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Prediction Function for Identifying Talent in 14- to 15-Year-old Female Field Hockey Players

CAROLINA F. NIEUWENHUIS, EMANUEL J. SPAMER & JAQUES H. A. VAN ROSSUM

*The object of this study was to identify kinanthropometric, motor-physical and psychological variables and specific field hockey skills that influence field hockey performance at the age of 14 to 15 years. The two top girls' field hockey teams in the North West Province (South Africa) U/15 (under 15 age group) field hockey league (*n = *27), as well as the two teams who ended at the bottom of the league (*n = *25), were exposed to a test battery. The 52 subjects were classified according to their league results as successful and less successful. The test battery consisted of nine field hockey skills tests, 16 kinanthropometric tests and six physical-motor ability tests and two sport psychological tests. A statistical analysis of the data was done for descriptive purposes and statistical significances between the successful and less successful players were determined. Results indicated meaningful differences in some variables. A prediction function was therefore developed consisting of eight variables that successfully distinguished between successful and less successful 14- to 15-year-old female field hockey players.*

Introduction

Attitudes to life and the norms of society have an influence on the community's approach to sport. According to the HSRC's (Human Sciences Research Council) report (1982) on sport, which was carried out in South Africa, sport is not an unnecessary luxury, but a necessary social institution, which offers people formative, cultural and educational possibilities.

The South African government, in collaboration with the National Sport Council (NSC) has, since 1995, shown in its national policy that the identification of talent in sport enjoys a high priority. Research on talent identification and development in South Africa has been done by Badenhorst (1998), Du Randt (1993), Du Randt and

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Headley (1993), Hare (1997), Nieuwenhuis (1999), Pienaar (1987), Pienaar and Spamer (1995, 1996, 1998), Pretorius (1996) and Van der Merwe (1997).

Dotan, Goldbourt and Bar-Or (1980) and Potgieter (1993) are of the opinion that talent should be identified at an early age. In this manner individual sporting potential will, in the long term, be developed optimally by means of effective coaching and guidance. Van Zijl (1984) regards quality coaching and guidance as one of the important cornerstones of the participation in and development of sport. The top achiever is important in any sporting programme and therefore talented sportsmen and sportswomen should be identified by coaches at an early age.

Between 22% and 37% of participants between the ages of 13 to 15 are lost to different kinds of sport because they experience a lack of sufficient skills (Orlick, 1974). Feelings of incompetence and the subsequent inability to compete effectively may end in non-participation (Feltz & Petlichkoff, 1983; Nel, 1978). The importance of an effective talent identification programme may thus not be underestimated.

From the available literature it is apparent that although the identification of talent in field hockey receives attention in different countries, as a particular field of scientific study, it is still in its infancy. From information gathered during personal interviews with international field hockey administrators it is apparent that the identification of talent is done through the observation of the players by experts in the sporting code, coaches and selectors, followed by a process of elimination during practice sessions and camps; interviews with officials were conducted by the first author in the following countries: Australia, England, Ireland, the Netherlands and the USA. The elimination process is mainly concerned with the selection of school, regional and national teams from especially the under-13 age group up to the senior level.

These systems do not necessarily exclude players after they have failed a primary selection. They may be repeatedly offered a chance should they again be identified as talented. If tests are used they are mainly aimed at determining skills with the idea of using the results as an evaluation or indication of the quality in a certain age group, or even as a national norm (AEWHA, 1996; KNHB, 1984; New Zealand Field hockey, not dated; SAHA, 1997; Scottish Field Hockey Union, not dated; Tichelman & Van Rossum, 1989). Van Rossum (1989) subjected some field hockey skills tests to scientific authentication. As a rare example of a study on the motivation for achievement in elite senior field hockey players, Van Rossum (1995) was able to compare data gathered with male and female national squads of the Netherlands, Australia and South Africa.

The development and talent identification of field hockey players in South Africa takes place on a similar basis. Since the unification of field hockey in South Africa[1], a committee has been formed with the specific mandate to develop field hockey in disadvantaged communities (SAHA, 1999). Children from various communities are involved in clinics where the emphasis is on the development of technical and physical skills. The programmes offered at these clinics differ from province to province and from coach to coach because there is no uniform development and talent identification programme. It is apparent that there is a need to

identify talented field hockey players, especially among youth players, according to scientific methods.

Woodman (1985) believes that various anatomical, physical, motor and psychological variables all play a role in achievement in sport and do have an influence on the identification of talent. Relevant literature makes it quite clear that researchers differ on the variables that determine talent and influence achievement (e.g. Van Rossum & Gagné, 1994).

From the available relevant literature it seems that the present criteria and/or tests to identify talented field hockey players reveal certain shortcomings. The South Africa field hockey structure at present mainly uses a selection system (coaches and selectors) and a variety of skills tests to determine the talent and skills level of hockey players.

To be able to make effective predictions of success in a specific sport, the key factors in that particular sport must be identified by means of a task analysis of the sporting ambience (Van Rossum & Gagné, 1994). It is clear that the analysis used ought to indicate what is expected of the individual player in that milieu where achievement is important and expected. The research problems which this study intends to answer are, first of all, differences in achievement between successful and less successful 14- to 15-year-old female field hockey players regarding kinanthropometric, physical-motor, psychological and game-related (field hockey skills) tests, and, secondly, the composition of a prediction function based on the mentioned set of variables in order to distinguish between successful and less successful 14- to 15-year-old female field hockey players.

Method

Subjects

The respondents subjected to a battery of tests were the female players of the two most successful teams and of the two least successful teams in the South African North West Province U/15 (i.e. under 15 years of age) field hockey league ($n = 52$). The two groups are very similar in stature; for relevant anthropometric variables (body weight, body length) see Table 1.

The information in the prediction function has been used as a set of criteria to identify successful and less successful players in another group of 14- to 15-year-olds ($n = 42$; cf. Table 6). The classification of subjects was highly efficient: the prediction function of eight variables ensured a prediction correctness of 90.5%. Only 42 respondents of the original group ($n = 52$) were available for the development programme due to the fact that some of the players moved to another province and some stopped playing the game.

Measuring Instruments

In order to be able to put together the battery of tests, a task analysis was carried out in which the various factors which determine performance in field hockey were taken

Table 1. Kinanthropometric variables. Mean score, standard deviations and *p*-values of *t*-tests of the group of successful and the group of less successful 14- to 15-year-old female field hockey players

	Successful ($n = 25$)		Less successful ($n = 27$)			
	Mean	*SD*	Mean	SD	*t*-value	*p*-value
Weight (kg)	56.06	6.83	56.76	9.22	0.3126	0.9265
Length (cm)	163.26	5.47	162.72	5.37	0.3588	0.6277
Arm spread (cm)	164.16	6.24	163.67	5.84	0.2918	0.7672
Skin-folds (mm)						
Triceps	16.89	5.94	17.78	4.95	0.5845	0.6019
Sub-scapular	13.55	4.94	14.22	5.51	0.4623	0.6255
Supra-spinal	20.25	8.22	22.00	9.25	0.7222	0.5324
Abdominal	16.08	6.45	18.11	7.84	1.0226	0.3585
Frontal thigh	27.32	12.88	35.17	12.33	2.2414	0.0286
Medial calf	18.03	8.76	22.11	8.75	1.6789	0.1341
Circumference (cm)						
Arm (bent and flexed)	25.88	2.27	25.59	2.47	0.4412	0.5542
Thigh	50.72	4.51	51.02	4.72	0.2344	0.9987
Calf (maximum)	33.44	2.29	34.17	3.03	0.9845	0.4389
Cross-section measurements (cm)						
Humerus	6.44	0.29	6.40	0.30	0.4888	0.5561
Wrist	5.30	0.21	5.40	0.25	1.5658	0.1332
Femur	9.17	0.38	9.16	0.47	0.0846	0.7635
Ankle	6.82	0.28	6.88	0.41	0.6201	0.6179

into consideration. The battery of tests include game-specific field hockey skills, physical-motor, kinanthropometric and psychological variables; all intended to assess female field hockey players in the 14- to 15-year-old age group.

The tests for all the various skills were carried out according to a predetermined test protocol by well-trained testing officials. The following tests were used in the compilation of the test battery.

Kinanthropometric tests. In total, 17 kinanthropometric variables were measured. The following measurements were carried out: *body length*, *body weight*, *spread of the arms*, *skinfolds* (triceps, sub-scapular, supra-spinal, abdominal, frontal thigh, medial calf), *circumferences* (upper arm, thigh, calf) and *cross-section measurements* (humerus, wrist, femur, ankle). The measurements were done according to the protocol recommended by Norton and Olds (1996).

Physical-motor tests. In total, seven physical-motor tests were administered. The following variables were measured: *endurance* (beep test: Brewer *et al.*, 1988; Kirby, 1991), *explosive power and stamina* (vertical jump: Bloomfield *et al.*, 1994)

and multi-level sit-ups (NSW Academy of Sport, 1995), *flexibility* (sit and reach test: Heyward, 1991), *speed* (40 metres: Bloomfield *et al.*, 1994), *nimbleness/agility* (505 metres reaction test: Draper & Lancaster, 1985).

Game-specific field hockey skills tests. A total number of nine tests, designed to measure aspects of motor-technical ability (field hockey skills; "technique"), were administered. The following tests were included: *agility* (Illinois Agility Test: SAHA, 1997), *metre stick test* (SAHA, 1997; this test is sometimes referred to as "drag test" (Tichelman & Van Rossum, 1989) or as "skills yardstick test" (AIS, not dated)), *push for accuracy of a rolling ball from right foot* (Tichelman & Van Rossum, 1989), *hit for accuracy of stationary ball* (KNHB, 1984), *hit for accuracy of rolling ball* (Tichelman & Van Rossum, 1989), *push through the air for accuracy* ("flick": Tichelman & Van Rossum, 1989), *reverse stick pass for accuracy* (Tichelman & Van Rossum, 1989), *slalom dribble* (Tichelman & Van Rossum, 1989), *hit for distance and accuracy* (KNHB, 1984). The tasks taken from the Tichelman and Van Rossum field hockey technique test are each constructed for Dutch youth players of 13 to 14 years of age (C and D junior level) and were designed to be administered on an artificial grass field hockey pitch. In the present study, these tests were administered on a natural grass surface field hockey pitch. All skills tests were administered in one session.

Sport psychological tests. Two sport psychological questionnaires were administered, measuring a total number of nine psychological variables. One questionnaire measures *Competition Anxiety* (Competitive State Anxiety Inventory–2 (CSAI–2): Martens, 1990), while a second questionnaire focuses on the *Motivation to Achieve* (Achievement Motivations Scale for Sporting Environments (AMSSE): Rushall & Fox, 1980). The Competition Anxiety test determines a player's cognitive and somatic state as well as the player's self-confidence at the time of measurement (three variables). The AMSSE is designed to measure "approach-success" (MS: motivation to succeed) and "avoidance-failure" (MF: motivation to avoid failure) in three contexts: in general (MS; MF), in training/practice (MST; MFT), and in competition (MSC; MFC), yielding six psychological variables. The two sport psychological tests were administered by a test official, according to the prerequisites of each of the tests.

Results

Kinanthropometric Variables

On examining the results of the kinanthropometric variables for the 14- to 15-year-old female field hockey players (see Table 1), it is clear that there are few differences between the two groups of which only one was statistically meaningful. The only significant difference between the two groups is the frontal thigh skinfold

Table 2. Physical-motor variables. Mean scores, standard deviations and *p*-values of *t*-tests of the group of successful and the group of less successful 14- to 15-year-old female field hockey players

	Successful ($n = 25$)		Less successful ($n = 27$)			
	Mean	*SD*	Mean	SD	*t*-value	*p*-value
Endurance (beep test) (steps)	6.40	1.55	5.19	1.18	3.1488	0.0025
Vertical jump (cm)	30.80	5.85	28.98	4.77	1.2238	0.2306
Multi-level sit-ups (freq.)	48.40	9.43	44.44	8.92	1.5528	0.1081
Flexibility (mm)	46.02	5.01	46.34	5.61	0.2173	0.9310
Speed 40 m (sec)	6.51	0.33	6.86	0.44	3.2600	0.0020
Nimbleness—left (sec)	2.80	0.15	2.88	0.26	1.3712	0.1520
Nimbleness—right (sec)	2.82	0.17	2.90	0.22	1.4733	0.1276

($p = 0.0286$). None of the other kinanthropometric variables resulted in different mean values of the successful and the less successful groups. Both groups of subjects were factually of the same weight, length, had similar stretched arm width, similar circumference of body parts, and, generally, showed similar fat-percentages, as the skinfold measurements indicated, with the exception of the frontal thigh skinfold. The successful group had lower percentage of fat tissue, possibly as a result of specific exercise and/or practice.

Physical-Motor Variables

The statistical analyses regarding the six physical-motor abilities, comparing the two groups indicate that the successful group achieved significantly better results on two variables (see Table 2). In the shuttle run or beep test ("endurance"), the less successful group showed significantly less endurance than the successful group. Further, the latter group was also superior (that is, needed less time) on the 40-metre sprint test. No statistically significant differences were found on the other physical-motor tasks, indicative of body strength ("vertical jump"; "sit-ups") and flexibility.

Game-Specific Field Hockey Skills

Analysis of the data of the hockey-specific skills or "technique" tests showed (see Table 3) that the successful group performed significantly better at four skills, compared to the less successful group, while a tendency ($p < 0.10$) towards a significant difference was found on one other skill. The successful group appeared better in skills handling the ball while dribbling ("agility"; "metre stick"; "dribble"), and in one of the tasks requiring a push for accuracy. Other technical skills in field hockey were not found to be different between groups.

Table 3. Game-specific field hockey skills variables. Mean scores, standard deviations and *p*-values of *t*-tests of the group of successful and the group of less successful 14- to 15-year-old female field hockey players

	Successful ($n = 25$)		Less successful ($n = 27$)			
	Mean	*SD*	Mean	SD	*t*-value	*p*-value
Agility (Illinois) test (sec)	25.89	3.37	29.89	5.03	3.3911	0.0014
Metre stick test (freq.)	57.12	9.64	47.93	8.67	3.6043	0.0007
Push for accuracy (ground) (freq.)	0.50	1.06	0.44	0.80	0.2290	0.8929
Hit for accuracy (stationary ball) (freq.)	1.72	1.86	0.93	1.14	1.8292	0.0721
Hit for accuracy (rolling ball) (freq.)	2.52	1.58	2.15	1.66	0.8234	0.3970
Push for accuracy (air) (freq.)	2.68	1.70	1.30	1.14	3.4104	0.0012
Reverse stick pass for accuracy (freq.)	2.28	1.59	1.70	1.61	1.3063	0.2337
Slalom dribble (sec)	40.06	6.76	46.00	8.27	2.8444	0.0045
Hit for distance and accuracy (freq.)	1.00	0.91	0.63	0.69	1.6423	0.5927

Note: Frequency (freq.) refers to number of successful trials.

Sport Psychological Variables

Regarding the psychological variables, no statistically significant findings were obtained on the Anxiety Questionnaire (CSAI), while the successful and less successful groups appeared to be different on each of the three subscales of the AMSSE, which measure the motivation to approach success. In each case, the successful group obtained a lower score (see Table 4); this lower score indicates in fact a *higher* level of motivation to achieve success.

Table 4. Sport psychological variables: Illinois self-evaluation questionnaire (CSAI-2), and motivation questionnaire (AMSSE). Mean scores, standard deviations and *p*-values of *t*-tests of the group of successful and the group of less successful 14- to 15-year-old female field hockey players

	Successful ($n = 25$)		Less successful ($n = 27$)			
	Mean	*SD*	Mean	SD	*t*-value	*p*-value
CSAI-2 variables						
Cognitive	18.05	4.20	17.18	4.93	0.6866	0.5355
Somatic	18.45	5.13	16.73	4.84	1.2412	0.2575
Self-confidence	25.59	4.74	25.27	4.12	0.2589	0.8133
AMSSE variables						
MS (success)	17.24	3.60	20.22	4.72	2.5709	0.0128
MF (failure)	46.05	6.69	44.22	5.88	1.0443	0.3299
MST (success; training)	13.29	2.76	15.37	3.85	2.2512	0.0289
MFT (failure; training)	27.24	3.73	26.63	4.05	0.5653	0.5935
MSC (success; competition)	13.10	2.76	15.81	3.78	2.9676	0.0045
MFC (success; competition)	33.90	5.26	31.93	4.35	1.4653	0.1672

Table 5. Results of a step-by-step discriminant analysis to select variables

Variables	*F*-value	*p*-value
Field hockey skill: agility (Illinois skills test)	14.933	0.000
Physical-motor: speed (40 metres)	11.902	0.001
Kinanthropometry: humerus (cross-section)	7.110	0.013
Psychology: (AMSSE) approach-success in competition (MSC)	6.3009	0.021
Field hockey skill: hitting a rolling ball for accuracy	4.138	0.052
Psychology: (AMSSE) approach-success (MS)	3.803	0.062
Physical-motor: flexibility (sit and reach)	2.125	0.156
Kinanthropometry: femur (cross section)	1.066	0.311

The Prediction Function

In addition to comparing the two groups on each of the separate variables, a discriminant function was derived from the combined set of variables, in order to find out which combination of variables can be used to optimally distinguish successful and less successful players.

A major component analysis was carried out on the data, grouping the respondents according to the first major component. A step-by-step discriminant analysis was subsequently carried out on the data. All variables were analysed in order to highlight the best discriminators and to indicate whether the original grouping was correct. The method described by Thomas and Nelson (1990) was used for this purpose.

Eight variables out of a possible set of 32 variables were selected in the step-by-step discriminant analysis (see Table 5). These eight variables distinguish the female field hockey players in the 14- to 15-year-old age group into two categories: "successful" and "less successful".

Within the set of eight variables constituting the prediction function, two are kinanthropometric (femur and humerus cross-sections), two are physical-motor (40 metre speed and hip flexibility), two are game-specific skills (Illinois agility and hitting for accuracy) and two are sport psychological (AMSSE: approach-success (MS) and approach-success in competition (MSC)).

Two prediction functions are constructed on the basis of this analysis; one for successful and one for less successful players. The full description of each of the prediction functions is as follows:

Successful player: $-704.2320 - 01.235\ (\text{agility}) + 36.671\ (\text{speed}) + 87.653\ (\text{humerus}) + 9.068\ (\text{MSC}) + 2.120\ (\text{hit}) - 4.862\ (\text{MS}) + 2.646\ (\text{flexibility}) + 50.571\ (\text{femur}).$

Less successful player: $-704.091 - 0.700\ (\text{agility}) + 42.494\ (\text{speed}) + 80.277\ (\text{humerus}) + 10.979\ (\text{MSC}) + 1.221\ (\text{hit}) - 6.100\ (\text{MS}) + 2.846\ (\text{flexibility}) + 48.592\ (\text{femur}).$

The information in the prediction function has been used as a set of criteria to

Table 6. Cross-validity of discriminant function.

	Successful	Less successful	Total (%)
Successful	$n = 20$	$n = 1$	95.2
Less successful	$n = 3$	$n = 18$	85.7
Total (*f*)	$n = 23$	$n = 19$	90.5

identify successful and less successful players in another group of 14- to 15-year-olds ($n = 42$; see Table 6). According to the prediction function, in the original group of 21 successful players, three of 21 players were incorrectly placed in the successful group and one of the less successful group was incorrectly placed. However, the classification of subjects was highly efficient: the prediction function of these eight variables ensured a prediction correctness of 90.5%.

Table 6 shows that only one originally classified successful player was misplaced and three originally classified as less successful players were misplaced. In summary it means that only a few subjects could not be placed correctly into their "original" category (that is, the category they originated from, being a member of the successful or of the less successful teams). These results suggest a good cross-reference validity of the prediction function. The function may therefore effectively be used to classify female field hockey players of 14 to 15 years of age into the mentioned categories.

Discussion and Conclusions

This study investigated the relevance of a large set of variables in order to distinguish successful from less successful players. In the well known, and probably most extensive contribution about talent detection and development in sports to date, Régnier *et al.* (1993) state that talent identification to predict the future performance of participants in sport, can take as its starting point the present characteristics and abilities. Further, they claim that a multidisciplinary approach is a necessity: Régnier *et al.* (1993) document that each of the earlier attempts to focus on variables taken from a single discipline (whether being the physiological (physical-motor) or the psychological domain) were unsuccessful.

The present study has taken a large set of variables from various scientific domains. The composition of the prediction function, combining variables from each of the domains included in the study, suggests that it would have been erroneous if one of the domains had been left out. Further, the composition of the prediction function shows how easily selectors might make mistakes if they select potential talent on the basis of having seen them in a game situation. The study illustrates the relevance of taking into account information from such diverse domains as the physical-motor, the kinanthropometric, the psychological and the game-specific motor skills. Although the present study must be regarded a promising beginning, there are some important qualifications to be taken into consideration.

The study only included female subjects. One wonders whether similar results might have been obtained at other age levels and/or with male subjects. Earlier investigations from the same laboratory (Potchefstroom University, South Africa) suggests that one should not generalize the present findings without proper empirical justification.

The studies on rugby by Hare (1997), Pienaar and Spamer (1994, 1996, 1998) and Van der Merwe (1997) indicated that kinanthropometric variables are the most significant components that distinguish between the talented and the non-talented rugby players at the age of 10 years, while this certainly is not the case at the age of 16 years. Further, in a study on 16-year-old soccer talent, Badenhorst (1998) reported that the relevance of kinanthropometry was insignificant, since no kinanthropometric variable was included in the prediction function to distinguish talented and less talented soccer players.

Regarding the physical-motor tests, it is apparent that a good aerobic ability (assessed in the shuttle run or beep test) forms the basis for better performance during the game of field hockey. In modern field hockey, irrespective of the playing surface (natural or artificial grass), speed over a short distance (that is, acceleration) with and without the ball is an essential ability (40 metre sprint). The same tendency was recorded in rugby (Pienaar & Spamer, 1994, 1996, 1998; Van der Merwe, 1997) as well as in soccer (Badenhorst, 1998).

The ability to move with the ball in different directions, to exercise good ball control and to pass the ball accurately, ensures ball possession and that the ball remains in play. If the players can move quickly, with and without the ball, support in defence and attack is ensured. It appears that the successful players did better in those tests which support these facets of the game than did the less successful players. The results in the studies of rugby (Pienaar & Spamer (1994, 1996, 1998; Van der Merwe, 1997) and soccer (Badenhorst, 1998)) indicate the same tendency.

Pienaar and Spamer (1994, 1996, 1998) found that psychological variables did not affect the 10-year-old rugby player. Badenhorst (1998) could also not identify a psychological variable to use in the prediction function for 16-year-old soccer players.

The present findings, coupled with those from rugby and soccer, make clear that further research is meaningful and called for, not only within the same branch of sport at different ages and/or competitive levels (and, if applicable, between boys and girls), but also with respect to similarities and differences between branches of sport. The latter type of studies would certainly constitute an empirical basis for suggesting to children and adolescents which sport might be a relevant option, taking their abilities and characteristics into consideration. According to Régnier *et al.* (1993) the requirement of variables differs according to age. Régnier *et al.* (1993), Gimbel (1976, in Régnier *et al.*, 1993) and Havlick *et al.* (1982, in Régnier *et al.*, 1993) also indicate that the original predictors of success can be influenced by growth, exercise and coaching, especially during puberty. Long-term (or longitudinal) studies are therefore necessary to determine which variables are prominent at which phase in the sporting career.

The relevant variables to distinguish successful from less successful female players

do not stem from only one of the sets or domains of variables, but emanate from each of the four domains measured in the present study: from the field hockey skills domain: (agility; hit for accuracy), from the physical-motor domain (speed; flexibility), from the kinanthropometric domain (humerus; femur) and from the psychological domain (MSC; MS). Taking the results together, clear differences between successful and less successful female field hockey players are evident. The successful female field hockey player at 14 to 15 years of age passes the ball more accurately over a distance, is faster in covering a short distance, has a broader humerus and femur, and experiences the competitive situation more positively.

This study did not stop after having determined differences between successful and less successful players, but also calculated a prediction function to classify 14- to 15-year-old female field hockey players. It is especially the latter finding that should constitute a warning signal to the officials responsible for the selection of talented youth. The prediction function shows that with a little help from scientific tests (measuring only a subset of eight variables out of the original 42) one can very effectively distinguishing successful players from those who are less successful. It would indeed be an intriguing aim of a future study to find out how the prediction function (science) relates to the choices of the selectors (expert opinions). Will the same players be "discovered" or will different sets of players be selected by the two methods?

Note

[1] The different national bodies governing hockey in South Africa up to 1992 were the South African Women's Hockey association (SAWHA), the South African Men's Hockey Association (SAMHA), the South African Women's Hockey Board (SAWHB), the South African Men's Hockey Board (SAMHB), the South African Women's Hockey Congress and the South African Men's Hockey Congress. Representatives of these bodies formed an interim committee in 1992 and after elections in 1994, the South African Hockey Association (SAHA) was formed.

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