for each Year 2 variable to discover whether or not the Year 2 variable that was significantly correlated with the Year 1 variable was also significantly predicted by it. When this was the case, that Year 1 variable was taken to have a greater longitudinal influence than the other. Data for males and females were analysed separately.

RESULTS

A preliminary comparison of subscale means in Years 1 and 2 showed an increase in task orientation for males from 4.07 to 4.34 ($t(32) = 2.64$, $p < .05$), and for females from 4.13 to 4.38 ($t(36) = 2.08$, $p < .05$). Females also increased in perceived comparative ability from 4.17 to 4.12 ($t(36) = 2.34$, $p < .05$) and in perceived self-referenced ability from 4.67 to 5.25 ($t(36) = 2.66$, $p < .05$). For the correlational analyses, the subscales for the dispositional and situational goals were first paired with each other, then these subscales were paired with perceived ability and IMI subscales, matching self-referenced goals with enjoyment and effort, and comparative goals with pressure. Table 1 shows the cases in which one of the paired correlations was significant and in which multiple regression analyses also showed the Year 2 variable to be significantly predicted by the correlated Year 1 variable. In the case of males, multiple regression (R squared) showed thatYear 1 effort/importance explained 35% of variance in year 2 task orientation and 22% in Year 2 mastery climate, while Year 1 performance climate explained 21% variance in year 2 perceived comparative ability. For females, Year 1 perceived ability (a composite measure) explained 15% of variance in Year 2 performance climate and Year 1 perceived self-referenced ability explained 18% of this.

TABLE 1. Pairs of Correlations Showing Different Longitudinal Influence

Year 1 variable	Year 2 variable	Correlation
Males (N=33)		
Effort/Importance	Task orientation	.59**
Task orientation	Effort/Importance	.07
Effort/Importance	Mastery climate	.47**
Mastery climate	Effort/Importance	.18
Performance climate	Perceived comparative ability	.48**
Perceived comparative ability	Performance climate	-.05
Females (N=36)		
Perceived ability	Performance climate	.39*
Performance climate	Perceived ability	.13
Perceived self-referenced ability	Performance climate	.42*
Performance climate	Perceived self-referenced ability	.01

* $p < .05$ ** $p < .01$

DISCUSSION

These gender-based analyses show both similarities and differences with the findings from the total sample. In males the prediction of Year 2 task orientation by Year 1 effort/importance and of Year 2 perceived comparative ability by Year 1 performance climate are consistent with the finding for the total sample. As this pattern was not present in the female data it seems that the male subjects were largely responsible for the previous results. A new finding in the male data is that Year 1 effort/importance predicted the Year 2 mastery climate as well as task orientation. This implies that future research should consider the role of intrinsic motivation as an independent variable rather than focusing largely on dispositional and situational goals as predictors. The female data present interesting findings in that none of results of the male sample, or indeed the total sample, were replicated. This points up the importance of analysing female data separately because in sport contexts females are often in the minority and an overall sample may be biased by male tendencies. Moreover the female data here show predictions in the reverse direction from those of the male data. For females, perceived ability predicted performance climate rather than vice versa. This may be function of the female increase in percevied self-referenced and comparative ability from Year 1 to Year 2, which was not a feature of the male data. There seems a slight anomaly in that it was self-referenced rather than comparative perceived ability that predicted performance climate, but the composite perceived ability was also a predictor snd the present sample is small, so results are intended to provide guidance for future research rather than be definitive. Neither gender sample showed the finding of the total sample that Year 1 mastery climate reduced Year 2 ego orientation or that Year 1 Year 1 performance climate influenced pressure/tension in Year 2.

In conclusion, these data extend the findings of Whitehead, Andrée, & Lee (1997). They should be interpreted with caution for reasons given in that paper, but they provide preliminary information to underpin longitudinal research from a more theoretical basis. In addition to providing a better understanding of the nature and relationships between these variables over time, such research should also provide a framework for intervention. For example, the present data from both the male sample and the previous overall sample, suggest that if the aim is to increase task orientation it may be better done by encouraging and rewarding effort than by seeking to manipulate mastery or performance climate or ego orientation.

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FIRST STUDIES FOR THE PORTUGUESE VERSION OF THE "TASK AND EGO ORIENTATION IN SPORT QUESTIONAIRE" IN BRAZIL.

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INTRODUCTION

Using typology to classify traits has been a great support to psychology, which is the Science that studies behavior and the mental process (Davidoff,1976). According to Ryckman (1988) there is a great importance in classifying because it is easier to identify and to describe phenomenon with more details and also to organize events in an accessible way for those who will study them. In Sport psychology should not be different, specially because it is still a new part of psychology in many countries, including Brazil.

The idea of translating an instrument which may be use not only for the study of motivation, but specially for the study of motivation in sport, was to help the confirmation of theories and provide help to those people who still don't have the theoretical support to define goals of athletes (professional or amateur). Goals perspective theories of achievement motivation say that there are two predominant goal of subjective success in sport situation, namely task and ego involvement (Nicholls, 1989) .According to Duda (1990) these two goal perspectives relate to the ways in which individuals judge their level of competence, and perceptions of competence are held to the primary focus and determinant of achievement strivings.

For someone who is ego- involved, emphasis is placed on demonstrating superior competence, perceived ability is normatively referenced and the ultimate source of subjective success would be beating others with less effort in a competitive encounter. Skill improvement , task mastery, working hard, and achievement engagement for the activity itself are fundamental when one is task-involved.

Recent efforts in sport psychology research have been toward the assessment of individuals differences in orientations to sport achievement, and until this time, one instrument has been developed to reach dispositions proneness for task and ego involvement in sport setting (Duda & Nicholls 1991).

This instrument is called Task and Ego Orientation in Sport Questionnaire or TEOSQ (Duda & Nicholls), which assess individuals differences on task and ego involved goal perspectives in sport. There's a moderately correlation between these two goal perspective. In this work, we use this instrument, hoping to have a better view of this two kinds of goal perspective in sport also in Brazil, and that sports psychologist can improve their work, and the athletes performance even in our different reality.

METHOD & PROCEDURE

This work is dived in two parts, the first one is directed to the translation and back translation of the instruments to the Portuguese language, so that we can use them in Brazil. The second part consist in collect answers of athletes, using the TEOSQ, an instrument with 13 affirmatives and 5 degrees of agreement or disagreement, and the athletes have to choose one alternative . These athletes are in competitive sport, and are between 12 and 19 years old, and there were 68 people participating in this work. There will be a factor analysis with Varimax Rotation study.

RESULT & DISCUSSION

TABLE I

	Factor 1	Factor 2
V1 E	-.0872	**.4514**
V2 T	**.3658**	-.4002
V3 E	.0218	**.6617**
V4 E	.1103	**.7050**
V5 T	**.3267**	-.3836
V6 E	.0121	**.5167**
V7 T	**.5730**	-.1588
V8 T	**.7838**	.1925
V9 E	.1358	**.5824**
V10 T	**.7394**	-.1551
V11 E	-.0284	**.5946**
V12 T	**.6671**	.1060
V13 T	**.6663**	.1406

	Factor 1	Factor 2	Factor 3	Factor 4
V 1	-.2844	.2724	**.6621**	.2254
V 2	-.0258	**.8428**	-.1221	.0089
V 3	-.0997	.1300	**.5699**	.5490
V 4	.1369	-.1063	**.7748**	.1857
V 5	-.0269	**.7680**	.0052	-.1557
V 6	.0760	-.1663	**.7621**	-.1355
V 7	**.4423**	.4082	.1242	-.2490
V 8	**.8853**	-.0087	-.0511	.1739
V 9	.1288	-.0479	.0372	**.8645**
V 10	.4948	**.6480**	.0631	-.0351
V 11	.1054	-.3349	.1518	**.5790**
V 12	**.7989**	-.0815	-.1528	.1205
V 13	**.6897**	.1131	.1370	-.0072

Table I: the values of the factor analysis first with two factors and then with no pre-determined numbers of factors.

E= Ego
T= Task

The values described above were reached with a factor analysis with varimax rotation based on the answer of 68 athletes, do confirm the results proposed on the original instrument (Duda, 1991). These results show the consistence of this instrument and the possibility of continuing studies in Brazil using the TEOSQ.

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DETERMINANTS OF CAREER DROPOUT IN YOUTH SPORT

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KEY WORDS: Career transition, Dropout, Social determinants

When children decide to take part in specific kinds of competitive sport they will have to pass through different phases of sports career on their way to the top. SALMELA (1994) describes three important phases of young athletes' career.
During the phase of initiation children get in contact with the sport. Doing sports is perceived as joyful and „special". During the developmental phase children show a special commitment to the kind of sport they are doing. They start to take part at competition and try to improve their technical and tactical skills. At this phase the influence of the coaches is getting more and more important. When young athletes reach the phase of mastery doing sports is the most important thing in their life. They take part at high level competitions, e.g. national or international championships and show a very high standard of performance. It is assumed that the influence of coaches is increasing and that the influence of parents is decreasing during the career.

Career termination - Determinants of dropout

During their sports career athletes always have to face the possibility of career termination for different reasons. Not all athletes reach the top level, and the attrition rate on the way to the top is known to be quite high. This means that premature career termination, dropout, of young athletes is a frequent phenomenon. Studies done so far show that career termination is the result of a multitude of determinants, most often being a combination of individual factors of the athlete and of social influences. Thus in a study with track and field athletes BUSSMANN and ALFERMANN (1994) could show that dropouts identified less with their athletic role, showed less persistence in the face of failure, and complained more often about a lack of social support than non-dropouts.
In the study presented here, we want to look in more detail into the personal and social factors that contribute to career dropout. Parents and coaches are assumed to influence the process of decision making as well as th athlete her-/himself. If parents, for example, give social and/or financial support to their children and encourage them in a positive way, athletes should be more likely to continue doing sports. On the other hand children who do not get the parental support are running a higher risk of dropping out.
Coaches can play an even more important role in young athletes' careers than parents. It is a well-known fact that young athletes who drop out of sports often blame their coaches for not giving enough support and encouragement. Coaches who are „good leaders„ (i.e. competent, friendly, social supporting, but also demanding) and who are inducing a motivational climate that is determined by warmth, team cohesion and mastery orientation seem to have a positive influence on athletes' career decision (i.e. athletes are more likely to continue). Coaches who overemphasize competitive performance - being better than others and doing out one's teammates is the most important thing - and take less care of a positive social climate like team cohesion or fairness are more likely to provoke young athletes' withdrawal from sport.
Anyway, athletes have to deal with many factors and circumstances when they have to decide whether they want to continue their career or not. There are individual factors as well as social influences (represented by parents and coaches). We assume that these factors are taken into consideration and are leading to a cost-benefit analysis done by the athlete which again is leading to a final career decision.

Taking a complex athlete-parents-coach-interaction as the theoretical background of career decision the main research questions are: Do athletes make cost-benefit analyses in order to come to a decision? How does parents' behaviour, especially social support and pressure, influence the decision at various career phases? What about the influence of coaches (i.e. leader behaviour and motivational style) on athletes' decision?

Methods and procedures

To investigate these research questions we developed questionnaires to assess the crucial variables concerning athletes', parents' and coaches' point of view[1]. Therefore specific questionnaires were given to young athletes, their parents and their coaches. To get information about processes within the career development and the phenomenon of dropout we conducted a follow-up study with young athletes.

The main instruments used in this study are as follows:

- The TEOSQ (following DUDA, 1992) assessing the indidual goalorientation of athletes
- The LSS (following LEE, WILLIAMS, COX & TERRY, 1993) assessing the leadership behaviour (as perceived by athletes, parents and coaches)
- The PMCSQ (following BOYD, YIN, ELLIS & FRENCH, 1996) assessing the motivational climate (as perceived by athletes, parents and coaches)
- The PISQ (following LEE & McLEAN, 1997) assessing the parental involvement (as perceived by athletes and parents)
- a scale to assess the perceived costs and benefits as perceived by athletes (ALFERMANN, SABOROWSKI & WÜRTH, 1997)

All scales (except the costs-benefits-scale) were translated into German and modified where necessary. Reliability and factor structure of the scales were tested in preliminary studies at different samples. All scales had demonstrated acceptable internal consistency (Cronbach's α ranging from .46 to .93) and stable factor structures (see ALFERMANN, SABOROWSKI & WÜRTH, 1997)
The initial data collection of our three year longitudinal study took place in the region of Leipzig, Germany (former GDR) from September 1997 to April 1998.
The second data collection (follow up) is done from September 1998 to December 1998.
Furthermore we tried to collect data from athletes who definitely brought their sports career to an end. Therefore a specific questionnaire was developed for dropouts which will be given to the former athletes.

This study was extended to a sample of German athletes of various kinds of sport (track and fields, swimming, tennis, handball/basketball and hockey) at various career phases (initiation, developmental and mastery), their parents and their coaches. 206 female and 141 male athletes aged 8 - 21 and living in the region of Leipzig, Germany, were asked to indicate on the same scales the degree of perceived own goalorientation, leadership behaviour of their coaches, motivational climate and parental behaviors. In addition they were asked to estimate the perceived benefits and costs of their athletic involvement. 262 mothers and 215 fathers of the aforementioned athletes completed a questionnaire consist in the scales assessing coach's leader behaviour, motivational climate and own behaviour from the parental point of view.
Finally 42 coaches (24 female, 18 male) were asked to give information about their own leader behaviour and the perceived motivational climate.

[1] The research presented here was supported by grants from the Deutsche Forschungsgemeinschaft

Results

First cross-sectional data analysis shows that athletes in general perceive themselves as high task oriented, the motivational climate as warm and mastery oriented (less competitive oriented), the leader behaviour as positive and their parents as supporting and putting low pressure on them. They report more benefits than costs within all career phases and all kinds of sport. Corresponding parents have a similar view of themselves, the motivational climate in their child's training group and the coach as well. Additionally coaches seem to induce a high mastery oriented climate and perceive themselves as rewarding, social supporting and competent.
It is expected that athletes who have withdrawn from sports are those who had already one year ago (at the time of our initial data collection) a less positve perception of themselves, their parents and coaches. It is assumed that athletes who showed relatively low task orientation and high ego orientation at the TEOSQ, who perceived their parents as putting high pressure on them and giving less support and who estimated the coach as too demanding and the motivational climate as highly competitive are be the ones who perceive high costs and low benefits and therefore brought their sport career to an end. Another conclusion could be that data of athletes who withdraw from sports show high discrepancy betweeen athlete's, coach's and parents' point of view (e.g. parents perceive themselves much more supporting than their child does).

Conclusion

First results reveal that athletes who are active in sports and going for a higher performance level need parents who are social supportive and show a positive view on the sport activites of their children in general. Furthermore a socially competent coach is a condition that children and adolescents continue doing sports and run a lower risk of premature dropout.
Data are discussed with regard to career counseling and career education.

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Career Transitions in Sport: Research and Interventions (Symposium)

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INTRODUCTION

During the past decade the theme of career transitions has become an important topic among sports psychologists. A literature review (Lavallee, Wylleman, & Sinclair, 1997) revealed 193 references on the topic of career transitions with more than half being published since 1990. This growing awareness has clearly followed those lines of interests in the fields of developmental, school, vocational, and occupational psychology. One factor contributing to this surge in interest can be attributed to the Special Interest Group on Career Transitions (SIG-CT) (Wylleman, Lavallee, & Alfermann, 1999a). Initiated in 1993 during the 8th ISSP World Sports Psychology Congress in Lisbon (Portugal), its aim is to bring together sports psychologists involved and interested in the study of career issues in the field of (competitive) sports. This cooperation has been translated into different transition-related symposia at international congress, such as, the 9th FEPSAC Congress in Brussels (Wylleman, 1995), the 9th ISSP Congress in Netanya (Wylleman & Alfermann, 1997; Wylleman & Schilling, 1997), the 2nd Conference of the European College of Sports Sciences in Copenhagen (Stambulova, 1997), and the 28th IAAP Congress in San Francisco (Alfermann, 1998).

The contribution of this pan-European group of sport psychologists to the topic of career transitions was also ackowledged by the Managing Council of FEPSAC. FEPSAC translated this importance in a position statement "Position Statement Paper #3", the aim of which was to convey to its members, (albeit in an abbreviated form) why it deems important that sports psychologists should focus their attention to the phenomenon of sports career transitions, what its general characteristics are, why athletes may be faced with problems when confronted with transitions, and the way in which sports psychologists may provide assistance to athletes to alleviate the causes and/or effects of these problems. FEPSAC's Managing Council showed also its pro-active involvement in this field, by sponsoring a publication, entitled "FEPSAC Monograph on Career Transitions in Sport" (Wylleman, Lavallee, & Alfermann, 1999b). The aim of this Monograph is to provide sports psychologists, as well as, athletes, coaches, directors of sport federations or national olympic committees, and all those within athletes' close daily environment (e.g., parents, friends, partners) with "rough guide" into (a) the theoretical and conceptual approaches to career transitions for athletes, (b) the relevant research methodologies, (c) the specific transitions for athletes and coaches, and (d) counseling strategies and intervention programs for transitions. The Monograph also covers the Position Statement Paper #3. Taking into account the limited number of pages, the monograph proposes its readers with a "summarized" version, completed with references where more information on career transition issues can be gained. The contributors to this Monograph, members of the SIG-CT, include Dorothee Alfermann (Germany), Nicole Bardaxoglou (Belgium), Prodromos Chamalidis (France), David Lavallee (England), Natalia Stambulova (Russia), Hardy Menkehorst (the Netherlands), Guido Schilling (Switserland), Frank van den Berg (the Netherlands), and Paul Wylleman (Belgium). The Monograph also includes contributions from experts in the field of career transitions from outside Europe, namely, John Salmela (Canada) and Al Petitpas (USA). Finally, FEPSAC's Managing Council is also underlying the need for sport psychologists to focus on the importance of the career transition process to athletes (and coaches), by developing a new Position Statement on the importance of the career termination and post-career termination phases (N. Stambulova, M. Prodromis, & P. Wylleman, personal communication, June 21, 1998).

RESEARCH AND INTERVENTIONS IN CAREER TRANSITIONS IN SPORT

The aim of this symposium is to increase the awareness of all who are closely involved with athletes and coaches, for the specificity of the psychological aspects of career development--an awareness which may lead to the enhancement of athletes and coaches' well-being throughout, as well as, after their involvement in the athletic arena. Four specific topics will be discussed.

As during the past years the need has been underlined to broaden sports psychologists' view on career transitions, attention will be drawn, in first instance, to those non-athletic transitions which may impact, or which themselves be affected by, athletes' athletic careers. These transitions include, among others, those occurring in athletes' psycho-social development and their scholastic/academic career.

Second, research will be presented with specific populations of athletes. The importance of research projects on a cross-cultural (e.g., Chinese vs. German athletes), as well as, on a within-athletic population (e.g., disabled athletes, young athletes) basis, will be highlighted

Third, the focus will be put on new lines of research into the development of methodology specific to career transition issues in sports (e.g., the British Athletes Lifestyle Assessment Needs in Career and Education-BALANCE). This is especially relevant in view of the questions being raised with regard to what research methodology is advocated for future research on career transitions in the athletic setting. Several options have been proposed (Wylleman, Lavallee, & Alfermann, 1999b). First, prospective studies are required. Using a longitudinal design measuring possible determinants and consequences of transition periods at several moments times would allow a process-analysis, that is, enable researchers to find intra- and interindividual differences in transition and their psychological and social determinants over time. Second, an "in vivo" approach should be developed which allows to study the transition at the actual point of transition. Conducted in a longitudinal design, this approach could provide detailled data on the transition process. Third, retrospective studies are still required, especially to collect data from significant others in athletes' psychological and social support networks (e.g., coach, parents, siblings, peers). This would allow researchers to collect different viewpoints over large sample sizes. Finally, multi-method research is needed in order to gain a better understanding of the retirement process, thus providing an empirical basis for the structure of career transition programs. Qualitative methods should be considered in order to delineate, for example, the sources of stress at retirement as well as the coping strategies used by athletes to manage them.

Finally, interventions strategies will be described which may enhance (young) athletes' coping with transitions in their athletic careers. The issue is especially relevant as a variety of perspectives has been offered to assist athletes in transition, varying from "one-on-one" counseling, to individualized career assistance programs for athletes, group career assistance programs, or life skills programs, and individual, group, and lifeskill programs for coaches (Wylleman, Lavallee, & Alfermann, 1999b).