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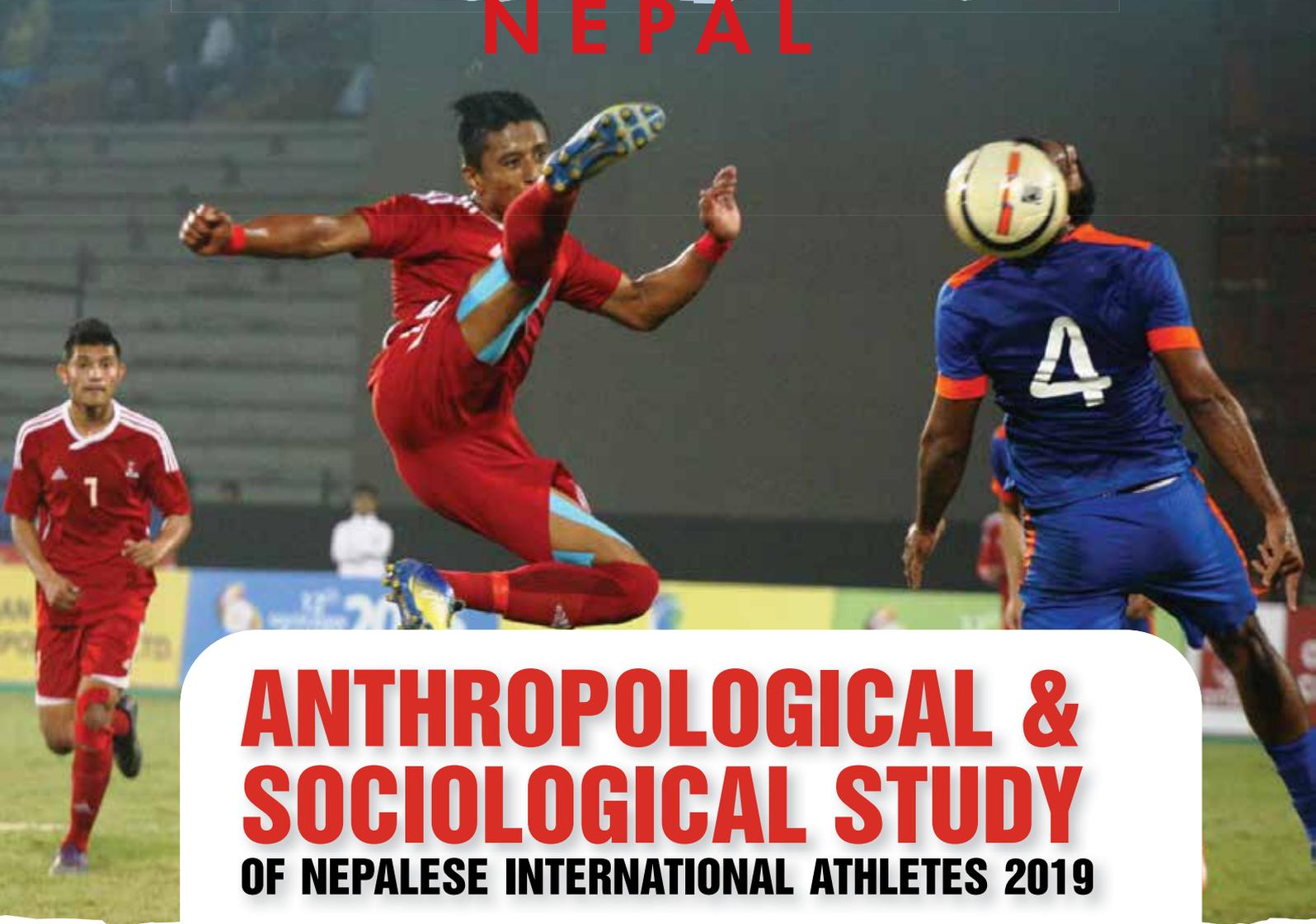
13th
SOUTH ASIAN GAMES - 2019
KATHMANDU-POKHARA-JANAKPUR
1-10 December, 2019

ANTHROPOLOGICAL & SOCIOLOGICAL STUDY
OF NEPALESE INTERNATIONAL ATHLETES 2019

NEPAL OLYMPIC COMMITTEE

ANTHROPOLOGICAL & SOCIOLOGICAL STUDY
OF NEPALESE INTERNATIONAL ATHLETES 2019

Nepal Olympic Committee

FOREWORD

We feel very proud that 13th South Asian Games was successfully held in Kathmandu/Pokhara/ Janakpur, Nepal on December 1-10, 2019. It was a historical moment for us because we clinched 51 Gold Medals and became Second position in Medal Tally of the Games.

We all know that Sport becomes an integral part of the society. It is one of the best tools for the sustainable development & it promotes peace, culture & Education. In every international competition all the participant countries send their best athletes to secure the best position in the International arena. In order to generate the best athletes there would be so many actors who play a vital role. Among them study of the anthropology of the athletes is one of the factors which assists to make an elite athletes.

To help the National Federations, Coaches and other sports organizations in the best possible way, Nepal Olympic Committee organize multiple diverse programmes. In this context, for the first time NOC Nepal have done research to find out the social and economic impact of the sports during the 13th South Asian Games. We believe that the information of the research will be more beneficial to them in order to enhance the performance of the athletes.

We are grateful to all the contributors of this project and special thanks to Mr. Diwkar Lal Amatya & his team for their invaluable contribution to complete the research on Nepalese International Athletes at 13th South Asian Games.

On behalf of Nepal Olympic Committee, I wish to express my appreciation to all the sports personnel who will go through this research and take the benefit for the better performance of the athletes.

Jeevan Ram Shrestha
President

Nepal Olympic Committee

Dear Colleagues / Friends

It is my pleasure to welcome you to this first Sport Research Paper of the Nepal Olympic Committee. I hope that it will be more informative and valuable to all.

I would like to congratulate to Mr. Diwakar Lal Amatya and his team who have accomplished the research on **Anthropological & Sociological Study of International Athletes of Nepa**l.

It is a matter of great pride for NOC to bring the research into publication which provides important information to all the stakeholders & sports fraternity. I am certain that the research paper will serve as a constant guide for the Government, National Federations, Coaches to see the actual situation of our athlete.

This is a first initiation taken by the Nepal Olympic Committee, I believe that these kinds of research should be continued in order to find out the economic and social impact of the sports. Besides that it also helps to know about the current status of the Nepalese athletes and assist to develop the strategic plan for the betterment of the athletes.

I would like to express my sincere appreciation to all the readers and looking forward to the valuable suggestion and positive remarks.

Nilendra Raj Shrestha
Secretary General

Acknowledgment

It is a matter of great privilege for the writer to acknowledge his sincere and heartfelt gratitude to the Nepal Olympic Committee for publishing this unique research report "Anthropological and Sociological Study of Nepalese International Athletes". The writer also feels privileged to acknowledge his profound gratitude to MP and President of Nepal Olympic Committee, Mr. Jeevan Ram Shrestha and General Secretary of NOC, Mr. Nilendra Raj Shrestha for their constant encouragement and motivation for the publication for this book.

The writer would remain thankful to Rita Prajapati, Sulochana Sijakhwa, Rajendra Tuladhar, Bimala Joshi, Kumari Hira Pant from National Sports Council, as well as Subash Neupane, Chandan Koju, Puskar Raj Pant, Ashok Kalathoki, Dilip Adhikari and Monalisha Khamboo, Master in Sports Science (MSS) students, Tribhuvan University, who had assisted in collecting data from various sports athletes. Moreover, the writer would be very thankful to all the athletes and coaches who had helped in the collection of data for this study and acknowledges their kind cooperation from National Sports Council.

Last but not the least, the writer of this book expects that Nepalese sports society and authorities will get new thoughts and directions in the field of sports policy making. Additionally, sports coaching system in Nepal within all level of physical education from school to university will benefit from the findings of this book. Sports research is designed to explain the underlying mechanisms of how athletes function. It gives coaches and athletes a way to gain solid information and apply it to their performance in sports. It helps coaches form beliefs about how to develop programs and coaching techniques. Research and innovation in sports has a significant economic impact through, for example, innovative sports products, events, and facilities. The government should promote sports research to help elite athletes get better results and promote participation in sports.

July, 2020

Diwakar Lal Amatya
(Master in Athletics & Sports Sciences-India)
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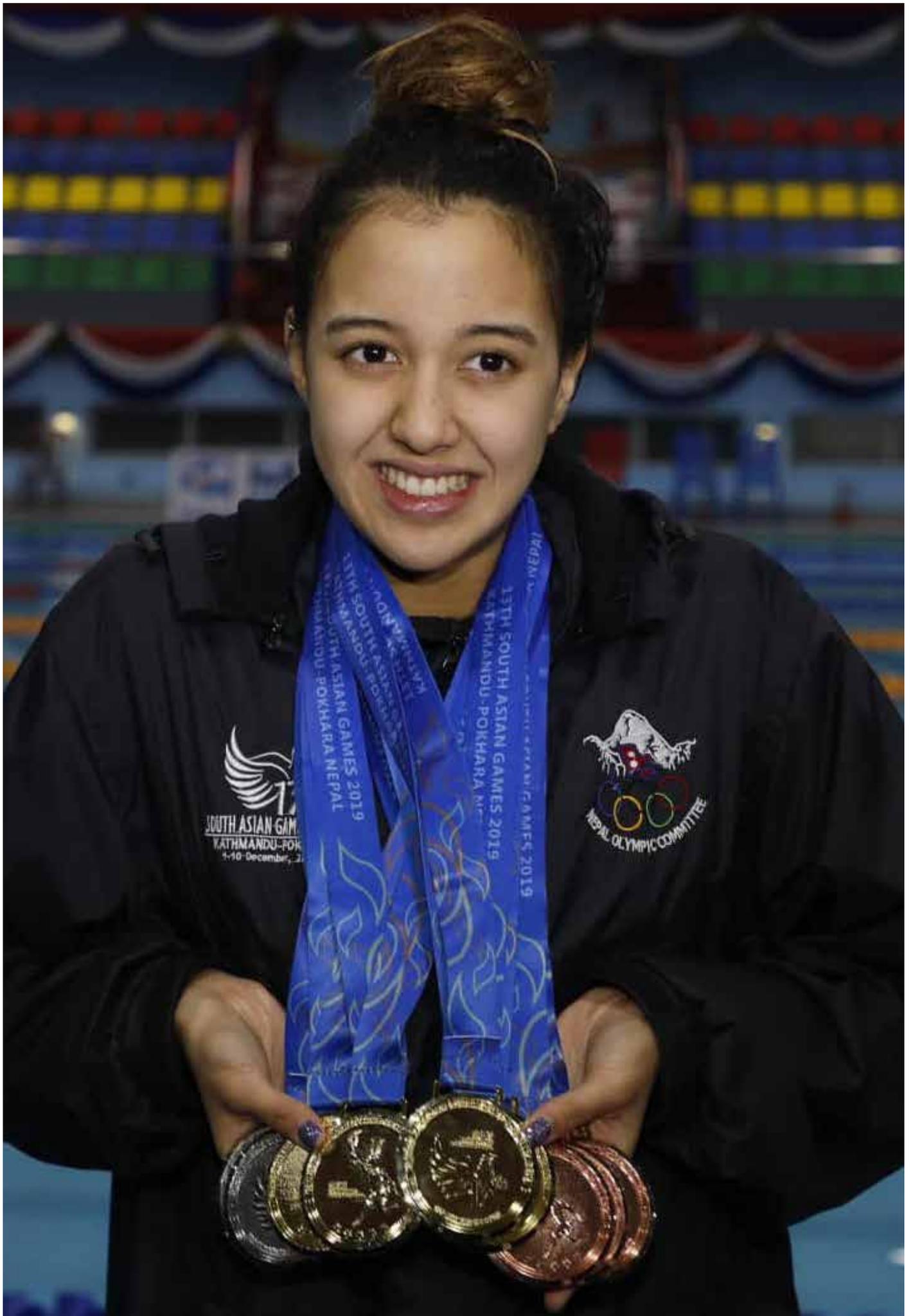President at Nepal Triathlon Association

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1

Introduction

Sports is a major component of everyday life, especially during the youth. Its contribution for the mental and spiritual wellbeing of human beings can be understated. It is played as an enjoyable part of people's leisure and also people play sports to become physically fit and healthy.

Besides, sports has become a part of the educational system in our modern society and therefore it is an important agent of socialization. In Nepal, whether in primary school, college, university, community, or during the religious festivals, sports has become an important element of the youth subculture, for participants and spectators. This gives the assumption that sports gets prominence in the educational system. To a casual observer, sports is a necessary component of the curriculum. But in Nepal as well as in other parts of the world, there is little evidence to support the view that participation in sports contributes directly either to an individual's academic attainment or to achieving the educational goals in school, college, or the university.

It is reported that sports participation has connection with health and academic achievement. Sports participation may improve cognitive health leading to improved academic achievement. Some other factors may also be involved in this regard including parental support and self-esteem. Participation in interscholastic sports can generally help student-athletes perform better academically in comparison with non-athletes. In addition to improving cognitive function, playing sports helps students develop emotional ties with their community and elevates their self-esteem.

Yet people in Nepal don't know that sports participation is good for their children. On one hand, due to exposure to electronic media, children in Nepal are busy watching cartoons and other TV programs. On the other hand, education ministry's policy is the main factor in the lesser-given importance to physical education in the school. Earlier, physical education was one of the main subjects in all levels, from primary to high-school (10th standard/class); but now, it has been reduced at the sideline in the 'optional' section.

There is no need to mention that sports in Nepal has not grown in a professional stage. Sportsmen cannot depend on sports their entire life. Those who are seriously involved in competitive sports in their youth suffer immensely after retirement from active sports. However, a handful of those who belong to the elite class, they don't face such problems as do middle and low-class sportsmen.

It is a well-established notion that when it comes to career transition/retirement from the elite sports, athletes are confronted with a wide range of psychological, interpersonal, and financial adjustments when they end their competitive careers (1). Although questioned, it is believed that voluntary retirement is a positive adjustment factor associated with fewer difficulties in emotional and social adjustment

Lots of educated people in Nepal even thinks that it gives the prominence of sports in the school/college educational system, the casual observer might assume that sport is a necessary component of the curriculum.

after retirement. Conversely, involuntary retirement is a negative adjustment factor associated with difficulties such as emotional tension and distress and increased feelings of anger, failure, and loss (2). Many researchers have described the sport-career transition of professional athletes as a difficult and disruptive process, fraught with conflict and mixed emotions ranging from relief (3) to a crisis (4) resulting from a variety of factors such as age at retirement, lifestyle, income, and ego involvement of individual athletes. A crisis transition takes place when an athlete has to make a special effort to successfully adapt to the new requirements. The inability to adjust creates symptoms of crisis transition such as lowered self-esteem, emotional discomfort (e.g., doubt, anxiety, and fear), increased sensitivity to failure, disorientation to decision-making, and confusion (5).

The inability to adjust creates symptoms of crisis transition such as lowered self-esteem, emotional discomfort (e.g., doubt, anxiety, and fear), increased sensitivity to failure, disorientation to decision-making, and confusion.

There is also strong evidence supporting the fact that sports participation improves pro-social behavior and reduces crime and anti-social behavior, particularly among young men. This includes, for sports participants compared to non-participants, evidence of lower levels of recidivism, drunk driving, and use of illegal drugs, crime and suspensions at school, property crime, shoplifting, and juvenile crime.

Some studies propose that sports achieves several impacts simultaneously making it a highly cost-effective intervention. Many of the links between sports and different social impacts are common, including greater physical competencies, better cognitive skills, better social skills, trust and reciprocity, and identification with social values. These help to counteract risk factors and stimulate a favorable reaction to protective factors (6).

Among Nepalese athletes who participated in the 12th SAG, 17 percent of athletes are underweight having less than 20 BMI. BMI 21 to 25 is considered to be a healthy weight and nearly two-thirds of the athletes are within this range. Again, more than 17 percent of athletes are overweight.

For example: If an athlete or an individual with a lot of muscle has a BMI over 25, is that person still considered an overweight?

According to the BMI weight status categories, anyone with a BMI over 25 is classified as an overweight and anyone with a BMI over 30 is classified as an obese. Nonetheless, BMI is not a direct measure of body fatness and that BMI is calculated from an individual's weight which includes both muscle and fat. Consequently, some individuals may have a high BMI but not have a high percentage of body fat. For example, highly trained athletes may have a high BMI because of increased muscularity rather than increased body fatness. Some people with a BMI in the overweight range (from 25.0 to 29.9) may not have excess body fatness; while, most people with a BMI in the obese range (equal to or greater than 30) will have increased levels of body fatness.

It is also important to note that weight is only one of the many factors associated with causing risk for disease. If a person has queries or concerns pertaining to the appropriateness of his/her weight, s/he should discuss them with a healthcare provider.

What are the health consequences for overweight and obese adults?

The BMI ranges are based on the relationship between body weight and disease and death (6). Overweight and obese individuals are at increased risk of many diseases and health conditions, including the following (7):

- Hypertension
- Dyslipidemia (for example, high LDL cholesterol, low HDL cholesterol, or high levels of triglycerides)
- Type 2 diabetes
- Coronary heart disease
- Stroke
- Gallbladder disease
- Osteoarthritis
- Sleep apnea and respiratory problems
- Some cancers (endometrial, breast, and colon)

The 'sweet-spot' age

Most sports deal with "sweet spot" phenomenon, which relates to the age bracket at which the combination of physical, technical, and strategic abilities comes together. In most sports, the sweet spot age falls between mid-20s to early 30s; however, there have been numerous cases of Olympians competing and sometimes winning medals, over the age of 50. A vast majority of these outstanding sports achievement incidents come from sports requiring exceptional skill and less aerobic or anaerobic power, such as the shooting events, sailing, equestrian, and fencing.

For endurance events, the upper age limit for competing at the sport's highest levels appears to be around the age of 40. Just before his 42nd birthday, Christopher Lee "Chris" Horner, an American cyclist, won the 2013 edition of the Vuelta an Espana, Spain's version of the Tour de France; thereby, making him the oldest winner of a Grand Tour in cycling. 38-year-old Romanian athlete, Constantina Dita Tomescu, was the oldest Olympic marathon champion who competed at the 2008 Beijing Olympic Games. Likewise, at the age of 41 in 2008, Dara Torres, an American swimmer, is the oldest swimmer to compete in the history of the Olympics; nevertheless, to her greatest disappointment, missing the gold medal

in the 50-meter freestyle by hundredths of a second. These examples are, however, mere exceptions. They cannot be regarded as the rules.

Age changes how our bodies use oxygen

It is a fact well known that there is a steel decline in aerobic (or endurance) athletic performance with age as our bodies can't use oxygen as effectively as in the prime age. The maximal ability to utilize oxygen (VO2max) is a predictor of endurance performance across ages. VO2max is a numerical value that describes how much oxygen our body can use per kilogram of body weight. Interestingly, VO2max is affected by how well our body can bring oxygen into the lungs, how well this is carried in our blood to the working muscles, and how much oxygen the muscles can use to fuel contraction.

Exercise can be a real game-changer and higher the VO2max, the more "aerobically fit" a person is. In other words, athletes can do more endurance work for their body weight. VO2max is likely to decline by almost 10% per decade after the age of 30 in the general population. Surprisingly, athletes who keep competing and training hard can decrease the drop by about half, to 5% per decade after the age of 30.

It is important to consider that the reason VO2max drops with age is because our maximal heart rates go down as well. Maximal heart rate is the highest heart rate in beats per minute one can achieve during the increasing intensity of endurance exercise. Often it is predicted as "220 – age = maximal heart rate." The actual maximal heart rate for a given person is highly variable, as we age; however, our maximal heart rate decreases, even if we are a healthy athlete or an idler.

Even if oxygen delivery to muscles decreases, the ability of our muscles to utilize the oxygen they do get relative to a given workload (this is called exercise economy) efficiently is well maintained into our 60s and 70s even if total muscle mass is likely to drop as we age and can contribute to a decline in performance as well.

Furthermore, as we age, this decrease reduces both cardiac output and oxygen delivery to the muscles which results to a lower VO2max and thus to lower performance in endurance events. Even if oxygen delivery to muscles decreases, the ability of our muscles to utilize the oxygen they do get relative to a given workload (this is called exercise economy) efficiently is well maintained into our 60s and 70s even if total muscle

mass is likely to drop as we age and can contribute to a decline in performance as well.

In the case of competitive endurance exercise, it has been witnessed that rowers show the least decline in VO2max with age, but the difference to other sports isn't huge. This might be credited to the fact that rowing is a lower-impact sport than cycling (with crashes) and running (constant pounding) (7).

02 | MATERIALS AND METHODS

2

Materials and Methods

The data for this study has been collected from 520 athletes (255 men and 265 women) from 24 sports disciplines, who participated in the 13th South Asian Games- held in Kathmandu, Pokhara and Janakpur (Nepal). Their educational background has been taken and for the calculation statistical measures such as mean, standard deviation, maximum, minimum different figures and tools were used. For the analysis purpose, Class one has been given one point and for the master's degree 18 points had been given.

Besides these, athletes' Height, Body Weight, BMI, and other Socio-economic status and their professional degree data have been collected. Decimal Age was calculated on the starting day of the 13th South Asian Games. For the presentation data, Table and Bar diagram were used. Education level or academic qualification was calculated class 1 and was given one point and Master's Degree was given 18 points. In this way, the average education level was calculated.

Besides these, athletes' Height, Body Weight, BMI, and other Socio-economic status and their professional degree data have been collected.
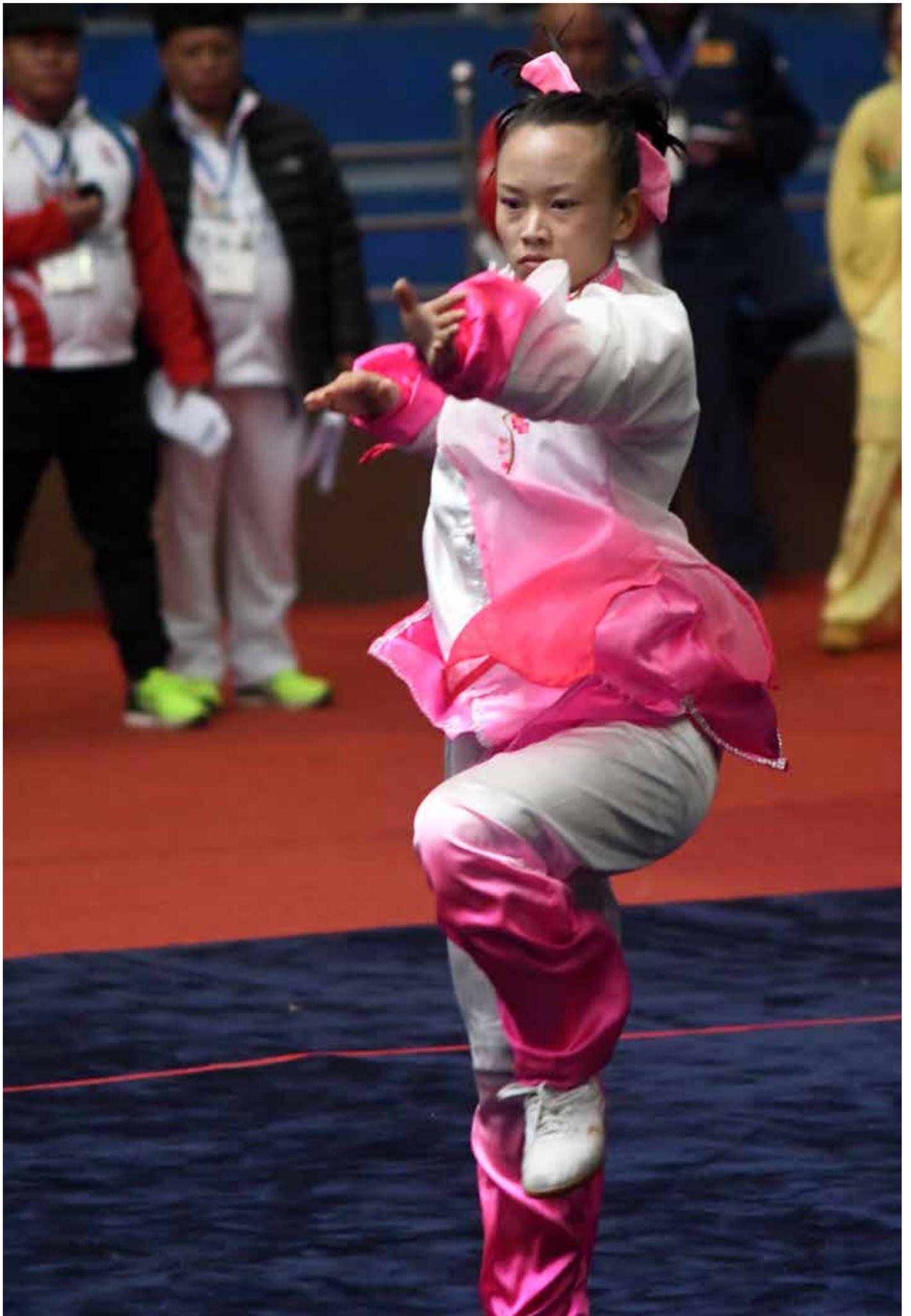
03 | ANTHROPOMETRICAL STATUS OF NEPALESE INTERNATIONAL ATHLETES

3

Anthropometrical Status of Nepalese International Athletes

Kinanthropometry has developed into an important tool in the hands of physical educationists and sports scientists to study the size, shape, and body composition of sportspersons in relation to their performance. Kinanthropometry engages at the ground level in the identification of a sportsperson.

The Investigator is continuously doing a survey on National Team Athletes on various parameters like their physique, their fitness status, anthropometric studies. Scientific studies on National Athletes are still in the cradle stage in Nepal. Altogether data of 520 athletes (men-255, women-265) was collected out of the total athletes who participated in the 13th South Asian Games held in Kathmandu, Pokhara, and Janakpur.

Scientific studies on National Athletes are still in the cradle stage in Nepal.

TABLE-1	**Nepalese International Athlete's Decimal Age Status-Men**					
S.N.	SPORTS	N	MEAN	STD	MAX.	MIN.
1	Chess	16	40.21	12.55	61.95	16.55
2	Wushu	11	37.73	4.20	42.28	29.46
3	Bodybuilding	7	36.33	5.04	42.25	31.19
4	Shooting	5	35.27	4.67	41.19	28.52
5	Archery	7	33.25	9.26	48.34	26.04
6	Handball	16	29.83	6.43	42.08	17.34
7	Judo	10	29.21	4.79	35.61	20.61
8	Athletics	27	29.15	5.20	36.81	18.88
9	Boxing	14	29.09	4.14	36.54	21.39
10	Fencing	10	28.14	4.60	36.59	22.57
11	Wrestling	6	28.10	5.74	36.17	19.44
12	Table Tennis	5	27.27	10.29	41.10	15.93
13	Triathlon	5	26.72	3.74	29.58	20.21
14	Karate	3	26.99	2.85	29.05	32.73
15	Volleyball	22	26.66	4.10	37.37	19.91
16	Tennis	7	26.53	8.00	37.76	17.48
17	Weightlifting	10	26.45	7.18	42.28	18.07
18	Kabaddi	11	25.90	5.78	35.61	18.37
19	Taekwondo	17	24.00	4.98	34.27	17.49
20	Kho-Kho	15	23.49	5.00	33.55	17.28
21	Badminton	7	23.17	6.40	34.92	15.45
22	Squash	3	20.11	2.70	23.19	18.18
23	Swimming	16	17.13	4.78	32.12	13.56

In the men's section, on average, the most matured athletes were from men Chess Players with an average decimal age 40.21 years (± 12.55) and they were followed by Wushu, Bodybuilding and Shooting players with an average of 37.73 (± 4.2) years, 36.33 (±5.04) years and 35.27 (± 4.67) years respectively. On the youngest side, men Squash and swimming players came with an average age of 20.11 years (± 2.7) and 17.13 (± 4.78) years respectively. Out of all the 255 male athletes, the average decimal age is 28.52 years (± 8.04) and the age range is 13.56 to 61.95 decimal age.

TABLE-2	Nepalese International Athlete's Decimal Age Status-Women					
S.N.	SPORTS	N	MEAN	STD	MAX.	MIN.
1	Bodybuilding	4	36.32	4.30	40.19	31.84
2	Weightlifting	10	29.39	6.41	39.66	19.99
3	Athletics	27	29.15	5.20	36.81	18.88
4	Boxing	11	28.08	3.74	35.32	23.43
5	Karate	5	27.24	3.39	33.01	25.11
6	Archery	7	27.17	5.73	36.86	21.01
7	Volleyball	22	26.66	4.10	37.37	19.91
8	Table Tennis	4	25.43	4.33	29.76	19.90
9	Shooting	5	25.07	6.05	33.51	19.16
10	Triathlon	5	24.83	9.51	40.27	14.52
11	Wushu	10	24.57	4.54	30.20	16.50
12	Handball	15	24.33	4.01	31.84	16.87
13	Taekwondo	17	24.32	5.02	38.18	17.69
14	Fencing	12	24.22	3.50	28.77	14.84
15	Football	20	24.01	3.70	29.72	17.87
16	Kabaddi	13	23.97	4.75	32.45	17.06
17	Judo	10	23.93	4.16	32.42	17.91
18	Basketball	13	23.37	4.03	30.02	17.80
19	Badminton	7	22.35	7.55	37.35	14.12
20	Chess	12	21.75	6.24	35.02	13.54
21	Kho-Kho	15	20.30	3.21	26.01	16.03
22	Squash	4	20.04	2.50	25.20	19.13
23	Wrestling	7	18.56	3.95	26.57	14.42
24	Tennis	5	16.23	1.13	17.89	14.79
25	Swimming	16	15.23	1.56	17.50	13.22

It is surprising to notice that more than 60 percent of female athletes 20 to 30 years of age category. More than 17.25 percentage male athletes did participate in these games who are more than 35 years.

In the women's section, the most matured athletes were from men Bodybuilding Players with an average decimal age 36.32 years (± 4.30) and they were followed by Weightlifting, Athletics and Boxing players with an average of 29.39 (± 4.2) years, 29.15 (±5.20) years and 28.08 (± 3.74) years respectively. On the youngest side, men Tennis and swimming players came with an average age of 16.23 (± 1.13) and 15.23 (± 1.56) years. Out of all the 265 female athletes, average decimal age is 23.6 years (± 5.5) and the age range is 13.2 to 40.3 years

In the above table, we can have different glimpses of male and female age category players. Out of 255 male athletes, only 17.25 percentage athletes are below 20 years whereas it is surprising to note 27.55 percentage (73 female athletes) athletes did participate in South Asian Games. Similarly, 40 percent of male athletes fall under 20 to 30 years of age category. It is surprising to notice that more than 60 percent of female athletes 20 to 30 years of age category. More than 17.25 percentage male athletes did participate in these games who are more than 35 years. Whereas in the female section, just 10.57 percentage of athletes (27 athletes) falls in more than 30 years. This shows that more male athletes do continue even after 30 years.

Extra-Curricular Activities in School

A Research was conducted by UNESCO Office in Kathmandu in 2013 in title "**Gender, Jobs and Education: Prospects and Realities in Nepal**". Competitions are organized at the Resource Center level and the district levels as well. A variety of activities including indoor and outdoor games, dancing, oratory competitions, art and craft making and debates are organized. Students participate in different activities according to their interests. Teachers are also involved in selecting students for activities on the basis of students' aptitudes

TABLE-3	Age Categories of Nepalese Athletes			
Age Category	**Male Athletes**		**Female Athletes**	
	N	**%**	**N**	**%**
< 20 years	44	17.25	73	27.55
20 - 24.99	49	19.22	94	35.47
25 - 29.99	53	20.78	70	26.42
30 - 34.99	65	25.49	17	6.42
> 35 years	44	17.25	11	4.15
Total	**255**	**100.00**	**265**	**100.00**

and skills. However, the survey with head teachers, male teachers, and female teachers revealed that in schools, irrespective of gender ECA places more emphasis on academic and/or mental activities such as quiz contests, debate/oratory competitions and dictation (see Table below). It can be assumed that school employees find quiz contests and elocution more convenient to organize as these activities do not require any additional human or material inputs.

TABLE-4	Games selected by male and female students as reported by Head teachers and Teachers	
Games	**Male Student**	**Female Students**
Athletics	28	18
Basketball	4	2
Cricket	17	0
Football	42	3
Skipping	1	2
Table Tennis	6	6
Volleyball	40	12

When viewed from a gender lens, a clear distinction is seen in ECAs that boys and girls participate in. Responses from all three groups of teachers revealed that girls generally participate in singing, dancing, and literature in addition to quizzes and debates; whereas, boys mostly participate in volleyball, football, cricket, and athletics in addition to quiz contests.

Reasons that were given by the respondents (from head teachers, female teachers, and male teachers) for the selection of certain extracurricular activities over others follow stereotypical norms of femininity and masculinity (8).

According to Sport England, nearly 55% of 16-to-25 year olds take part in at least one sport session a week, compared to only 32% of older adults (26 plus). This underscores the fact that participation in sports tends to decrease with age (9).

S.N.	SPORTS	#		MEAN	±	MAX	MIN
1	Kabaddi	11	Height (m)	1.75	0.07	1.83	1.6
			Weight (Kg)	75.18	7.51	84.0	62.0
2	Swimming	16	Height (m)	1.70	0.8	1.83	1.53
			Weightt (Kg)	61.69	7.96	75.0	44
3	Archery	7	Height (m)	1.69	0.05	1.78	1.65
			Weight (Kg)	68.86	6.62	78.0	59
4	Badminton	7	Height (m)	1.71	0.03	1.76	1.67
			Weight (Kg)	64.71	5.22	74.0	59
5	Judo	10	Height (m)	1.72	0.09	1.88	1.57
			Weight (Kg)	85.2	23.39	140.0	60
6	Wrestling	6	Height (m)	1.70	0.03	1.75	1.67
			Weight (Kg)	72.67	13.41	92.0	60
7	Handball	16	Height (m)	1.75	0.04	1.82	1.67
			Weight (Kg)	74.56	7.69	86.0	61
8	Kho-Kho	15	Height (m)	1.66	0.12	2.03	1.55
			Weight (Kg)	59.40	6.05	73.0	52
9	Athletics	27	Height (m)	1.72	0.06	1.85	1.63
			Weight(Kg)	65.33	9.67	95.0	52
10	Volleyball	22	Height (m)	1.85	0.11	2.13	1.65
			Weight (Kg)	73.68	7.09	85.0	55
11	Taekwondo	17	Height (m)	1.72	0.07	1.93	1.63
			Weight (Kg)	66.88	9.16	85.0	54
12	Fencing	10	Height (m)	1.66	0.03	1.70	1.6
			Weight (Kg)	63.60	8.33	80.0	50
13	Boxing	14	Height (m)	1.71	0.12	1.93	1.41
			Weight (Kg)	71.64	16.26	105.0	52
14	Weightlifting	10	Height (m)	1.70	0.1	1.91	1.57
			Weight (Kg)	87.6	30.51	1.59	56
15	Shooting	5	Height (m)	1.67	0.09	1.75	1.55
			Weight (Kg)	65.6	4.98	70.0	58
16	Tennis	7	Height (m)	1.73	0.06	1.80	1.65
			Weight (Kg)	70.86	10.9	84.0	50
17	Wushu	11	Height (m)	1.68	0.06	1.78	1.6
			Weight (Kg)	64.73	9.59	84.0	55
18	Triathlon	5	Height (m)	1.72	0.06	1.80	1.63
			Weight (Kg)	58.80	5.26	65.0	54
19	Chess	16	Height (m)	1.69	0.09	1.88	1.55
			Weight (Kg)	68.81	7.75	82.0	55
20	Table Tennis	5	Height (m)	1.73	0.03	1.75	1.7
			Weight (Kg)	69.8	6.57	78.0	60
21	Body Building	7	Height (m)	1.67	0.06	1.78	1.57
			Weight(Kg)	75.42	8.02	85.0	65

TABLE-5 Anthropometric Characteristics of Nepali Male Athletes

The average height of the 255 Nepalese male athletes was 1.71 meters (0.07) and their height range was 20.3 meters and 1.41 meters. Naturally, Nepalese Volleyball players are the tallest with a height of 1.85 m (± 1.0) and they were followed by Kabaddi players with an average height of 1.75 m (±0.07). On the heaviness, Weightlifters were the heaviest athletes with average weight of 87.6 kg (± 30.51) followed by Body Building players with an average body weight of 75.42 kg (±8.02) and the lightest players were the Triathletes with an average weight of 58.80 kg.

Tall players are usually preferred in volleyball because it would be easier for them to attack or block the ball. However, shorter players usually have faster reaction times during defense and can pass the ball better. Therefore, since this game is a mixture of speed, skill, and tactics, a typical team consists of players of varying height to cater to the specific roles required. The introduction of the libero since 1998 has developed the need for agile and quick-moving players who are usually of shorter stature. In professional volleyball, the men's height generally falls between 1.85 m (6 ft 1 in) to 2.10 m (6 ft. 10 1/2 in), while for women it ranges between 1.70 m (5 ft 7 in) and 1.95 m (6 ft 5 in). Thus, most of them are above average height (10).

TABLE-6	Anthropometric Characteristics of Nepali Female Athletes						
S.N.	SPORTS	#		MEAN	±	MAX	MIN
1	Kabaddi	13	Height(m)	1.63	0.04	1.73	1.55
			Weight(Kg)	64.38	6.76	74.0	56
2	Swimming	13	Height(m)	1.64	0.05	1.70	1.55
			Weight(Kg)	52.92	4.94	60.0	44
3	Football	20	Height(m)	1.58	0.05	1.67	1.47
			Weight(Kg)	52.15	4.49	60.0	44
4	Archery	7	Height(m)	1.6	0.03	1.63	1.55
			Weight(Kg)	62.57	7.18	71.0	50
5	Badminton	7	Height(m)	1.59	0.05	1.66	1.55
			Weight(Kg)	60.00	13.28	89.0	51
6	Judo	10	Height(m)	1.61	0.06	1.75	1.55
			Weight(Kg)	66.00	15.84	92.0	46
7	Wrestling	7	Height(m)	1.6	0.04	1.65	1.55
			Weight(Kg)	57.71	5.99	68.0	50
8	Handball	17	Height(m)	1.65	0.09	1.96	1.54
			Weight(Kg)	62.27	9.81	87.0	48.0
9	Kho-Kho	15	Height(m)	1.58	0.05	1.65	1.52
			Weight(Kg)	47.87	4.12	56.0	40
10	Athletics	20	Height(m)	1.59	0.04	1.67	1.5
			Weight(Kg)	52.05	9.27	80.0	44
11	Volleyball	18	Height(m)	1.70	0.09	1.85	1.5
			Weight(Kg)	61.50	8.27	78.0	41
12	Taekwondo	17	Height(m)	1.62	0.07	1.75	1.50
			Weight(Kg)	57.41	11.29	90.0	45.0
13	Fencing	12	Height(m)	1.60	0.03	1.65	1.55
			Weight(Kg)	53.42	4.06	60.00	46.0
14	Boxing	11	Height(m)	1.60	0.04	1.67	1.52
			Weight(Kg)	56.82	7.52	70.0	48.0

	Sport						
15	Weightlifting	10	Height(m)	1.58	0.05	1.67	1.50
			Weight(Kg)	66.70	0.04	1.63	1.55
16	Shooting	4	Height(m)	1.60	6.05	1.65	1.55
			Weight(Kg)	54.50	5.26	59.0	47.0
17	Tennis	5	Height(m)	1.62	0.05	1.65	1.53
			Weight(Kg)	54.8	5.59	62.0	48.0
18	Wushu	10	Height(m)	1.59	0.04	1.65	1.55
			Weight(Kg)	59.1	8.09	75.0	50.0
19	Triathlon	5	Height(m)	1.55	0.08	1.65	1.45
			Weight(Kg)	51.00	2.24	54.00	48.00
20	Chess	12	Height(m)	1.55	0.04	1.63	1.50
			Weight(Kg)	56.92	11.57	80.0	43.0
21	Table Tennis	4	Height(m)	1.60	0.04	1.65	1.53
			Weight(Kg)	59.5	10.15	67.0	45.0
21	Body Building	4	Height(m)	1.62	0.06	1.7.0	1.57
			Weight(Kg)	68.28	15.37	90.0	54.0
22	Basketball	16	Height(m)	1.67	0.08	1.80	1.50
			Weight(Kg)	62.06	6.14	72.0	51.0
23	Squash	4	Height(m)	1.57	0.0	1.63	1.53
			Weight(Kg)	50.00	4.4	55.0	45.0
24	Karate	5	Height(m)	1.55	0.03	1.60	1.53
			Weight(Kg)	50.80	5.76	60.0	45.0

The average height of the 265 Nepalese female athletes was 1.60 meters tall (± 0.10) and their height range was 2.03 meters and 1.50 meters. On the heaviness, Bodybuilder's average weight was 68.28 Kg (±15.37) and the lightest players were the Squash players with an average weight of 50.00 Kg. Height, body weight, and muscle mass are big problems in most of the Nepalese sports.

When we look at swimming, it has been stated that since the 1904 Games, the average height of the Olympic 100m freestyle champion has significantly increased. In 1988, an American swimmer, Matt Biondi was at 2.01 m (6 ft 7 in) when he was announced the winner. Something worth to note is that since then all winners have been 1.93 m (6 ft 4 in) or taller. This change in the height has been in line with the change in height since the early Olympic Games. The heaviest was the 2012 winner Nathan Adrian at 103 kg.

In tennis, it is amazing to witness the champions, the supposedly 'old players' defying the notion that skills get rusted when you hit a certain age. Venus Williams, Rafael Nadal and, most importantly, Roger Federer have proved the critics wrong time and again by winning grand slams. It has been observed that tennis players on average have been getting older in the past several years. In 2016, men's Grand Slam tournaments had an average age of 27.7 years, thereby writing new chapter in the history of tennis. One of the most celebrated names in the history of tennis, Novak Djokovic, who won the French and Australian opens and went to the final of the U.S. Open, turned 29 last May (11).

Average male athletes' height was 1.71 meters (± 0.07) ranging from 2.03 meters to 1.41 m. 84.51% athletes belonged in the height range of 1.53 (5 feet) meters and below 1.83 meters (6 feet). On the female side, more than 80% athletes were 1.53 meters to below 1.676 meters (below 5 feet 6 inches).

Sport Specific Height and Body Weight

Every athlete wants to get in the best shape possible. The appropriate height-to-weight ratio for the general population is not the same as for the athletes. The type of sport you represent dictates how extra kilo affects your performance. The yardstick is not the same for all.

For example, lean and slight marathoners pale in comparison to tall and muscular sprinters, yet each athlete is the proper size for his/her event. Nature, diet and training play a significant part in deciding what sport you excel at. Shot-put champions are typically tall and large. High-jumping competitors are usually tall, lean, and have short torsos and very long legs—attributes, categorically, required by the sport.

After all said and done, no athlete can perform athletic feat if they do not have the fuel reserves to keep them moving. Gil Reyes, the long-time trainer of tennis sensation Andre Agassi, revealed to New York Times that Agassi had trouble finding the ideal competition weight. Dieting is problematic for athletes because insufficient fuel gets in the way of performance. Working out longer and harder is better than reducing food intake, Reyes had suggested in the interview. Compared to long-distance runners, successful long-distance swimmers have higher fat levels. The exact mechanism that causes swimmers to accumulate and store more fat is debatable, but cold-water swimmers benefit from some extra insulation, according to a 2007 article in "Swimmer" magazine (12).

TABLE-7	Height Category of Nepalese Athletes			
Height of Athletes	**Men**		**Women**	
(Table-6)	**N**	**%**	**N**	**%**
< 5feet (152.4cm)	1	0.39	13	4.91
5 - 5.6feet (152.4cm-167.6cm)	98	38.43	213	80.38
5.6 - < 6 feet(167.6cm -182.9cm)	143	56.08	37	13.96
6 feet > (182.9)	13	5.10	2	0.75
Total	255	100.00	265	100.00

When it comes to basketball, it is said that the closer a person is to the basketball goal in height, the more accurate the shot can be and the less force you must apply to propel the basketball into the basket. That's why almost all basketball players are tall. Being taller helps you reach to the goal when playing offensive positions.

TABLE-8	Body Weight Category of Nepalese Athletes			
Body Weight (Kg)	**Men**		**Women**	
(Table-8)	**N**	**%**	**N**	**%**
Below 50	3	1.18	55	20.75
50-60	61	23.92	118	44.53
60-70	98	38.43	58	21.89
70 - 80	55	21.57	18	6.79
80 - 90	26	10.20	16	6.04
Above 90	12	4.71		
Total	255	100.00	265	100.00

The average body weight of the men athletes was 68.52 kg (±13.04) ranging from 159.00 kg to 44.00 kg. Only 3 male athletes (1.18 %) were below 50 kg; whereas, 55 female (20.75%) athletes were below 50 kg body weight. 61.41 % of male athletes were within 50 to 70 kg zone and more than two-third females (65.42 %) belonged in the same bodyweight.

According to studies, seven percent (7%) body fat has been established by many medical authorities as to the safe, minimal percent body fat for high school wrestlers. Body fat testing is the only scientific method of predicting a safe, minimal wrestling weight. By losing weight too quickly, or going below 7% body fat, a wrestler risks losing muscle along with fat resulting in decreased muscular endurance and strength. Studies show that not every wrestler can, or should, attempt to reach 7% body fat. If a wrestler is above 7% body fat, evidence does not show that wrestling performance will improve simply by losing weight.

Exercise professor and Coach Dr. Todd Miller researched on various athletes at Penn State University to prove how an increase in body fat affects the athletic performance. In his research, he noticed that athletic performance tends to decrease throughout the season as body fat % in Penn State athletes increased {4lb increase in fat (2.9% of body mass) and a 6lb loss in the muscle (4.4% of body mass)}. The research also showed that athletic performance decreased throughout the season with a decrease in the overall training volume and increased sports-specific preparation for competitions.

Similarly in his next research, Dr. Todd tested 170lb athletes and made them wear 3.4lb (or 2% body fat) vests and made them complete some power tests (vertical jumps, sprints). For a 170 lb. athlete, a fat gain of 3.4 lbs. (2%) resulted in a vertical jump height loss of 2 inches (5 cm) and a 40-yard sprint (37 meters) increase in time of 0.26 seconds.

Increased athletic performance and muscle gain don't always go together. In other words, putting on muscle doesn't always result into better performance. Though, in some sports like weight lifting and powerlifting where pure strength is the most important aspect, putting on muscles will usually improve performance.

Not to forget, the problem is that extra muscle also increases body weight, which may not always be beneficial. In general, adding 5kgs of muscle will offset the inconvenience of adding 5 kgs of extra weight. The goal, however, is to gain muscle while improving performance. To avoid gaining excess body fat, the ideal weight/muscle gain can occur at a rate of one pound (0.45 kgs) every two weeks for males and ~1/2LB for females (13).

Physical performance can be assessed by muscle strength, balance ability, and mobility. Several studies have reported that higher BMI is associated with reduced levels of physical performance. Reduced nonessential body fat contributes to muscular and cardiorespiratory endurance, speed, and agility development. Additional weight, in the form of nonessential fat, provides greater resistance to athletic motion which forces the athlete to increase the muscle force of contraction per given workload.

According to the BMI weight status categories, anyone with a BMI over 25 is classified as overweight and anyone with a BMI over 30 is classified as obese. The above table shows that only 9.02% male athletes were shown in the underweight category. In the women section, 23.02% athletes were having less than 20 BMI. On the positive side, 67.45% male and 59.62% female athletes were found in the 20 to 25 BMI category which is considered to be a healthy category. Nearly 5% of both male (4.71%) and female (4.91%) athletes were obese.

Every athlete wants to get in the best shape possible. The appropriate height-to-weight ratio for the general population is not the same as for the athletes. The type of sport you represent dictates how extra kilo affects your performance. The yardstick is not the same for all.

TABLE-9	BMI of Nepalese Athletes during SAG (2019)			
BMI Calculation (Table-9)	Men		Women	
	Number Athletes	%	Number Athletes	%
< 20	23	9.02	61	23.02
20 - 25	172	67.45	158	59.62
25 - 30	48	18.82	33	12.45
> 30	12	4.71	13	4.91
	255	100	265	100

04 | MARITAL AND FAMILY STATUS OF NEPALESE ATHLETES

4
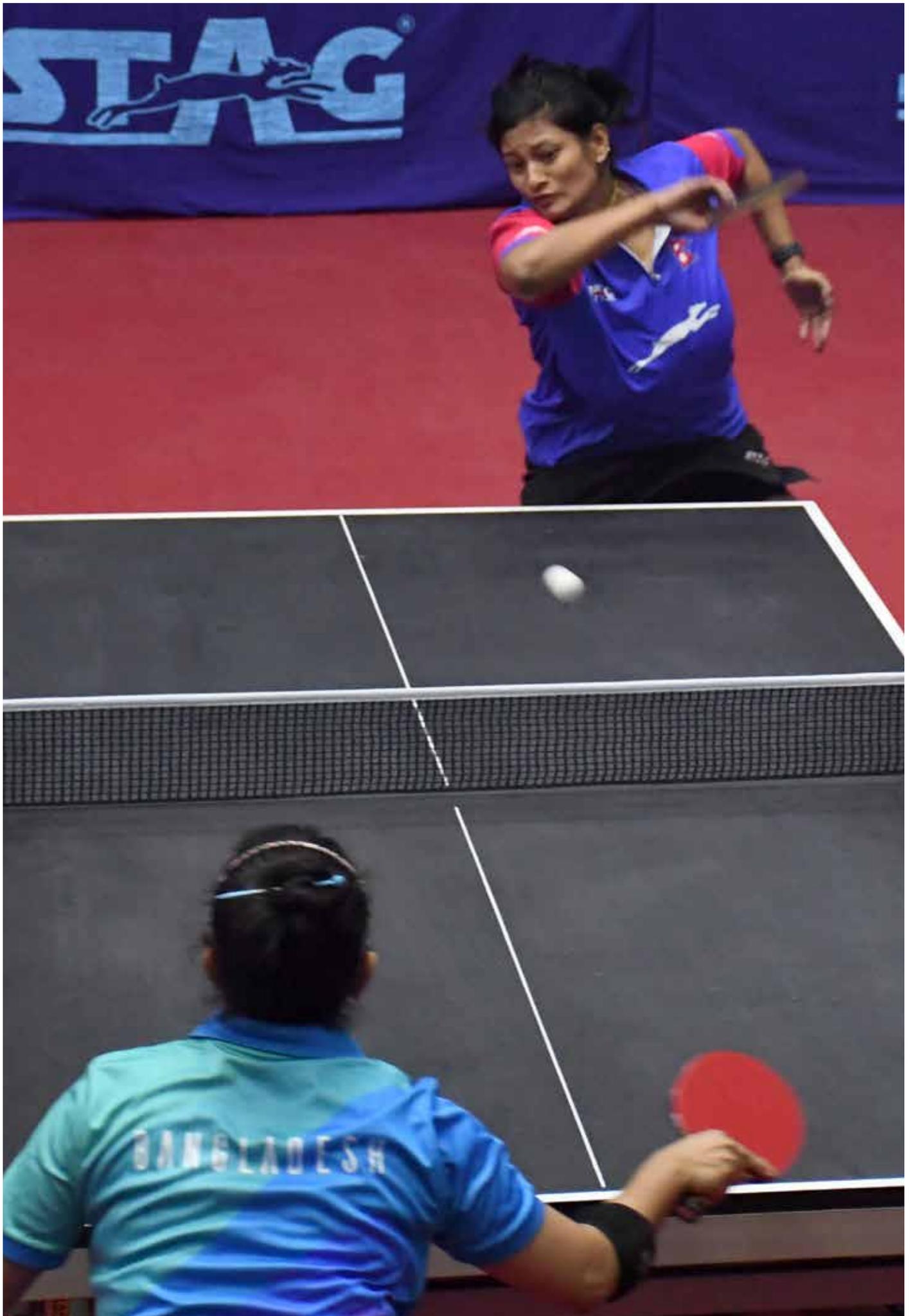
Marital and Family Status of Nepalese Athletes

Sport performers are surrounded by a network of people such as parents, friends, coaches, and relationship partners. The qualities of the relationships partners. The qualities of the relationships athletes develop in and out of sport are important because they may positively or negatively impact athletes' performance success and overall well-being (14).

FIGURE-1 | **Marital Status of Female Athletes**
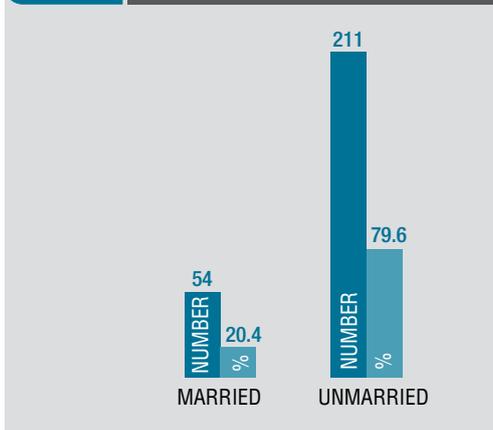
Out of 265 female athletes only 54 athletes are married (20.4 %) and nearly 80 percentage athletes are unmarried. Where

FIGURE-2 | **Marital Status of Male Athletes**
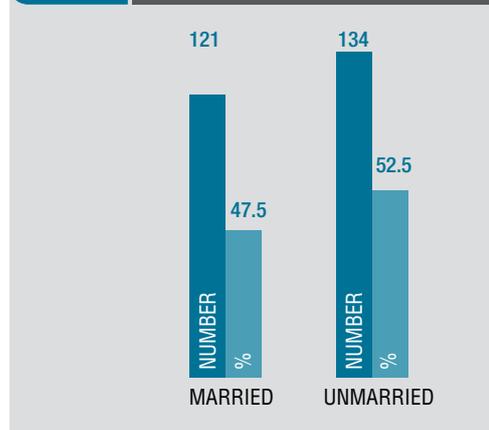
as in the male section 47.45 percentage athletes are married and rest of are unmarried.

The qualities of the relationships athletes develop in and out of sport are important because they may positively or negatively impact athletes' performance success and overall well-being.

TABLE-10 | **Family Structure of Male and Female Athletes**

	N	%		N	%
One Son	32	26.4	One Son	13	24.1
Two Sons	8	6.6	One Daughter	12	22.2
One Daughter	13	10.7	No Son or Daughter	29	53.7
Two Daughters	7	5.8	Total	54	100
Sun & Daughter Both	32	26.4			
No Son or Daughter	29	24.0			
Total	121	100.0			

Out of 121 married male athletes, 24.0 % don't have their offspring which means they are not having either son or daughter. 26.4 percent of male athletes are having only one son. 26.4 percent of male athletes are having one son and one daughter. The picture is different on the female side. More than half of the female athletes (53.7 %) don't have either son or daughter. Thirteen female athletes are having one son and 12 athletes are having one daughter.

TABLE-11	Average Sports Training Age of Nepalese Athletes	
	Men	**Women**
Mean	8.9	7.1
SD	4.7	3.9
MAX.	22.0	19.0
Min.	2.0	1.0

One big reason we see declines in aerobic (or endurance) athletic performance with age is that our bodies can't use oxygen as effectively. ... Exercise can improve all of these, and the higher the VO2max, the more "aerobically fit" a person is. That is, they can do more endurance work for their body weight. During anaerobic exercise enzymes that are needed to breakdown carbohydrate for fuel for energy declines as we get older making hard efforts harder the older we are. As we get older or blood volume declines resulting in our heart rate increasing much quicker when we exercise

05 | ECONOMIC STATUS OF NEPALESE ATHLETES

5

Economic Status of Nepalese Athletes

Nepal is heavily dependent on remittances, which amount to as much as 30% of GDP. Agriculture is the mainstay of the economy, providing a livelihood for almost two-thirds of the population but accounting for less than a third of GDP.

TABLE-12	Athlete's Average Spending for one Month Training	
	Men	**Women**
Average	17,085.32	15,692.3
SD	7,785.58	7,789.10
Max	30,000.00	35,000.00
Min	5000.00	2000.00

Nothing comes freely in this world. Different sports training cost will be differ according to nature of the sports. Travel to the sports training center, fuel cost, sport drink, diet, medical, water and sports kit cost and many unseen cost will be there for every athletes. Cost for sports training will differ by countries around world.

Above table shows how Nepalese athletes are spending per-month. Average Nepali male athletes are spending more than 17 thousand Rupees per-month (± 7785.58) ranging from 30 thousand to Rs. 5000 and on the female side they are spending nearly 16 thousand rupees (± 7,789) ranging from 35 thousand to Rs. 2000.

TABLE-13	Who is spending the Cost for Sports Training?			
	Male		**Female**	
	#	**%**	**#**	**%**
Athletes Own Salary	185	72.5	106	40.0
Dependent on Parents	70	27.5	159	60.0
Total	255	100.0	265	100.0

Nepalese sports society certainly differs from a different country around the world in terms of sports systems, sports culture, and competition systems. There are mainly two types of athletes in Nepal. Type one is athletes from Force (Nepal Army, Nepal Police and Armed Police Force) means they are having a job and public athletes (Student) who don't have a job. From the above table, it is clear that 72.5 percent of male athletes are bearing the cost for training from their salary and 27.5 percent of athletes are dependent on their parents. The situation is not good for female athletes. Only 40 percent of athletes are bearing from their income or salary and 60 percent of athletes are dependent on their parents for sports training costs.

Nothing comes freely in this world. Different sports training cost will be differ according to nature of the sports. Travel to the sports training center, fuel cost, sport drink, diet, medical, water and sports kit cost and many unseen cost will be there for every athletes.

TABLE-14	Male and Female Athletes' Average saving in one month	
	Male	**Female**
Average	**6,983.78**	**5,660.4**
SD	4,059.98	3,352.4
Max	15,000.00	15,000.00
Min	3,000.00	3,000.00
No Saving		
Number	77	107
%	**30.2**	**40.4**

TABLE-15	How Nepalese Athletes are taken by their parents Towards Sports Participation			
	Male		**Female**	
	#	**%**	**#**	**%**
Fully Support	70	27.5	109	41.3
Support	129	50.6	114	43.2
Neutral	33	12.9	14	5.3
Disagree	16	6.3	16	6.1
Strongly Disagree	3	1.2	0	0.0
Not Mentioned	4	1.6	11	4.2
Total	**255**	**100.0**	**264**	**100.0**

Nepalese Male athletes are saving around 7000 rupees (57 US$) per month (±4,059.98) ranging from 15,000 rupees to 3000 rupees per month. On the other side Nepalese female athletes save rupees 5,660.4 (47 US$) ranging from 15,000 rupees to 3000 rupees per month. 30.2 percentage male athletes don't have any savings and 40.4 percentages female have no savings.

Female Athletes who are participating in SAG games getting more full support (41.3 %) in comparison to male counterparts who get full support (27.5%) from their parents. 50.6 percentage male athletes get Support from their parents and on the other side, 43.2 percentage parents are on the positive side for their daughter's active participation in sports competitions. 6.3 percent of male athletes and 6.1 percent of parents disagree with their sports training and participation in the competition.

When it comes to training and competition, having the support of family, friends and teammates may just be an athlete's secret weapon to improving sports success on game days. It may seem obvious that social support systems would help an athlete stick to a training program or eat a healthy diet, but does it help you perform better during competition? Yes, it does, according to research on golfers (15). There is a high correlation between a parent's engagement in sport and that of their children, indicating that active parents can be a positive influence. ... Respondents indicated that family, school, and enjoyment of the activity were key factors in continued participation in physical activity for children. There is a high correlation between a parent's engagement in sport and that of their children, indicating that active parents can be a positive influence. ... Respondents indicated that family, school, and enjoyment of the activity were key factors in continued participation in physical activity for children.

When you encourage your child to take part in sport, you are also helping to develop his social skills. By participating in sport, your child will develop social skills such as leadership and how to communicate and build a team. That will help him later in various spheres of life.

06 | OCCUPATIONAL BACKGROUND OF ATHLETES' PARENTS

6

Occupational Background of Athletes' Parents

Research has shown social class to have a direct relationship to sports involvement. Social class largely defines the types sports individuals choose participate in, their level of involvement, and affects their chances of success in the sport. Often times, sports are a reflection of social class.

TABLE-16	Nepalese Male Athletes' Parents Occupation				
Father's Occupation			**Mother's Occupation**		
Occupation	**No**	**%**	**Occupation**	**No**	**%**
Agriculture	133	52.2	House Wife	128	50.0
Business	51	20.0	Agriculture	86	33.7
Service	38	14.9	Business	22	8.6
Laborer	11	4.3	Service	8	3.1
NM	20	7.8	Laborer	1	0.4
Politics/Industry	2	0.8	NM	10	3.9

Most of the male athletes' father is from Agriculture (52.2 %) background. 20 percent of the parents are from business and 14.9 % of parents are from Service in the Government or private corporate office. 4.3 percent of parents are from industry laborers. One the other side athletes' 50.2 percent of mothers are housewife and they are followed by agriculture (33.7 %), Business (8.7 %), and 3.1 % from Service in the Government or private corporate office.

Social class largely defines the types sports individuals choose participate in, their level of involvement, and affects their chances of success in the sport. Often times, sports are a reflection of social class.

TABLE-17	Nepalese Female Athletes' Parents Occupation				
Occupation	Fathers Occupation		Mothers Occupation		
	No	%	Occupation	No	%
Agriculture	114	43.0	House Wife	129	48.7
Service	68	25.7	Agriculture	78	29.4
Business	55	20.8	Business	33	12.5
Laborer	13	4.9	Service	14	5.3
Not Mentioned	15	5.7	Laborer	2	0.8
Total	265	100.0	Not Mentioned	9	3.4
			Total	265	100.0

Most of the male athletes' father is from Agriculture (52.2 %) background. 20 percent of the parents are from business and 14.9 % of parents are from Service in the Government or private corporate office. 4.3 percent of parents are from industry laborers. One the other side athletes' 50.2 percent of mothers are housewife and they are followed by agriculture (33.7 %), Business (8.7 %), and 3.1% from Service in the Government or private corporate office.

TABLE-18	How Livelihood is going?			
How is your Life	**Male Athletes**		**Female Athletes**	
	No	**%**	**No**	**%**
Ordinary	134	52.55	113	42.6
OK	88	34.51	99	37.4
Good	21	8.24	27	10.2
Not Mentioned	12	4.71	26	9.8
Total	255	100.0	265	100.0

Quality of life includes everything from physical health, family, education, employment, wealth, safety, and security to freedom, religious beliefs, and the environment. Quality of life (QOL) is the general well-being of individuals and societies, outlining negative and positive features of life. It consists of the expectations of an individual or society for a good life.

Athletes were asked how your livelihood is going, and 52.55 percent of male athletes responded that their life is ordinary. 34.51 percent male athletes expressed that life is going OK-It's satisfactory and only 8.24 percent of athletes said life is good.

Similarly in the female section, 42.6 percent of athletes responded that their life is ordinary. In comparison to male 37.4 percent of female athletes expressed that life is going OK-It's satisfactory and only 8.24 percent of athletes said life is good.

07 | EDUCATION STANDARD OF NEPALESE INTERNATIONAL ATHLETES

7

Education Standard of Nepalese International Athletes

Education is considered as one of the effective means of socio-economic development of the community. Education empowers people with essential knowledge and skills as well as raises awareness among citizens for their indigenous rights. Thus, the development of education is tied up with poverty reduction, the democratization of society, and the consolidating of peace and stability. Doubtlessly, educated people in Nepal are increasing. Literacy rate, adult total (% of people ages 15 and above) in Nepal was reported at 67.91 % in 2018. The literacy rate among females is 65.5 percent whereas the literacy rate among males is 82.1 percent.

TABLE-19	Nepalese Male Athletes' Parents Occupation				
Education Standard	Male		Female		
	Number	%	Number	%	
Up to Class 10	117	45.88	83	31.32	
Intermediate (11-12Class)	86	33.73	115	43.40	
Bachelor's Degree	49	19.22	48	18.11	
Master's Degree	3	1.18	19	7.17	
Total	255	100.00	265	100.00	

In general, Nepalese Athletes Education level is not improving in compare to Nepalese general population education standard. Above table shows that 45.88 percentage male athletes' education standard is up to 10th Standard (Secondary Level). Whereas 31.32 percent female athletes have education standard is secondary level. There is nearly 10 percent different between male and female athletes on the Higher Secondary level where 43.40 percentage female athletes are having higher secondary level education whereas 33.73 percent male athletes have higher secondary level education. In the Bachelor's Degree, male and female athletes are having 19.22 percent and 18.11 percent respectively. Out of 255 male athletes only 3 athletes is having Master's Degree and whereas 19 female athletes (7.17 %) are having master degree education.

Women's literacy rate has increased in Nepal: In 1991, only 17% of Nepali women (15 years or older) were literate. In 2015, almost 57% of women were literate. Education is the most important way to empower women. In last quarter century, women's literacy rate has increased almost three times. There is still a long way to go when all women of Nepal will be literate (17).

Education is considered as one of the effective means of socio-economic development of the community. Education empowers people with essential knowledge and skills as well as raises awareness among citizens for their indigenous rights.

FIG-3 Mean Education of Male Athletes during 13th SAG

Mean Education of Male Athlethes During 13th SAG

Sport	Mean Education
Judo	8.4
Swimming	9.4
Kabaddi	10.5
Archery	10.6
Handball	10.6
Athletics	10.6
Boxing	10.7
Volleyball	10.9
Squash	11.3
Wrestling	11.6
Shooting	11.6
Taekwondo	11.8
Bodybuilding	11.8
Triathlon	11.8
Kho-Kho	11.8
Weightlifting	11.9
Badminton	12.0
Tennis	12.3
Karate	12.3
Wushu	12.7
Fencing	12.9
Table Tennis	13.4
Chess	14.3
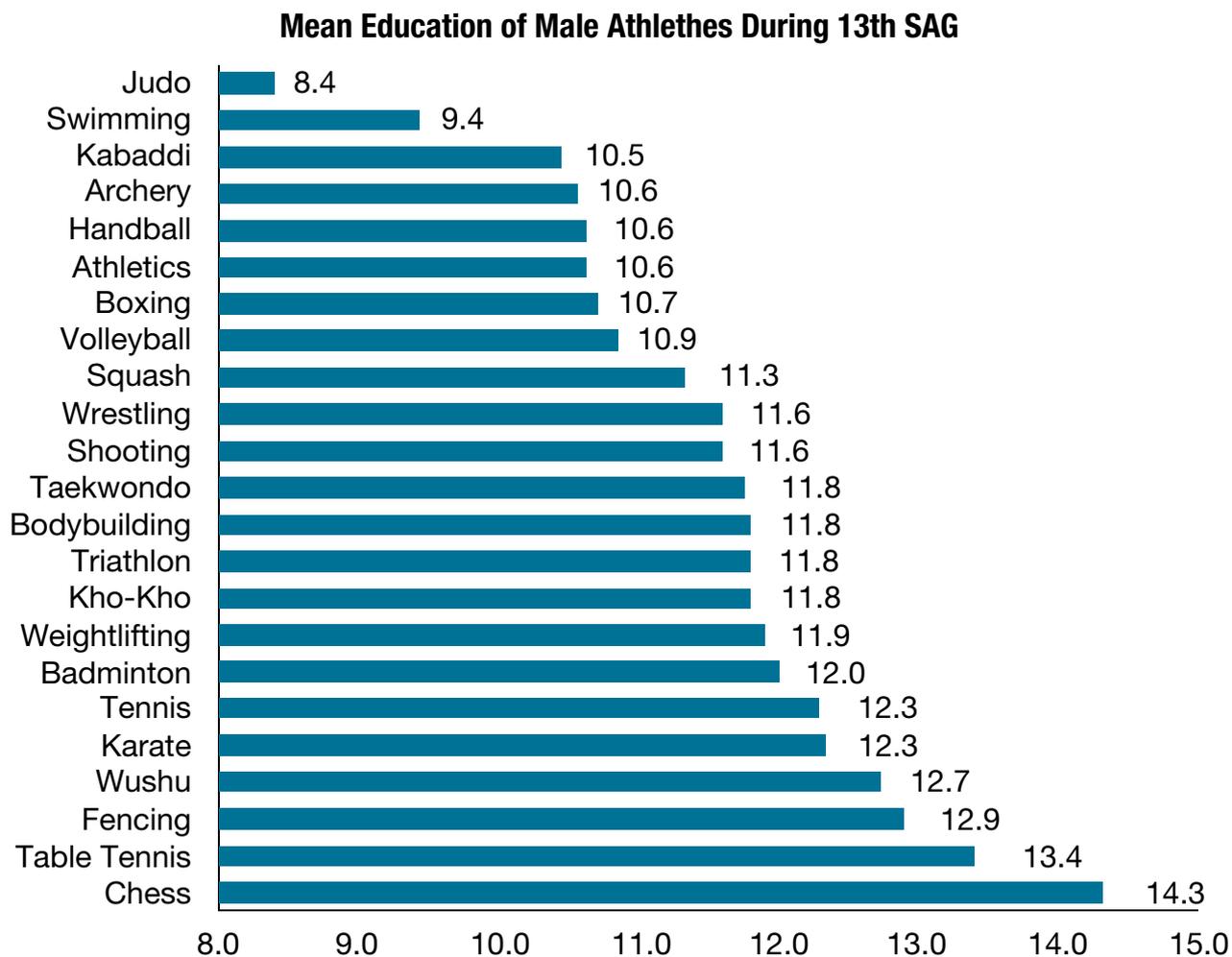
Out of 24 games, men chess players came first in average education level with 14.3 and they were followed by table tennis and fencing athletes with average education level with 13.4 and 12.9 respectively. Out of 24 games, swimming and judo athletes were observed with education levels with 9.4 and 8.4 respectively.

FIG-4 Mean Education of Female Athletes during 13th SAG

Mean Education of Female Athlethes During 13th SAG

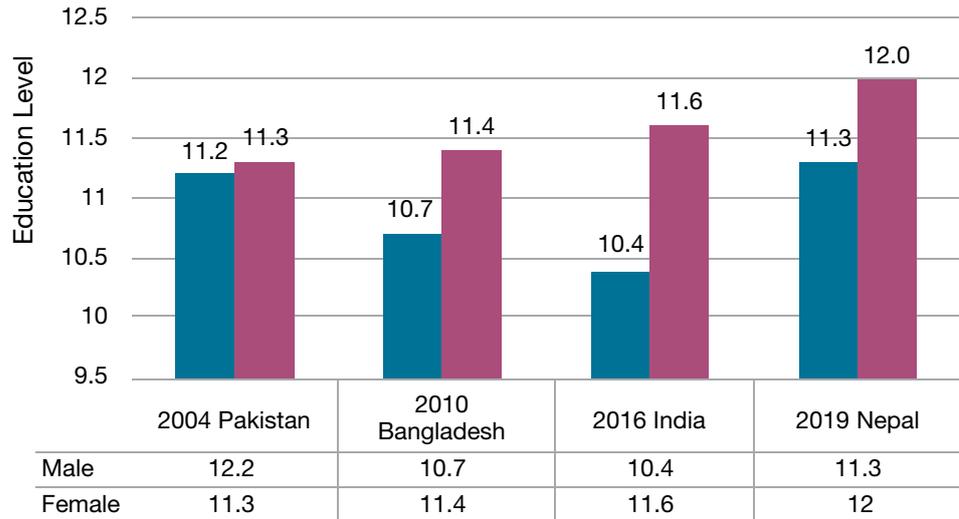| Sport	Value
Swimming	9.5
Bodybuilding	10.6
Football	10.8
Kabaddi	10.9
Tennis	11.0
Weightlifting	11.2
Kho-Kho	11.3
Judo	11.3
Volleyball	11.6
Athletics	12.0
Badminton	12.3
Taekwondo	12.4
Handball	12.5
Wushu	12.5
Fencing	12.6
Shooting	13.0
Karate	13.0
Chess	13.1
Wrestling	13.1
Archery	13.3
Triathlon	14.0
Basketball	14.2
Squash	14.5
Table Tennis	14.8

Out of 25 games, female table tennis players came first in average education level with 14.8 and they were followed by squash and basketball athletes with an average education level of 14.5 and 14.2 respectively. Out of the 25 games, bodybuilding and swimming athletes were observed with the least education level with 10.6 and 9.5 respectively.

**Average Education Level of Nepalese
Male and Female Athletes Participating in Different
South Asian Games**

Since 2004, this researcher has been studying education level of the athletes participating in the South Asian Games.

	2004 Pakistan	2010 Bangladesh	2016 India	2019 Nepal
Male	12.2	10.7	10.4	11.3
Female	11.3	11.4	11.6	12

Since 2004, this researcher has been studying education level of the athletes participating in the South Asian Games. Above figure cumulated 1416 male and female athletes' average education level. Average Male education level goes up and down in different South Asian Games with average education level from 11.2 standards to 11.3 standards during 13th South Asian Games held in Kathmandu. On the female education side, it showed progressing nature from 2004 Pakistan South Asian Games average education of 11.3 standards to 12 by the time SAG was held in Kathmandu in 2019.

	10 Standard	11 & 12 Standard	Bachelor	Masters
9th SAG Pakistan (2004)	66.9	17.86	13.4	1.78
11th SAG Bangladesh (2010)	43.88	27.16	26.37	2.69
12th SAG India (2015)	42.82	36.21	18.68	2.3
13th SAG Kathmandu (2019)	38.5	38.5	18.8	4.2

However, only 18.8 percent athletes had bachelor's degree during 13th SAG. Although athletes with master's degree are in increasing trend but their percentage is very low—only 4.2% during 13th SAG in Kathmandu.

From 2004 Pakistan (66.9%) to 13th South Asian Games 2019 (38.5%), 10th standard (10 class and below) educated athletes are decreasing. In the Higher Secondary Level category increasing trend is seen from 17.86 percent to 38.5 percent. During 2010 Bangladesh SAG games, the percentage of athletes with bachelor's degree was 26.37. However, only 18.8 percent athletes had bachelor's degree during 13th SAG. Although athletes with master's degree are in increasing trend but their percentage is very low—only 4.2% during 13th SAG in Kathmandu. It is a thought worth contemplating for sports authorities in Nepal because 77.0% athletes are under higher secondary education.

Life after sports is always a difficult notion to entertain for many athletes. However, it is a reality which every athlete needs to be prepared for since they will be hanging their boots sooner or later. The transition is always an onus for almost all since it is an end of a glorious era but it opens door to unimaginable opportunities. Good news is that many are enjoying post-athletic life in their respective workplaces.

What athletes would have done differently?

A study published in the Journal of Leadership & Organizational Studies pointed out that former high school and college athletes tend to have higher-status careers than non-athletes. The study showed that employers expect former athletes to display significantly more leadership, self-confidence, and self-respect attributes than those outside of sports, which could be responsible for their placement in these higher-status roles. Apparently, former athletes also earn about 5-15% more than non-athletes, an advantage that doesn't exist for any other extracurricular activity.

Generally, athletes are well positioned than their non-athlete counterparts; however, it is a different story for female athletes, who, reportedly, have the biggest advantage of all. A recent study conducted by EY Women Athletes Business Network and espnW surveyed more than 400 female executives in five countries (20% were U.S. women). Of the top executives, more than half completed in collegiate sports, and only 3% of the women never participated in sports at all(18).

A recent study conducted by EY Women Athletes Business Network and espnW surveyed more than 400 female executives in five countries (20% were U.S. women).

TABLE-20	Institutes Athletes Represent during South Asian Games			
Difference in Job	**Male Athletes**		**Female Athletes**	
	N	**%**	**N**	**%**
No Job	74	29.02	94	35.47
Nepal Army	92	36.08	73	27.55
Armed Police Force	20	7.84	46	17.36
Nepal Police	24	9.41	29	10.94
Various Small Jobs	45	17.65	23	8.68
Total	**255**	**100.00**	**265**	**100.00**

In the 13th South Asian Games, male athletes representing Nepal Army was (36.08 %), Nepal Police (9.41 %), and Armed Police Force (7.84 %). 29.02 percent of athletes did not have any kind of job and 17.65% athletes were involved in various small jobs. In the female front, percentage of athletes belonging to Nepal Army was 27.55, Nepal Police (10.94 %), and Armed Police Force (17.36 %). 35.47% of female athletes did not have a job and 8.68 percent female athletes had various small jobs. Although female athletes are more educated than their male counterpart, there are more jobless female athletes than male.

Skills and Future Plans after Retirement

TABLE-21	Alternative Skills of Male & Female Athletes					
Male Athletes			**Female Athletes**			
Other Skill	No.	%	Other skill	No.	%	
No Other Skill	190	74.5	No other Skill	220	83.0	
Coaching Certificate	28	11.0	Coaching Certificate	23	8.7	
Fitness Instructor	8	3.1	Security/Music/Medical	9	3.4	
Computer	6	2.4	Management	4	1.5	
Life Guard	6	2.4	Fitness Instructor	4	1.5	
Security Guard	5	2.0	Judging	3	1.1	
Judging	4	1.6	Trekking Guide	2	0.8	
Driving	2	0.8	**Total**	**265**	**100.0**	
Mountain Climbing	2	0.8				
P T Instructor	2	0.8				
Medical/Yoga	2	0.8				
Total	**255**	**100.0**				

Apart from playing sports, 74.5% of male athletes had no other skills, 11% male athletes were awarded with coaching certificates of their own game and 3.1% had fitness instructor certificates. Although they are more educated than the male counterpart, 83% female athletes reported to have no other skills, 8.7% had coaching certificates of their games and 3.4% athletes had security, musical, and small medical skills.

Elite athletes train extensively for years; in many cases their youth is consumed by training for their sport. To pursue their dreams of glory, athletes have to make multiple sacrifices. These may include huge financial sacrifices, moving away from family, dropping out of studies, and sacrificing personal or romantic relationships. For the same reason, it is always a difficult notion to think of life post-active sports. Retirement is a concept they do not want to indulge in in great detail. Nevertheless, either they are Olympic champions or if they have yet to reach the pinnacle of success in their sport, age, injury or exhaustion compels athletes to end their career eventually (19).

To pursue their dreams of glory, athletes have to make multiple sacrifices. These may include huge financial sacrifices, moving away from family, dropping out of studies, and sacrificing personal or romantic relationships.

TABLE-22	Nepalese Athletes' Retirement Plans					
Men Athletes	No.	%	**Women Athletes**	No.	%	
Coaching in Own Sports	113	44.3	Coaching in Own Sports	102	38.5	
Don't Know	60	23.5	Don't Know	80	30.2	
Business	30	11.8	Business	31	11.7	
Agriculture	16	6.3	Foreign Job	20	7.5	
Foreign Job	15	5.9	Agriculture	12	4.5	
Service	10	3.9	Doctor /Engineering/Industrial	12	4.5	
Industry/ Engineering	11	4.4	Service	8	3.0	
	255	100.0		265	100.0	

The above table shows future plans of athletes after completion in active sports. Since they have less education and possibly, due to the motivation from their coaches, 44.3% male athletes and 38.5% female athletes want to continue in their respective sports as a coach. 23.5% male athletes and 30.2% female athletes stated to be clueless about their future plans post-active sports. 11.8% male and 11.7% female athletes expressed desire to get involved in small business.

Only 6.3% male and 4.5% female athletes claimed that they wanted to return to their traditional work, i.e. agriculture. Surprisingly, 5.9% male and 7.5% female athletes wanted to migrate for foreign employment.

3.9% male athletes and 3.0% female athletes wanted to get an office job. 4.4% male and 4.5% female athletes wanted to do industry job, engineering, and get into medicine in the future after retirement from active sports.

Transitions are turning phases in career development that put demands on athletes to continue successfully in sport and/or other spheres of life (20). Many researchers have described the sport-career transition (SCT) of professional athletes as an onerous and disruptive process, filled with conflict and mixed emotions that ranges from relief (21) to crisis (22) resulting from a variety of factors such as age at retirement, lifestyle, income, and ego. When an athlete has to make a special effort to successfully adapt to the new requirements that is when crisis transition takes place. Lowered self-esteem, emotional discomfort (e.g., doubt, anxiety, and fear), increased sensitivity to failure, disorientation to decision-making, and confusion (23) are the symptoms of crisis transition resulting from the inability to adjust.

08 | CONCLUSION

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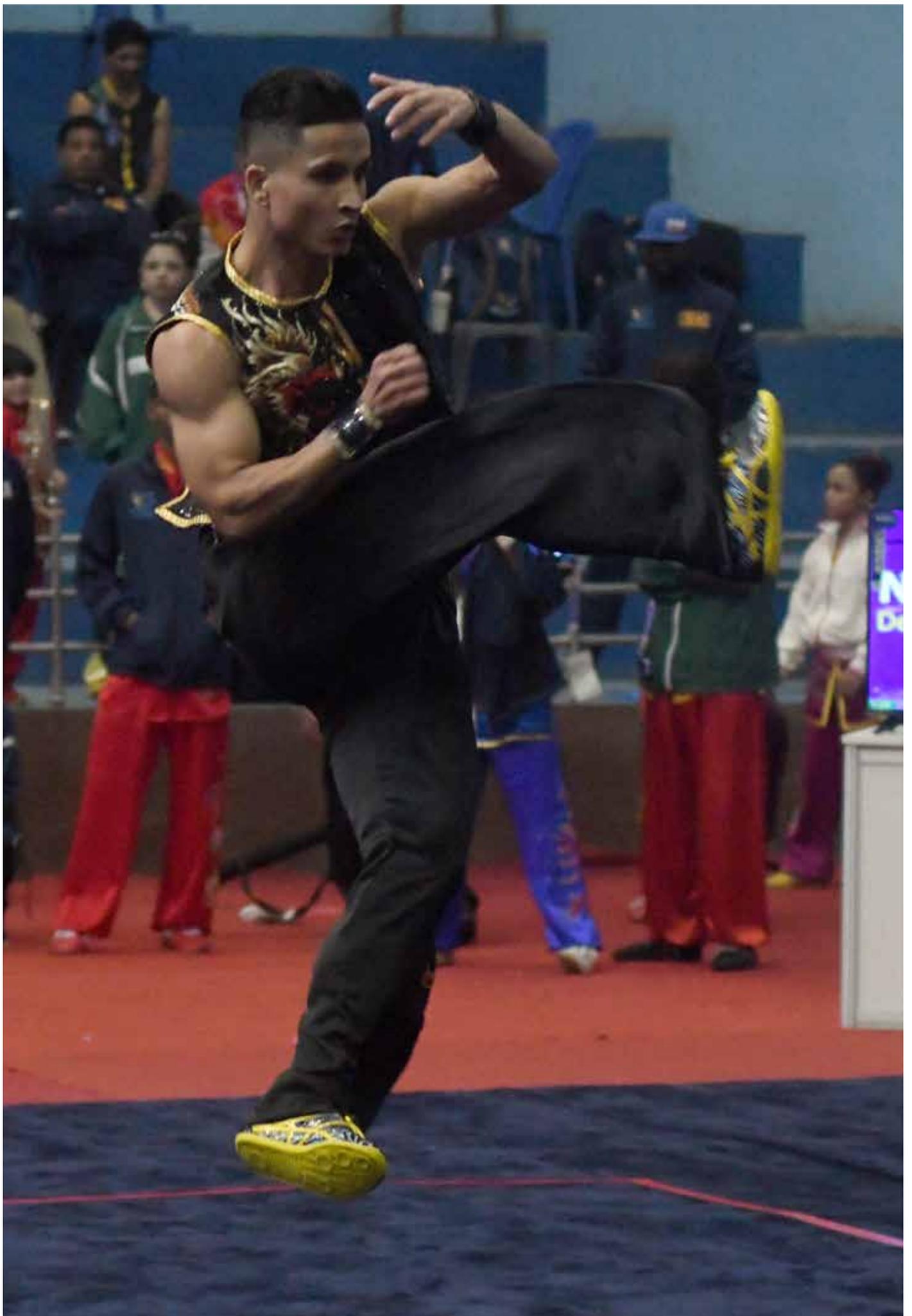
Conclusion

Out of the 255 male athletes, the average decimal age showed to be 28.52 years (± 8.04) and the age range was 13.56 to 61.95 decimal age. On average, the most matured athletes were male chess players with an average decimal age 40.21 years (±12.55) and they were followed by wushu, bodybuilding and shooting players with an average of 37.73 (± 4.2) years, 36.33 (±5.04) years and 35.27 (± 4.67) years respectively. Men squash and swimming players came with an average age of 20.11 years (± 2.7) and 17.13 (± 4.78) years respectively.

Robert Howard, a researcher from University of New South Wales reported that chess players peak, on average, at around the age of 35. However, Viswanathan Anand, the Indian chess player, obtained his highest chess rating (2,817 Elo points) at the age of 41. Under the supervision of an international team of psychologists, Garry Kasparov, chess grandmaster, was tested to measure his memory, spatial ability, and abstract reasoning. The average IQ is considered to be100 but that of Kasparov's was noted as 135 and his memory as one of the very best thereby placing him in the "smartest people" category.

Team games, like football, are sports where level of fitness, body size, body composition, and shape play an important part in facilitating specific advantages for specific playing positions chiefly at the highest levels of performance where there is a high degree of player specialization

(24). Specific positional roles within each code may demand unique physiological attributes (25).

On the other side of the spectrum, bodyweight status of women football has been found to be closely related to body composition, somatotype, and leg muscle power. Thus, improvements in physique and anaerobic power, and enhancement in performance can be achieved with an optimal BMI. The study recommends a BMI of 22 kg m-2 as the target for female football players (26).

Based on these references, Nepalese National Women Football Team's average height, body weight, and BMI are very less with an average height of 1.58 m, bodyweight with 52.15 kg, and BMI 20.9. Female volleyball players are faced with the same situation. In the case of tennis and swimming, players are very young, have short stature and less BMI.

Out of the 265 female athletes, only 54 athletes are married (20.4 %). and in the male section, 47.45 percentage athletes are married and the rest are unmarried. 17.25 percentage male athletes who participate in these games are more than 35 years and just 10.57 percentage female athletes are more than 30 years.

Average Nepali male athletes stated to spend more than Rs. 17, 000 per month and average female athletes spent nearly Rs. 16,000. 30.2% male and 40.4% female athletes said to have no savings. 53.33

The average IQ is considered to be100 but that of Kasparov's was noted as 135 and his memory as one of the very best thereby placing him in the "smartest people" category.

percent of male athletes represented Nepal Army, Nepal Police, and the Armed Police Force. 29.02% of athletes claimed to be jobless. In the female front, 55.85% of athletes belonged to Nepal Army, Nepal Police, and Armed Police Force. 35.47 percent of female athletes declared to be jobless. Although female athletes are more educated still there are more number of jobless athletes in the female category compared to the male athletes.

Most of the male athletes claimed that their father are into agriculture (52.2 %) and 50.2% reported to have mothers who are housewives. Female athletes' fathers are from agriculture (43.0 %) background and 48.7% of them have mothers as housewives.

It is evident from the study that 72.5% of male athletes bear the cost for training from their salary and 27.5% of athletes are dependent on their parents. The situation is not good for female athletes either. Only 40% of athletes are financially independent therefore bear the training cost from their income or salary and 60% of athletes are dependent on their parents for sports training costs. 87% of male athletes' livelihood is ordinary-OK and nearly 79% of female athletes expressed their livelihood to be in the same category.

Since 2004 South Asian Games female athletes' average education has always been higher than their male counterpart. The number of female athletes decorated with Master's Degree is growing in

every South Asian Games. It is reported that fewer than 2% of NCAA student-athletes (USA) go on to be professional athletes. The reality, however, is that most student-athletes depend on academics to prepare them for life after college. It is an understatement to say that education is important since irrespective of an individual being an athlete or not, education can prove to be a blessing in disguise. There are nearly half a million NCAA student-athletes, and most of them will go pro in something other than sports (27).

Since Nepalese athletes' education level is low and they cannot compete in the open job market, nearly 40 percent of athletes want to continue in sports as a coach in their respective sport. Elite athletes train extensively for years. In many cases, the process can be consuming which results into missing out on the major events in life, often making extensive personal sacrifices to pursue their dreams of glory. For many athletes, retirement is a concept that they do not intend on thinking about at great length. However, whether they have achieved international fame or failed to reach the pinnacle in their respective sport, all athletes' career will eventually come to an end.

Apart from playing sports, 75% male and 83% female athletes don't have alternative skills to support their livelihood after retirement from active sports. 23.5 percent male and 30 percent female athletes don't have plans after life in active sports.

Apart from playing sports, 75% male and 83% female athletes don't have alternative skills to support their livelihood after retirement from active sports. 23.5 percent male and 30 percent female athletes don't have plans after life in active sports.

09 | RECOMMENDATION

9

Recommendation

Sports, undoubtedly, has a major economic impact when it takes the form of innovative sports products, events, and facilities. In order for elite athletes to yield better results and to promote participation in sports, a government, generally, promotes innovation and sports research.

To unravel the underlying mechanisms of how athletes function, sports research helps. Moreover, research in sports gives coaches and athletes a way to gain information and apply it to sports performance. It helps coaches tremendously to establish beliefs about how to develop programs and coaching techniques.

Team sports help teach adolescents accountability, dedication, leadership, and other skills.

- Many athletes do better academically
- Sports teach teamwork and problem-solving skills
- Physical health benefits of sports
- Sports boost self-esteem
- Reduce pressure and stress with sports.

1. During National Games, South Asian Games, and Asian Games, most of the athletes get together and researches of this kind are performed. At the same time, sports science research of other kinds can be done and from these kinds of research much valuable information can be acquired which will be useful for sport policy formation of the country.

2. As the results have shown, there are many athletes from Force (Army, Police and Armed Police Force) participating in SAG games. To encourage and motivate more sports participation from the public, regular competitions should be hosted in rural municipality and metropolitan cities.

3. There is a big time gap between the Rashtrapati Cup and National Competition. To bridge the gap, University Sports Competition should be organized regularly.

4. Sports Science Research should be a continuous process. While conducting long-duration preparation training for national teams, a special budget should be allocated so that sports scientists can explore their knowledge on our national teams.

During National Games, South Asian Games, and Asian Games, most of the athletes get together and researches of this kind are performed. At the same time, sports science research of other kinds can be done and from these kinds of research much valuable information can be acquired which will be useful for sport policy formation of the country.

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APPENDIX-1

Education Standard of Nepalese Male International Athletes

S.N.	Sports	Mean	SD	Max	Min
1	Chess	14.3	2.8	18	10
2	Table Tennis	13.4	2.4	16	10
3	Fencing	12.9	2.6	16	11
4	Wushu	12.7	2.1	16	10
5	Karate	12.3	2.5	15	10
6	Tennis	12.3	2.7	18	10
7	Badminton	12.0	3.8	17	8
8	Weightlifting	11.9	2.4	16	8
9	Kho-Kho	11.8	2.3	18	10
10	Triathlon	11.8	2.5	15	10
11	Body Building	11.8	2.5	15	10
12	Taekwondo	11.8	1.8	16	10
13	Shooting	11.6	2.6	16	10
14	Wrestling	11.6	4.3	18	8
15	Squash	11.3	1.2	12	10
16	Volleyball	10.9	1.6	13	8
17	Boxing	10.7	1.9	13	7
18	Athletics	10.6	1.9	18	10
19	Hand Ball	10.6	1.8	15	8
21	Archery	10.6	2.6	15	8
22	Kabaddi	10.5	1.5	12	8
23	Swimming	9.4	1.2	12	8
24	Judo	8.4	2.8	12	5

APPENDIX-2

Education Standard of Nepalese Female International Athletes

S.N.	Sports	Mean	SD	Max	Min
1	Table Tennis	14.8	3.6	18	10
2	Squash	14.5	3.0	18	12
3	Basketball	14.2	2.2	18	10
4	Triathlon	14.0	3.1	18	10
5	Archery	13.3	3.1	18	10
6	Wrestling	13.1	3.6	18	9
7	Chess	13.1	3.0	18	8
8	Karate	13.0	4.2	18	9
9	Shooting	13.0	2.0	16	12
10	Fencing	12.6	3.0	18	8
11	Wushu	12.5	2.5	16	8
12	Handball	12.5	2.1	16	10
13	Taekwondo	12.4	2.0	18	10
14	Badminton	12.3	2.1	15	9
15	Athletics	12.0	2.5	18	8
16	Volleyball	11.6	1.9	16	9
17	Judo	11.3	2.6	15	7
18	Kho-Kho	11.3	1.4	15	10
19	Weightlifting	11.2	1.4	12	8
21	Tennis	11.0	1.2	12	9
22	Kabaddi	10.9	1.0	12	10
23	Football	10.8	1.5	15	8
24	Bodybuilding	10.6	2.0	13	8
25	Swimming	9.5	1.4	12	8

APPENDIX-3

Body Mass Index of Nepalese Male International Athletes

S.N.	Sports	Mean	SD	Max	Min
1	Chess	23.92	2.48	27.97	19.81
2	Table Tennis	23.41	1.88	26.06	20.76
3	Fencing	22.90	2.28	27.68	19.53
4	Wushu	22.82	2.82	29.38	19.38
5	Karate	22.82	1.04	23.88	21.80
6	Tennis	23.74	3.08	26.51	17.93
7	Badminton	22.09	2.05	24.73	19.94
8	Weightlifting	29.65	6.92	43.58	21.08
9	Kho-Kho	21.59	1.90	25.71	17.71
10	Triathlon	19.95	1.82	21.72	17.28
11	Body Building	27.06	2.70	31.99	23.88
12	Taekwondo	22.53	2.30	26.83	18.52
13	Shooting	23.69	1.79	25.78	20.90
14	Wrestling	25.05	4.66	32.99	20.76
15	Squash	21.45	2.56	24.39	19.72
16	Volleyball	21.58	1.47	23.67	16.53
17	Boxing	24.44	3.61	31.83	19.57
18	Athletics	22.05	2.36	28.37	19.05
19	Hand Ball	24.44	2.26	28.39	20.53
21	Archery	23.99	2.22	27.92	21.16
22	Kabaddi	24.46	2.20	27.68	19.44
23	Swimming	21.21	1.53	23.67	18.31
24	Judo	28.32	5.22	39.61	22.53

APPENDIX-4

Body Mass Index of Nepalese Female International Athletes

S.N.	Sports	Mean	SD	Max	Min
1	Chess	23.60	4.18	32.05	18.37
2	Table Tennis	23.07	3.09	26.17	19.22
3	Fencing	20.90	1.58	24.03	18.37
4	Wushu	23.42	2.61	28.23	20.70
5	Karate	21.23	2.59	24.97	18.36
6	Tennis	20.95	1.35	23.14	19.47
7	Badminton	23.45	3.94	32.30	20.96
8	Weightlifting	26.60	4.96	32.86	19.63
9	Kho-Kho	21.02	7.54	48.00	17.09
10	Triathlon	21.35	1.48	23.78	19.83
11	Body Building	25.41	3.80	31.14	21.09
12	Taekwondo	21.74	3.29	31.14	18.44
13	Shooting	21.34	1.72	23.63	19.56
14	Wrestling	22.76	3.19	28.30	18.37
15	Squash	20.45	2.1	22.31	18.07
16	Volleyball	21.25	2.30	26.99	17.57
17	Boxing	22.15	2.31	25.71	18.07
18	Athletics	20.59	2.89	29.38	17.58
19	Hand Ball	22.93	2.34	26.45	18.07
21	Archery	24.54	2.41	27.34	20.02
22	Kabaddi	24.23	2.00	27.48	20.57
23	Swimming	20.31	1.34	22.66	17.63
24	Judo	25.24	4.68	33.87	18.66
25	Football	20.99	1.86	27.30	18.00
26	Basketball	22.34	2.71	30.76	19.27

Designed and Processed by Pentagram, 5548180

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13th
SOUTH ASIAN GAMES - 2019
KATHMANDU-POKHARA-JANAKPUR
1-10 December, 2019