The importance of selection using the morphological and physical parameters to determine the profile of volleyball players Aged 9-12

A field study of some states' clubs.

<div dir="rtl">

العنوان: أهمية الإنتقاء باستعمال المعايير المورفولوجية والبدنية في تحديد ملمح لاعبي الكرة الطائرة 9-12 سنة.

دراسة ميدانية : لبعض أندية ولايات الأغواط، الجلفة والبيض.

</div>

CHACHOU Ahmed Ali

University of Ammar Telidji, Laghouat , ahmedchachou@hotmail.fr

<div dir="rtl">

مخبر الأبعاد المعرفية والتصورات التطبيقية لعلوم التدريب من خلال مقاربات متعددة.

</div>

Abstract : This study aims to highlight the importance of selection by morphological and physical criteria to determinate the profile of volleyball players from 9-12 years of age to a field study of some state 'club of Algeria, and to propose a model that includes the morphological and physical characteristics, as well, as we have compared this model with a standard model. The research relied on a sample consisting 120 players, 70 males and 50 females aged 9-12 who practice Volleyball in states: Laghouat, Djelfa, El-Bayadh. We applied the tests in a repeated way for six weeks pre-test and after test in order to get accurate results for both the length test, weight, arm length, length of humerus and palm, as well as physical tests: speed, vertical uplift, strength, flexibility, the statistical analysis also the difference in morphological and physical data of the Volleyball players, is 9-12 years old between a select team from the three previously mentioned states and the model of the national team, a significant difference for the national team's. Through analysis and research results, we recommend the importance of the selection using the morphological and physical standards, as well as for educators supervising young groups to carry out the selection process on scientific grounds and ensure that young people are followed up with high athletic performance.

Keywords: Detection, selection , morphological and physical standard.

<div dir="rtl">

الملخص: تهدف هذه الدراسة الى إبراز أهمية الإنتقاء بالمعايير المورفولوجية والبدنية في تحديد ملمح لاعبي الكرة الطائرة من 9-12سنة لبعض أندية ولايات الأغواط، الجلفة والبيض، واقتراح نموذج يتضمن الخصائص المورفولوجية والبدنية

</div>

للاعبي كرة الطائرة وأيضا وصف الملمح المورفولوجي الخاص بهذا السن، كما قمنا بمقارنة هذا النموذج مع نموذج معياري. اعتمد الباحث على عينة تتكون من 120 لاعب 70 ذكور و50 إناث سن 9-12 والذين يمارسون الكرة الطائرة في ولايات الأغواط، الجلفة والبيض، كما طبقنا الإختبارات بطريقة تكرارية لمدة 6 أسابيع إختبار قبلي وإختبار بعدي وذلك للحصول على نتائج دقيقة لكل من إختبار الطول، الوزن، طول امتداد الذراع، طول العضد والكف، وأيضا الإختبارات البدنية:السرعة، الإرتقاء العمودي، القوة والمرونة. كما أظهر التحليل الإحصائي اختلاف الخصائص المورفولوجية ما بين الجنسين، وأيضا اختلاف المعطيات المورفولوجية والبدنية ما بين فريق مختار من الولايات الثلاثة المذكورة سابقا ونموذج الفريق الوطني، إختبار "ت" معنوي لصالح الفريق الوطني، ومن خلال التحليل النظري والتجريبي ونتائج البحث نوصي بأهمية الإنتقاء باستعمال المعايير المورفولوجية والبدنية وأيضا على المشرفين على الفئات الشابة القيام بعملية الإنتقاء بأسس علمية وضمان متابعة توجيه الشبان إلى الأداء الرياضي العالي.

- **الكلمات المفتاحية: الإكتشاف، الإنتقاء، المعايير المورفولوجية والبدنية.**

Theoretical framework

Modern sports training is mainly based on the establishment of a system for detection of young talent in order to guide the young person to a particular practice. However, the selection process requires scientific foundations and has several criteria, including: (morphological structure), so that the morphological aspect affects the physical characteristics of the astrometric.

However, the selection process requires scientific foundations. It has several criteria, based mainly on morphological criteria, namely, the physical characteristics of the anthropometric and biometrics, as mentioned by (Slifi and others, 2011,p10-12) « Early knowledge of the characteristics of the biometric and physiological is very useful in the detection and selection as well as directing young sports talent, but the morphological aspect varies according to the requirements of the practice in question, for example, Volleyball is one of the most technical and functional complex sports . Especially as height, weight and length of limbs... Etc. It is better to reveal these characteristics at an early age" as stated by (Balbul Moussa, 2015,p233-242) "Early identification of physical composition may give an idea for the educational process" so early diagnosis

contributes to the formation of young people with unique morphological characteristics in order to bring them to the highest athletic performance.

(Platonov, 1984,p 288) declared the "achieving athletic performance is the first with individuals with rare morphological qualities, with the highest level of development of functional and mental abilities", as (Delbi Mohammed, 2012,p 187-194) stated, "it is difficult to reach the high level of prestigious in the field of sports in general. Unless the physical planning of the selection based on solid scientific foundations in the preparation and formation of young groups in the field of modern sports training" as indicated by the study (Chibane Samir, 2010, p 53-119) entitled "Physical dimensions as selection criteria and football players" where the study focused on the role of morphological characteristics In determining the morphological side of football players under the age of 17, he also used the anthropometric method and compared the morphological characteristics of Algerian players with global morphological characteristics of the same age, and statistical analyses were follows:

The existence of moral differences in most morphological and physical criteria (intertropical standards and physical tests) were in favor of other national teams.

As mentioned by (Bensalem Salem,2009, p 31-44) in his study that "selection and care of young talents (case study of the Parado Football Academy) which aimed at the study of the effectiveness of the system of training young talent in sports schools, Parado Football School in order to take the experience of the Parado school and circulate it to other clubs as a model to facilitate the tasks of the administrators of sports clubs as well as the use of dialogue directed to technical officials in the training centers Of Parado and the basic result was as follows: The School of Parado is based on a structured and well-structured (long-term) system for the purpose of reaching the highest level in the future, as considered the work on this system by sports clubs of the highest proposals, and

through these research and studies we conclude the importance of selection and morphological characteristics and also young talent, as (Platanov,1984, p 288) "Upon reaching the second stage of the training course it is important to refer to the morphology characteristics of young people if they have level of standards High". From this standpoint, we decided to ask the following question:

However, the creation of a morphological model that includes morphological characteristics which is the subject of research, the morphological model that concerns volleyball players, can determine the physical morphological aspect of volleyball players. Specifically, the 9-12 age group related to the research sample? What is the role of morphological and physical selection in creating a model for 9-12-year-old volleyball players?

- Are there statistically significant differences between the sample members in the morphological and physical data due to the gender variable?

- Are there statistically significant difference between individuals selected from the study sample and a sample from the national team in the morphological and physical data?

This study derives its importance through its focus on two axes:

The extend of the vitality of the topic that we deal with through the information provided about the selection process in general and the physical and morphological criteria in particular. As well as benefiting from the results of the current study, since selection based on scientific foundations would raise the results of volleyball teams and sport in general. The research aims, through this research, to enlighten coaches and specialists about the importance of the selection process using morphological and physical criteria in determining the profile of volleyball players 9-12 years by identifying the physical morphological aspect of the players as well as knowing the differences in these criteria between the sexes.

The practical chapter:

1- Followed Methodologies:

The step we made in our research is the survey where we tested a sample of 20 players for three states (Laghouat, Djelfa, El-Bayadh) between the ages of 9 and 12 years, as well as the location of measurements and tests as well as the validity of the tools and devices used in the study at the beginning of March 2019 during the morning training for young people, as the results of the surveys resulted in the following :

- The validity of the devices and tools used in the search as well.
- Prepare the conditions for applying search tools.

The descriptive analytical and comparative approach was also followed, which the researcher considers appropriate to the subject of the research.

At the beginning of April, we started counting the research community consisting of volleyball players aged 9-12 years, who represent the South of Algeria, 140 young men and women, and the sample of the study was limited to 120 players, 70 males and 50 females from 3 states (LAGHOUAT, DJELFA, EL-BAYADH). The method of anthropometric measurements, (Martin 1982), the standard bone points measurement of the body, was used through the use of the L.T. Holtain anthropometer wallet. P, which includes precise tools for measurement, where we used in this research longitudinal measures of the body which was applied on the right side of the players according to the model of (koslova 1977), and the measures tested (Length, Hand length) with morphological criteria (height, weight, length of stretch of arms) as well as physical tests such as speed (3×6 meters), strength (throwing the medical ball), and the flexibility (current test), and (test Sergent vertical upgrading) also this method (morphological and physical standards test) was used by the Algerian Volleyball Federation as part of the selection of young talent. It was circulated by

the International Volleyball Federation, where it includes the protocol of tests and standards described in the following table:

Table.1 Model of physical measures and physical tests

Standards	physical measures	measuring
	Path of measurement	unit
Length	It is measured by an anthropometer. A measure of height on the body if the legs are joined together	Centimeters
Weight	It is measured by an accurate medical scale	Kilogram
Arm stretch length	It is measured by an anthropomètre	Centimeters
Forearm length	It is measured by an anthropomètre	Centimeters
Standards	Physical tests	Standerize
	Method of measurement	the test
Vertical upgrading Sargent test	Jump from persistence while touching the highest possible point	Centimeters
Speed (3 x 6 meters) using the Navette method	The difference between the length of the arm's extension and the highest tangible point is calculated, it is the speed of 18 meters going. Back. Going to the back of the volleyball court is measured by a chronometer	The second
Strength of the upper limbs	Throw the medical ball weighing 2 kg from the sitting position as far as possible	meter
Flexibility curetant test	Sitting position with legs extended and hands straight. Calculate the distance of the hands out from the two men	Centimeters

In our research, we have also relied on the following statistical methods:

- Average arithmetic
- Standard deviation
- Tests. T to study differences

This is to reach quantitative indicators that help us to analyze and interpret.

2- Exposure, analyses and result exam :

Table 2. presentation and analysis of the results of morphological criteria for both sexes

Standards / Sexe		Length		Weight		Arm stretch length		Forearm length	
9 years		M	E	M	E	M	E	M	E
	Males	141	3,45	33	2,80	181	3,42	35,05	1,05
	females	151,77	4,93	39,88	2,76	192	4,29	32,05	2,20
10 years	males	155	2,12	63,33	2,62	203	3,34	30,36	2,80
	females	155,33	4,71	43,22	3,56	196,33	3,57	43,50	2,20
11 years	males	161,25	4,65	38,75	1,92	205,50	2,29	42,30	2,50
	females	156,45	3,18	44,94	4,03	200,52	3,73	40,50	3,10
12 years	males	173,93	3,99	45,50	3,79	225,05	3,42	45,17	2,90
	females	162,06	4,08	45,05	3,85	202,68	2,86	41,80	3,17

M = arithmetic mean, E = standard deviation

From the results represented in table (2) above, we note a gradual escalation of most morphological criteria (height, weight, arms stretch length, hand forearm length) from 9 to 12 years.

We also noted that the best results were recorded in the 11-12 age group, where height and weight gain was estimated at (32.94 cm and 11.5) kg for males, females (10.29 cm and 5.17 kg) and for (arm's length and arm length) we note an increase of 10.68 centimeters and 9.3 centimeters.

Figure1. Representation of the morphological criteria increase rate from 9 to 12 years for both sexes.
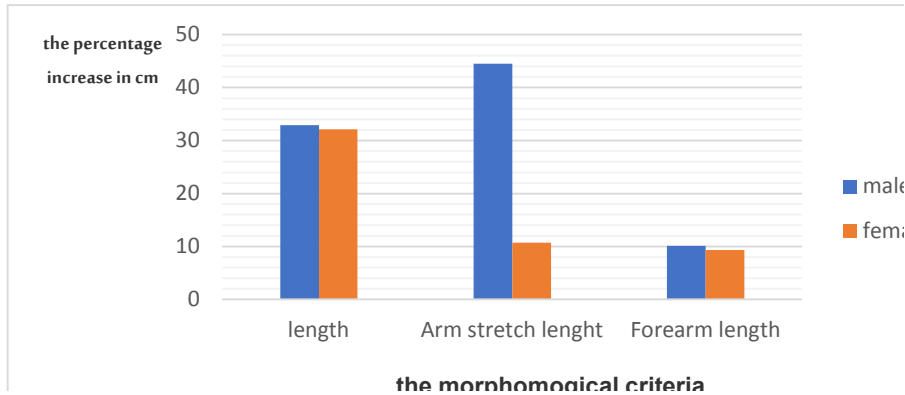
Through figure.1, we note the stages of increasing standards from one age group to another, with the following results recorded:

- Arm stretch length for males (9-10 years) estimated at 22 centimeters, and from (10-11 years) by 2.50 centimeters 19.55 centimeters for the class (11-12 years) For females (9-10 years) at 4.33 centimeters, and (10-11 years) with a capacity of 2.50 centimeters, 2.16 for the class of (11-12 years).

- The length of the male's assisted-palm. From (9-10 years) estimated at 3.31 centimeters, from (10-11 years) to 3.84 centimeters and 2.97 centimeters per class (11-12 years), for females (9-10 years) at 2.00 centimeters, and from (10-11 years) estimated at 6.84 centimeters, 15.30 centimeters per class (11-12 years)

- We note that figure 1, which shows the extent to which the rate of essential morphological criteria (arm-length, forearm-palm length) increases the height from the age of 9-12 years with a capacity of b (32.93 cm) for males and (10.29 cm) for females and (10.68 cm) for females, but the length of the forearm-palm showed a similar increase between the sexes (10.12 cm) for males and (9.3 cm) for females.

Table 3. Displaying and analyzing the results of physical exams for both sexes.

Tests / Age and Sexe		Speed (3 x 6 meters) Navette		Medical ball throw 2 kg "meters		Flexibility curetant test		Vertical upgrading Sargent test	
		M	E	M	E	M	E	M	E
9 years	Males	7	1.90	1.50	0.30	3.40	1.80	205	2.22
	females	8.25	0.07	1.45	0.25	3.60	2.15	208.43	3.26
10 years	males	6.71	0.55	1.85	0.49	3.58	2.23	229	4.39
	females	8.03	0.33	1.76	0.36	3.90	2.45	219.22	4.01
11 years	males	8.75	0.40	2.05	0.56	3.60	3.10	234.25	3.29
	females	8.06	0.30	1.90	1.03	3.95	3.02	221.04	3.45
12 years	males	6.72	0.04	2.34	1.15	3.50	3.13	255.50	3.11
	females	7.84	0.14	2.15	1.24	3.87	3.47	227.18	3.84

M = arithmetic mean, E = standard deviation

we note through table (3) that the best performance in speed was recorded at 11 years (6.72 sec±0.46) for males and females was at 12 years b (7.84 sec±0.14), but the result was recorded at 9 years b (7 sec±1,80) for males, (8.25 sec±0.07) for females, and in the higher strength test an estimated result (±2,34 1.15 males) and (±2,15 1,24female).

This applied to the vertical uplift test because it is also the best result recorded in the 12-year-old group (246.50cm ±3.11 males) and b (227.18cm±3,47 female).

As for the flexibility test, the best result was for 10-year females at a rate (3.90cm±2.45), and the lowest score was in males 9 years, with an average of 3.40cm ±1.80).

Figure 2. Representation of the vertical upward mobility rate both genders and their progression from 9 to 12 years

The evolution of vertical elevation

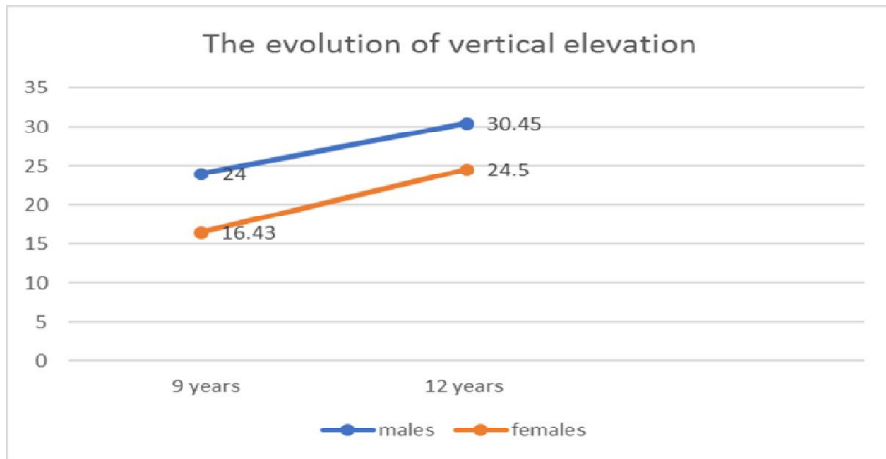|	9 years	12 years
males	24	30.45
females	16.43	24.5

Figure (3) shows the extent of the development of gender uplift from 9 to 12 years, where the rate of development of vertical elevation for males (6.45 cm), while for females estimated at 8.07 cm, this is due to the double rise of females at age 9 improves at age 12.

- Discuss the first hypothesis concerning the extraction of data, the morphological and physical criteria of the research sample, the formation of a protocol for measurements and tests representing a physical, morphological model for the volleyball player 9-12 years, through which we conclude from tables 1 and 2 that morphological and physical standards are gradually increasing from the age of 9-12 years except for the flexibility criterion; there is a gradual increase in the age of 12 years due to increased length and increase of limbo, which reduces the rate of flexibility. As the ages of 11 to 13, the growth represents the great.

Presentation and analysis of the results of the second hypothesis, studying the differences between males and females

Table 4. showing the results of differences of the morphological criteria between males and females for the research sample.

criteria / Sexes	length		Weight	Arm stretch length	Forearm length
N= 28 males M= 11.20	M	169.46	41.75	217.17	41.24
N=28 females M= 11.05	M	162.11	42.20	215.11	39.10
T-test	There are significant differences				

Through the difference between males and females concerning the morphological criteria set out in table 3 above, we note that the highest length rate was for males b (169.46) and (126.11) for females, and this applies to both arms stretch the length and hand forearm length at a rate (217.12), (14.24) for males, and (215.11) for females.

Table 5. showing the results of differences of physical standards between males and females for the research sample

criteria / Sexes	Speed (3 x 6 meters) Navette		Medical ball throw 2kg meters	Flexibility curetant test	Vertical upgrading Sargent test
N= 28 males M= 11.20	M	6.46 s	1.95 m	3.45 cm	2.37 cm
N=28 females M= 11.05	M	8.03s	1.74 m	3.82 cm	2.18 cm
T-test	There aren't significant differences				

The table (5) shows the difference in physical data between males and females, where we observe moral differences in the three criteria (speed, strength and vertical uplifting) in favor of males with a mathematical average (6.46 sec, 1.95 m, 2.37 cm) but the flexibility test was for females who recorded a rate (3.82 cm) compared to the male average (3.45 cm).

- Discussion of the second hypothesis, which include differences between the morphological and physical data of males and females, for a sample of 28 males and 28 females, which we observed from the results recorded in Table 3 and 4 and also through statistical analysis, test T, that there are moral differences in the following criteria (length T = 2,050, Arm stretch length T = 1,0406, vertical elevation t = 2,001, strength T = 1,046 and speed T = 1,005) and differences were in favor of the male sample. However, the moral differences recorded in favor of females were in weight = 1,095 and flexibility = 1,063) and this suggests a higher proportion of the fat mass in females than males at this age, as well as the moral difference for flexibility test.

Presentation and analysis of the results of the third hypothesis: a comparative study between some morphological and physical data of a sample represent the study population with 14 players on a model of the national team for the same age group 9-12 years

Table 6. showing a comparison of morphological and physical data averages between individuals selected from the sample of the study and the national team

Statistical score		individuals selected from the sample of the study	Sample national team	the sample / Standards
		N=14		
T = significant difference	M	173.83	169.90	Length
	E	3.71	3.90	
T = significant difference	M	46.05	42.75	Weight
	E	2.66	2.75	
T = significant difference	M	3.27	2.19	arm length
	E	2.17	3.90	Envergure
T = significant difference	M	2.48	2.42	Vertical Ascent
	E	2.90	3.20	Sargent test
T = significant difference	M	6.65	6.75	Speed 3 x 6 meters
	E	3.50	3.90	

M = arithmetic average E = standard deviation = number of sample T = tests differences

Through the results recorded in the table (6), we notice that the average rate was in favor of the national team by (3.17± 173,83), and the selected group from the study sample recorded an average of (3.90 ± 169,90). Also, the average weight was in favor of this sample in (2,75 ± 42,75) compared to (46,05 ± 2,66) for the sample of the national team. As for other criteria (the length, arm's extension, vertical height, speed), the following results were recorded:

(2,19 ± 3,90 cm, 2,42 ± 3,20 cm, 6,75 ± 3,90 t) for the selected category from the research sample and (3,17 ± 2,27 cm, 2,48 ± 2,90 cm, 6,65 ± 3,50 t) for the national team sample. Moral differences also came in favor of the national team.

- Discussion of the third hypothesis, which raised the question about comparing the morphological and physical data model for the south with a standard model as the sample of the national team 9-12 years, which we noticed through the statistical result shown in Table 6 , test the differences for the following criteria : (Length T = 2,054, Length of Arm Extension T = 1,038, Vertical Height T = 2,071, Speed T = 1,003) in favor of the national team. However, the significant difference related to the criterion (Weight T = 1, 024) came in favor of the group that represents the study sample, so it can be said that The model of the national team for morphological and physical standards is better than the Individuals selected from the study sample, but we must make it clear that the difference in length is not a big difference as recorded in Table (6) and also the difference in weight was in favor of this sample, as we know that the standards of height and weight are basic indicators For the volleyball player, this does not preclude consideration of the talents of the young men of the mentioned states in particular, and the interior and southern states in general in the future by those in charge of the system of discovering, selecting and directing young talents at the national level.

3- Finding and propositions results:

Through the study of the theoretical aspect of research as well as experimental and statistical analysis, we conclude that the age of 9-12 years is considered as the best age for conducting sports selection process as we have confirmed the importance of the morphological components and physical qualities of the volleyball player, as demonstrated by the protocol of morphological standards and physical tests presented in this study because the latter can be used in the

future in the process of discovering and selecting volleyball players for the age group 9-12 years. However, each particular practice has its own model. As (WEINECK,1997, p 89-97) " the susceptibility of exercise which includes a special model for the selection of morphological and physical characteristics" as also demonstrated by Abdullah Study (2010, p 99-102) «Morphological composition has an important role in the development of motor skills, and the goal of researchers Currently it is to determine the ideal morphological growth of each exercise", and by studying the comparison between the two models (The sample selected from states Laghouat, Djelfa, El-Bayadh and the national team sample) we have concluded that any selection process should not only be applied but should be directed to individuals with practice morphological components.

As (WEINECK,1997, p 89-97) said: « any exercise must be geared to a high level of athletic performance».

Therefore, we hope that there will be research on this subject in the future and from what we have concluded from this research we suggest:

- Trainers must keep up with the scientific development in the field of sports, especially the process of selecting young talents.

- Keenness to discover and select young people with morphological and physical characteristics that meet the requirements of the scientific level.

- Stay up with the pedagogical accompaniment of the young player who was selected in order to guide him to the highest possible athletic performance.

4- List of used sources and references in the study:

- Platonov Vladimir Nicolaivitch , Sport training theory and methodology , Paris , Trembley , 1984 , p 228 .

- Weineck Yourgen , Training manual , Vigot , Paris , 1997 , p 89-97.

- MARTIN AD , AND WARD R , Body composition (D. Docherty Measurement in pediatric exercise science , Champaign II , Human Kinetics) , 1996 , 87-128 .

- SARGENT Didey Alan , The Physical Test of a Man , American Physical Education Review , 1921 , 26, 188-194 .

- Bensalem Salem , The detection and management of young sports talent case of the paradou Football Academy , Journal of sciences and techniques of physical activities , volume 6 , number 6 , 2009 , p 31-44 .

- Bahri Abdullah , a study of correlation of physiological criteria , the maximum volume of oxygen consumption " the maximum anaerobic non-acidic capacity "and the structure of training in the sport community of   male constantine , Journal of psychological and educatonal Research , volume 1 , number 3 , 2010 , p 99-102 .

- Balboul Mousa , The contribution of some anthropometrical measurements in determining the level of motor learning , Journal of sports creativity , volume 6 , number 2 , 2015 , p 233-242 .

- Chibane Samir , Body dimensions as detection criteria for young Algerian fooballers U17 , doctoral thesis , Claude Bernard University , 2010 , p 53-119 .

- Delbi Mohammed , The reality and prospects of Athletic Selection and its relationship to handball Schools (a field study of Handball Schools in Messila) , Journal of sports creativity , volume 5 , number 2 , 2012 , p 187-194 .

- Slifi Halem , and others , Morphological and physiological characteristics of schooled children aged 7-11 years of the Algiers Region , Journal of sciences and techniques of physical activities ,volume 5 , number 2 , 2011 , p 10-12 .