

Views of elite swimmers on achieving swimming excellence in South Africa

J J Nortje (B Sport Science, Hons Sport Science (Biokinetics))

Y Coopoo (DPhil, FACSM)

T Lazarus (PhD, Cert. EEG, MNAN (USA))

Department of Sport Science, University of KwaZulu-Natal, Durban

Abstract

Objective. This study was conceptualised following publication of two editorials by Professor Mike Lambert, in which he proposed a model for achieving sporting excellence in South Africa. A questionnaire based on the assumptions of the model was administered to the first 45 ranked swimmers in South Africa. Their views and opinions were elicited on the various components of the model.

Study design. A questionnaire was designed to elicit information on the administration, sponsorship, coaching skills, talent identification, financial implications and scientific support for swimmers in South Africa. The top 45 swimmers were interviewed at the National Senior Swimming Championships held in Durban in 2003. Amongst the swimmers interviewed were 7 of the 8 current Olympians who participated in Athens in 2004. Due to the nature of the study only descriptive analysis was undertaken.

Results. Swimmers believed that South Africans have the potential, capacity and raw talent to compete at international level. Scientific and medical support, administration of the sport, financial implications for training, and competition were considered critical factors in respondents support systems enabling them to compete effectively.

Conclusions. Swimmers in the study sample reported that the administration of swimming in South Africa should be changed to impact the sport positively. They felt that coaching skills available in South Africa were sufficient to achieve excellence in performance, but that scientific and medical support were not on a par with international standards. Use of drugs in swimming is likely to increase with

increased international exposure. Finally, the swimmers said that they do not have the financial means to achieve success internationally compared with Australian and American swimmers. Swimming South Africa, the National Olympic Committee of South Africa and private sponsors need to play a more central role in sponsorship of swimmers in South Africa. At a conservative estimate, the professional swimmer requires between R5 000 and R8 000 a month to be able to train effectively for international performance. This figure does not include costs for accommodation, subsistence and travel to overseas competitions.

Introduction

Two recent editorials in this *Journal* discussed certain core factors influencing the attainment of sporting excellence in South Africa.^{7,8} In these editorials Professor Mike Lambert suggests several factors that need to be present for sporting excellence to occur.^{7,8} These factors include the presence of an abundance of raw talent, a desire to win at international level, national pride so that sport performers have the nation upholding them, coaching by world-class trainers, a network of highly motivated health and exercise professionals, and an efficient administration system. Lambert notes that a model based on these factors will ensure that South Africa achieves excellent results in sporting competitions.^{7,8}

In response to Lambert's editorials,^{7,8} this study was undertaken to survey the views of prominent South African professional swimmers.

Methods

This study analyses the results of a questionnaire administered to the top 45 swimmers in South Africa during the Senior National Championships held in Durban in April of 2003.

Swimmers were ranked by a panel of experts from the psych sheets (ranking lists) of those championships. A total of 45 elite swimmers, 37 (82%) international and 8 (18%) national respectively, completed the questionnaires. The questionnaire elicited data on demographic background, factors influencing elite performance, training and tertiary education, drugs in sport, coaching, facilities, scientific support

CORRESPONDENCE:

Y Coopoo
Department of Sport Science
University of KwaZulu-Natal
Private Bag X54001
Durban
4000
Tel: 031-260 7394
Fax: 031-260 7903
Email: coopoo@ukzn.ac.za

and finance for swimmers. Descriptive statistics using primarily frequencies and percentages were used to analyse the data.

Results

Table I depicts the demographic details of the swimmers.

TABLE I. Demographic characteristics of swimmers (N = 45)

Question	Choice	Number	Per cent
At what level have you trained or competed	National	8	18
	International	37	82
Are you a full-time swimmer?	Yes	21	47
	No	24	53
Age when you started competitive swimming (years)	5 - 7	16	36
	8 - 10	12	27
	11 - 13	12	27
	14 - 16	4	9
	older than 16	1	2
Number of years on a training programme with a coach	1 - 2	3	7
	3 - 4	5	11
	5 - 6	8	18
	7 - 8	1	2
	>8	28	62
Number of years competing at senior national championships	1 - 3	7	15
	4 - 6	21	47
	7 - 10	8	18
	>10	9	20
Highest level of education	Matric	30	67
	Diploma	3	7
	Certificate	1	2
	Degree	6	13
	Postgraduate study	4	9
	N/A	1	2

TABLE II. Swimmers views on the coaches

Question	Choice	Number	Per cent
Is your coach at every training session?	Yes	40	89
	No	5	11
Are you totally guided by your coach?	Yes	36	80
	No	9	20
Are our coaches of international standard?	Yes	35	78
	No	6	13
	Not sure	4	9
Do we need to recruit good overseas coaches to coach swimming in South Africa?	Yes	15	33
	No	21	47
	Not sure	9	20
Are our coaches well qualified for swim coaching?	Yes	35	78
	No	5	11
	Not sure	5	11

Of the 45 subjects interviewed, 37 were international swimmers, of whom 21 trained full time. Most of these swimmers had been swimming for 12 - 16 years, and all of them received professional coaching. Sixty-seven per cent (N = 30) of the swimmers had matriculated, and 14 of them had completed tertiary education. Eighteen per cent (N = 8) of these swimmers had competed at senior nationals for 7 - 10 years, with most of them (47%) participating for 4 - 6 years.

TABLE III. Swimmers views on scientific support

Question	Choice	Number	Per cent
Do we have the scientific back-up for swimming in South Africa?	Yes	4	9
	No	28	62
	Not sure	13	29
Is South Africa's medical support structure as good as overseas?	Yes	11	24
	No	27	60
	Not sure	7	16
Does the testing programme by SISA serve any purpose?	Yes	15	33
	No	11	25
	Not sure	19	42
Most consulted professionals	Doctor	18	40
	Masseurs	18	40
	Physiotherapist	5	11
	Biokineticist,	4	9
	chiropractitioner,		
	nutritionist		

TABLE IV. Swimmers views on administration, NOCSA and finance in swimming

	Choice	Number	Per cent
Is administration of swimming in South Africa a factor in poor national performance?	Yes	27	60
	No	4	9
	Not sure	14	31
Does NOCSA play a role in improving your performance?	Yes	4	9
	No	41	91
Does Swimming South Africa assist you financially?	Yes	8	18
	No	37	82
Are you sponsored?	Yes	8	18
	No	37	82
Are you a full-time swimmer?	Yes	21	47
	No	24	53

The views of the swimmers on coaching and coaches are given in Table II. Seventy-eight per cent (N = 35) of the swimmers believed that South African swimming coaches are of international standard and that it was not necessary to recruit international coaches. Furthermore, 78% (N = 35) of the swimmers reported that South African swimming coaches were qualified for their job.

Table III reflects the views of swimmers on scientific support systems. Nearly two-thirds (62%) of the swimmers believed that there was no scientific support available for them, whilst 60% of respondents reported that South African medical support systems were not on par with those available in international settings.

One-third of the respondents reported that the Sports Commission High Performance Programme was valuable, whilst nearly one-quarter (24%) noted that it served no purpose. Almost 42% of the swimmers were not sure about the details of the Sports Commission High Performance Testing Programme. Professionals most often consulted by swimmers were medical doctors, masseurs and physiotherapists, to a similar frequency (40%).

Sixty per cent of the respondents reported that the administration of swimming in South Africa was a factor contributing to poor national performance (Table IV). Five respondents indicated that they received some financial

TABLE V. Swimmer's views on the use of drugs in swimming

Question	Choice	Number	Per cent
Have you been tested by the SAIDFS?	Yes	39	87
	No	6	13
Do you take supplements to assist with competition?	Yes	31	69
	No	14	31
Should a swimmer be banned for using a performance-enhancing drug?	Yes	38	84
	No	3	7
	Not sure	4	9
Do you know anyone who takes performance-enhancing drugs	Yes	33	73
	No	9	20
	Not sure	3	7

TABLE VI. South African talent and desire to win

Question	Choice	Number	Per cent
Does South Africa have the raw talent to develop international swimming stars?	Yes	40	89
	No	4	9
	Not sure	1	2
Do swimmers in South Africa have the will to win at international level?	Yes	38	84
	No	2	4
	Not sure	5	11
Do we have the national pride to perform for our country?	Yes	37	82
	No	4	9
	Not sure	4	9

assistance from the National Olympic Committee of South Africa (NOCSA), while an overwhelming proportion (89%) received no financial support. Of the 45 swimmers surveyed, 8 respondents were financially supported by Swimming South Africa, whilst 8 indicated that they were sponsored privately. Twenty-one of the respondents were full-time swimmers.

Table V reflects the views of respondents towards drug use and abuse in swimming. A large proportion (87%) of respondents were tested for illicit substances by the South African Institute for Drug Free Sport (SAIDS), and all these subjects reported that swimmers who were found using performance-enhancing substances should be banned. More than two-thirds of respondents (69%) were taking supplements to enhance performance. Seventy-three per cent of the respondents knew about other swimmers taking illegal performance-enhancing substances.

Table VI reflects responses to general questions concerning availability of raw talent, will to win and national pride among South African swimmers. A large majority of respondents (89%) believed that South Africa had the raw talent for swimming whilst 85% of the respondents believed that South African swimmers have the will to win in international competitions. Eighty-two per cent of the respondents reported that swimmers possess national pride to perform for their country.

Discussion

As indicated earlier, 7 of the respondents were among the 8 Olympic swimmers who participated in the 2004 Athens Games.

Sixty-two of the respondents had been involved in the sport competitively for more than 8 years. Once athletes had decided to specialise in swimming, specific training programmes were designed to condition the body physically and to develop psychological skills to meet the demands of the sport.

Bompa² reported that the age at which specialisation should commence should be 11 - 13 years for girls and 13 - 15 years for boys.² The age range for peak performance has been reported to be 18 - 22 and 20 - 24 years for women and men, respectively. These findings suggest that swimmers need to train for at least 7 - 9 years to reach their peak for high performance, a finding that appears to be consistent with the results of elite South African swimmers. In the cohort interviewed, 80% reported that they were guided in all aspects of their training by their coaches. These findings have financial implications for the swimmers since most of them were below the age of 18 years and therefore full-time scholars. Therefore, financial assistance or sponsorship forms a critical factor to ease the financial burden placed on the parents of these swimmers.

Seventy-eight per cent of the respondents believed that South African swimming coaches were of international standard and were qualified to undertake coaching duties. Only 33% believed that international coaches should be recruited. Since being coached at an acceptable level over many years forms a prerequisite to the training of excellent swimmers, the confidence of South African swimmers in their coaches is thus evident.

Personality and a thorough knowledge of swimming are vital assets for effective coaching, coupled with the ability to inspire confidence, patience, perseverance and a sympathetic understanding of their charges.¹ Understanding of the science underpinning swimming training and the need for scientific support for swimmers, forms a critical knowledge base for effective international coaching. Coaches therefore need to be informed about the latest coaching principles and also need to follow the latest findings reported by the practitioners of sport science and medicine.³

Sixty per cent and 62% of the respondents respectively reported that the medical support systems and scientific backup available in South Africa were not comparable to those available internationally and therefore required improvement. In contrast to these views, Noakes⁵ indicated that the technologies, research and analyses used by top-performing countries are available in South Africa. These anomalous findings point to a lack of exposure of swimmers to the scientific support systems available for sportspersons in the country. This situation may be due to the fact that Swim South Africa is not providing educational support or appropriate exposure for these athletes. Also, it may be that sport scientists are not marketing themselves well enough to these sectors of the population. Only the elite swimmers who participated in the Commonwealth, All Africa and Olympic Games showed awareness of the excellent scientific and medical support available to South African athletes.

In their book Bruckner and Khan³ explain the need for a good relationship between coaches and medical support, which results in a win-win situation. It is essential that swimmers are made aware of the medical and scientific support available in order to maximise performance and health.

The High Performance Programme of the South African Sports Commission produced mixed responses. Forty-two per cent ($N = 19$) of respondents did not know whether the programme served any purpose, whilst 15 respondents believed that it had a positive influence on their swimming. Twenty-five per cent ($N = 11$) of the respondents felt that the fitness testing in the current format was of no value to swimmers. The respondents believed that this programme was not sufficiently advertised to the athletes and that feedback and test selections were both insufficient for swimmers. It was suggested that the High Performance Programme should be restructured to benefit the needs of the swimmers.

The professionals most frequently consulted by swimmers were masseurs and medical doctors (both 40%), physiotherapists (11%), while other practitioners (biokineticists, chiropractors and nutritionists) were consulted by 9% of respondents. These findings again revealed that more education is required so that swimmers may optimally utilise services available for swimming enhancement. The swimmers believed that the sports masseur was the most important person to be included in a travelling support team.

Swimmers spent approximately R352 per month on coaching, R389 on supplements and R450 on medical support (which included consultations with doctors, masseurs and physiotherapists). Further travelling expenses from their home to training venues and to local competition venues were as high as R1 200 per month. Accommodation, subsistence and incidental expenses may conservatively total R3 600 per month if the swimmer lives with his/her family. Hence, a competitive elite swimmer requires appropriately R5 991 per month in order to train effectively for competition, not including costs for overseas travel and accommodation.

Only 8 (18%) of the top 45 swimmers were sponsored to a small extent by either NOCSA, Swimming South Africa or private sponsors. This financial assistance was mainly to cover costs incurred for overseas travel to participate in competitions. These swimmers indicated that they received between R5 000 and R8 500 per month.

A recent article in the *Natal Mercury*⁶ described tensions between the Olympic medal winners and the South African Swimming Federation concerning the limited financial support given to the country's elite.⁶ The article suggested that efforts should be made to plan a way forward with regard to preparing swimmers for the 2008 Olympics in Beijing and other major championships. These results indicate that if the top 50 swimmers in South Africa are sponsored on a performance-related pay-swim basis, a greater proportion of these swimmers will compete internationally. In most developed countries swimmers competing internationally are reported to be professional and therefore full-time athletes. In South Africa, only 21 (less than half) of the swimmers interviewed

were full-time swimmers.

Sixty per cent of respondents believed that the administration of Swimming South Africa is an important factor contributing to poor national performance. The reasons attributed to this factor were poor organisation of swimming meetings in South Africa, last-minute changes to swimming programmes at galas, use of venues that are not suitable in terms of space and facilities, and the organisation of galas at altitude, contrary to international trends according to which most world championships are held at sea level. Since a 4% drop in aerobic performance has been reported with an increase of 1 000 m above sea level,¹⁰ this practice will reduce the chance of South African swimmers qualifying based on international standards.

Positive findings of this research were related to drug testing. Of the 87% of swimmers tested by SAIDS, only 1 swimmer tested positive, and that was for cannabinoids and a stimulant in February 2003, whilst no positive tests were obtained between January and October 2004 (SAIDS data base). Sixty-nine per cent of the respondents were on some form of supplement, which included creatine ($N = 11$), protein supplements ($N = 35$), carbohydrate replacement ($N = 20$) and a range of other supplements, including vitamins, minerals, ZMA, HMB, glutamine, Golden products, L-carnitine, antioxidants and spirulina. A study that screened over-the-counter nutritional supplements for the presence of steroids or stimulants banned by the World Anti-doping Agency, found that 7% of the supplements tested might be mislabelled or contaminated with banned substances.¹¹ Therefore, it may be concluded that inadvertent doping through nutritional supplement use might be a reality for athletes¹¹ since the swimmers spent an average of R389 per month on nutritional supplements.

It is critical to note that 73% of the swimmers reported that they were aware of other swimmers who consumed performance-enhancing substances. Therefore, it is likely that more positives will be identified at future swimming events. Coopoo and Jakoet⁴ reported that the incidence of drug use will increase with increased international travel and greater exposure to international influences. To provide swimmers with a responsible training regimen, up-to-date training methods should be used and nutritional supplements should be provided to reduce their reliance on drugs as performance enhancers.

It was an interesting note that most swimmers felt that South Africa has the raw talent, national pride and the will to win at international level. This positive attitude of South African swimmers augurs well for the sport in the future.

Conclusions

The administration of Swimming South Africa should take cognisance of the views of the swimmers with regard to their organisation of competitions, financial assistance and educating athletes on scientific and medical support that is available for optimising performance. More exposure to international competition is required by the top 50 swimmers

in South Africa. An incentive system should be put in place to motivate swimmers to achieve at international level

The High Performance Testing Programme of the Sports Commission should be revised to include swimming-specific tests and feedback of results to the athletes and coaches rather than to the federation. More scientific intervention strategies rather than testing only, are required to enhance performance. A better system of communication should be developed between the swimmers and Swimming South Africa.

Greater financial assistance should be provided by Swimming South Africa, NOCSA and private funding agencies. Swimming South Africa should play a leading role in securing funding for the top 50 swimmers in South Africa. The conservative estimate for a monthly stipend for swimmers in South Africa varies between R5 000 and R8 000 per month.

The model for success in sport described by Lambert⁷ was well formulated, except that financial support plays the largest role in the enhancement of sport performance. Good administration of the sport is of critical importance to the success of swimming in South Africa.

Finally, for world-class performance the following factors are required: efficient administration of the sport, the most up-to-date scientific and medical support programmes, the best coaching skills coupled with the financial support, raw talent and the will to win.

Noakes⁹ summarised success in international sport as follows: Nothing can guarantee success in international sport, since change is often the margin between defeat and victory. But at least we are beginning to learn how not to lose the contest even before the kick-off.

REFERENCES

1. Ben-Metech Y. *Training for Top Performance*. Hout Bay: Garrep Publishing Company, 1999: 6.
2. Bompa JO. *Periodization Theory and Methodology of Training*. 4th ed. Champaign, Ill.: Human Kinetics II, 1999: 7-8.
3. Bruckner P, Khan K. *Clinical Sports Medicine*. New York: McGraw-Hill, 2001.
4. Coopoo Y, Jakoet I. Substance abuse and knowledge thereof among elite South African athletes. *South African Journal of Sports Medicine* 2000; 2: 10-3.
5. du Toit T. Maybe we can learn from others: even the Aussies. *Club and School Sport* 2004; 1: 4-8.
6. Jonekheere K. Rewards generate smiles for swimming quarter. *Natal Mercury*, 16 September 2004.
7. Lambert M. Six steps to sporting excellence (Editorial). *South African Journal of Sports Medicine* 2002; 2:1
8. Lambert M. Administration in sport — a much needed kick-start? (Editorial). *South African Journal of Sports Medicine* 2004; 16:1.
9. Noakes T. Time to conquer. *Discovery*, Spring Issue, 2003: 17.
10. Robergs RA, Robergs SO. *Exercise Physiology, Exercise Performance and Clinical Applications*. Baltimore: Mosby, 1997.
11. van der Merwe PJ, Grobblelaar E. Inadvertent doping through nutritional supplements is a reality. *South African Journal of Sports Medicine*, 2004; 16:3-7.

SASP 2005



The Gateway to Recovery

Second International Congress of Physiotherapy

INTERNATIONAL PHYSIOTHERAPY CONGRESS FOR SANDTON

The South African Society of Physiotherapy recently hosted the 2nd International Conference at the Sandton Convention Centre. The theme of the congress was "The Gateway to Recovery" and proved to be a resounding success.

A variety of topics pertinent to the physiotherapist in both the private and public sector were covered. Our respected International experts included; Monika Fagevik Olsén, Marino Rocabado and Fredericke van Wijck who all imparted a wealth of knowledge to delegates. In addition, a number of local papers were presented, all of which proved to be of the highest quality!

The post-congress workshops hosted by Dr Mariano Rocabado, from the University of Chile in Santiago was a definite highlight. His many years of experience in both Cervical and Lumber Spine Management gave delegates' academic insight as well as practical knowledge.

Not only was the academic side enriching, but delegates had the opportunity of meeting old friends and colleagues and making new ones!