Athletes' Knowledge about the Non-Usage of Drugs like: Cigarette Smoking (CS), Alcohol Consumption (AC) and Performance Enhancing Drugs (PEDs), as Prime Prevention Strategies in Slowing Ageing Process

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Abstract

This study was implemented to find out about the Prime Prevention Strategies in slowing ageing process amongst Njala University, Njala Campus Athletes in Njala, Southern Sierra Leone. The significance of the study is to find out the athlete's knowledge about non-usage of drugs like cigarette smoking, alcohol consumption and performance enhancing drugs as prime prevention strategies in slowing ageing process. A total of one hundred and fifty athletes (n=150) mainly undergraduates [(95 male representing 63% and 55 female representing 37%; 70 Christians representing 47% {40 male Christians representing 27% & 30 female Christians representing 20%} and 80 Muslims representing 53% {55 male Muslims representing 36.6% & 25 female Muslims representing 16.6%}; 10 married representing 7% {6 male married representing 4% & 4 female married representing 3%} and 140 single representing 93% {89 male single representing 59% & 51 female single representing 34%}; 100 from South-East representing 67% {65 male representing 43.3% & 35 female representing 23.3%}and 50 from North-West representing 33% {30 male representing 20% & 20 female representing 13%})] were randomly selected without replacement from four Schools [(65 from School of Agriculture & Environmental Science representing 43% {40 male representing 26.6% & 25 female representing 16.6%}, 85 from School of Education & Technology representing 57% {55 male representing 37% & 30 female representing 20%})] at four levels [(125 from level 100-200 representing 83% {80 male representing 53% & 45 female representing 30%}, 25 from level 300-400 representing 17% {15 male representing 10% & 10 female representing 7%})], 90 within the age range of (18-25) representing 60% {60 male representing 40% & 30 female representing 20%} and 60 within the age range from (26-30+) representing 40% {35 male representing 23% & 25 female representing 17%}in years. The Dependent t-test (t) was used to compare the results of the findings. The results were tested @ $p < 0.05$ level of significance. Analysis of results from non-usage of drugs like cigarette smoking, alcohol consumption and performance enhancing drugs, shows two third of significance differences.Conclusively, the findings shows that Njala University, Njala Campus (NUNC) athletes were experienced in the knowledge of prime prevention strategy in slowing the ageing process of athletes with respect to non-usage of drugs like cigarette smoking and alcohol consumption, but minimum or little knowledge on the non-usage of drugs like performance enhancing drugs (PEDs). In recommendation, the most effective approach in improving the prime prevention strategies in slowing ageing process amongst NUNC athletes is by giving them compulsory seminars, workshops and screening before taking part in any intra and extramural competitions.

Introduction:

Health risk behaviours typically co-occur or cluster together [Coups, et al. (2004); Fine, et al. (2004); McAloney, et

al. (2013); Poortinga, (2007) and Pronk, et al. (2004)]. There is evidence of a synergistic effect of risk factors, where combinations of lifestyle risk behaviours are more detrimental to health than their cumulative individual effects *[Berrigan, et al. (2003); French, et al. (2008) and Poortinga, (2007)].* Despite this, many public health intervention strategies focus on health behaviours in isolation *[Conry, et al. (2011) and McAloney, et al. (2013)].* The World Health Organization recently recommended an approach to prevention of chronic disease, which focuses on tackling multiple modifiable risk factors, *World Health Organization (2013).*

Health by definition is a state of complete physical, social and mental-wellbeing, and not merely the absence of disease or infirmity, *(World Health Organization, 2010).* Within the context of health promotion, health has been considered less as an abstract state and more as a means to an end that can be expressed in functional terms as a resource that permits people to lead an independently, socially and economically productive life. Health is a positive concept emphasizing social and personal resources as well as physical capabilities. Health main determinant factors are the social and economic environment, the physical environment, and the person's individual characteristics and behavioral skills *(World Health Organization, 2010).* However, college athletes being healthier and more attentive to their overall health and wellbeing are perhaps a common perception. Evident in the report by *Nattiv, et al. (1991)* state that collegiate athletes are more at higher risk for certain lifestyle behaviors, thereby leading them to certain maladaptive behavioral factors causing emotional, physical, and mental stresses within the athletes frame of mind.

Physical fitness is a general state of health and well-being and, more specifically, the ability to perform aspects of sports or occupations. Physical fitness is generally achieved through correct nutrition *(Tremblay et al., 2010),* moderate-vigorous physical activity, *(de Groot et al., 2010),* exercise and rest, *Malina (2010).* Tobacco use in both smoking and smokeless form has been a growing concern in the past decade. Research has proven the harmful side effects of tobacco use and warnings are now posted to ensure that individuals in society are fore warned of the damage that tobacco use may cause. However, limited research exists on the use of cigarette by athletes. *Natttiv et al., (1991).* Alcohol consumption (use and abuse) is regarded as an important public health problem worldwide, having been identified as the second largest disease risk factor in Europe and the leading disease risk factor in the Western Pacific and the Americas *(World Health Organization, 2011).* In general, excessive alcohol consumption is common among young adults in industrialized countries, both in and outside Europe, and poses a problem of great magnitude in this population. Prevention is a fundamental tool for reducing excessive alcohol consumption *(Salcedo et al., 2011).* Athletes tend to limit the drinking of alcohol, which according to *Overman, et al. (1991)* is the most frequently used drug by college students and athletes during weekends, special occasions and

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celebrations. Athletes are more likely to believe that drinking is a risky behavior and damaging to health. However, they do not necessarily drink less than non-athletes. Participation in athletics may exert specific influence on drinking behavior among collegiate athletes regarding the drink choice, drinking experience and drinking outside of school week, *(Overman, et al., 1991).*

Drug use by athletes at both the collegiate and professional levels has become an area of concern. Performance-enhancing drugs have turned a spotlight on the incidence of athletes using drugs, *(Evans, et al., 1992).* When discussing drugs and athletes, there are two major drug classifications: recreational and performance enhancing drugs. Recreational drugs are taken for enjoyment and pleasure or to relax. According to *Evans et al (1992)* anabolic steroids are the most popular performance enhancers, which, "increase muscle size and strength, improve recovery time between workouts, and increase aggressive behavior. A student athlete (sometimes written as student–athlete) is a participant in an organized competitive sport sponsored by the educational institution in which he or she is enrolled. Student athletes must typically balance the roles of being a full-time student and a full-time athlete, *(Gerdy, 2000).* College athletics is a term covering the non-professional, collegiate and university-level competitive sports and games requiring physical skill, and the systems of training that prepare athletes for competition performance *(Andrew, 2003).* Athletes according to *Weiss, (1995)* are group of individuals that are engaged in

one or more form of competitive games and sports aimed at a reward or for physical fitness, and are more likely than non-athletes to exhibit maladaptive behaviors that are injurious to their health without considering the adverse effects therein. Athletes being aware of the risk factors associated with premature ageing and the methods to be adopted in slowing ageing process through abstinence from activities associated with such risk is called knowledge of primary prevention, *(Muffuli, et al., 2003).* Hence, premature ageing according to *Banks et al. (2003)* that forces athletes to retire from active games and sport competitions at a chronologically young age will be minimized. Ageing according to *Kirkwood, et al. (2000)* is always associated with degenerative processes, which include longer reaction time, a reduction in musculoskeletal strength, increased difficulty in respiration and decreases both anaerobic capacity and aerobic fitness among others. Report by the *World Health Organization (2002)* regarding individual lifestyle towards aged related diseases emphasized the following: cigarette smoking, unhealthy diet, alcohol consumption and physical inactivity among others.

The aim of this study is to find out about NUNC Athletes' Knowledge in comparison with the significance differences between the 'Yes' or 'No' questions and answers about the non-usage of drugs like: Cigarette Smoking [CS], Alcohol Consumption [AC] and Performance Enhancing Drugs [PEDs], aimed as prime prevention strategies in slowing ageing process ranging from first

year-to-second year [*100-200*] and third year-to-final year [*300-400*] athletes in Njala, Sierra Leone.

Materials and Methods

Selection of participants:

The participants of this study were mainly undergraduates' athletes with a total of one hundred and fifty [n=150]. However, 55(37%) were females and 95 (63%) were males; 40 with 27% male Christians and 30 with 20% female Christians; 55 with 36.6% male Muslims and 25 with 16.6% female Muslims; 6 with 4% married male and 4 with 3% married female; 89 with 59% male single and 51 with 34% female single; 65 with 43.3% South-East male and 35 with 23.3% South-East female; 30 with 20% North-West male and 20 with 13% North-West female, were selected using the systematic random sampling drawn from four Schools i.e. 40 with 26.6% male from the School of Agriculture & Environmental Science and 25 with 16.6% female from the School of Agriculture & Environmental Science; 55 with 37% male from the School of Education & Technology and 30 with 20% female from the School of Education & Technology were also drawn at four levels i.e. 80 with 53% male from level [100-200] and 45 with 30% female from level [100-200]; 15 with 10% male from level [300-400] and 10 with 7% female from level [300-400]. Also, 60 with 40% male were within the age range of [18-25yrs] and 30 with 20% female were within the age range of [18-25yrs]; 35 with 23% male were within the age range of [26-30+yrs] and 25 with 17% female were within the age range of [26-30+] in years.

Instrument for measuring the parameter:

The descriptive survey research design was used for the research. The variables tested included: non-usage of drugs like: cigarette smoking, alcohol consumption and performance enhancing drugs. The modified health risk behaviors survey questionnaire [MHRBSQ] was adopted as the instrument for testing the parameters that was originally used by *United States of America Centre for Disease Control and prevention (2001).* The questionnaire was supported with two main sections i.e. *Section-One* demographic data and *Section-Two* variable data. Two senior colleague lecturers in the Department of Human Kinetics and Health Education, School of Education, Njala University validated the questionnaire. The instrument was first pre-tested on a quantum of 50 Polytechnic Athletes' using the test retest method, thereby producing a high intra-class correlation coefficient reliability of 0.99 using the ANOVA technique as referenced in tables 1-9 below respectively.

Test Procedures:

One hundred and fifty NUNC athletes [n=150] were randomly selected using a systematic random sampling mainly undergraduates drawn from the range of first year-to-second year [100-200] and third year-to-fourth year [300-400] within the Schools ranged from Agriculture-Environmental Science and Education-Technology, Njala University, Njala Campus, were questioned prior to their training session at the University Sports Complex to respond to the 'Yes' or 'No' questions and answers in the self-restructured but validated survey

questionnaire by the researcher with the help of some members of the academic staff of Human Kinetics and Health Education Department, Njala University [**NU**] and Shanghai University of Sport [**SUS**], thereby using the face to face question and answer technique. The responses provided by the respondents were statistically analyzed as shown in the tables below.

Statistical Analysis:

The frequency distribution tables, percentage, mean, standard deviation and inferential statistics of Dependent t-test [**t**] were used to analyze the data obtained from NUNC Athletes about their knowledge of prime prevention strategies in slowing ageing process by using a modified health risk behaviors survey questionnaire that was originally used by the *United States of America Centre for Disease Control and prevention, (2001),* with the aim of finding any significant difference in the NUNC Athletes' knowledge of prime prevention strategies in slowing ageing process. The results were tested at level of significance of $p < 0.05$.

Results

Table 1: Test-retest ICC Reliability Demographic Characteristics of Respondents *Age according to Gender* using ANOVA technique [n=50]

Respondents	Age (n=50)				X^2		Y^2		Ti		Ti^2	
	X (18-25)		**Y** (26-35 +)						Sum of T_1 and T_2		Sum of T_1 and T_2	
	T_1	T_2	T_1	T_2	T_1	T_2	T_1	T_2	X	Y	X	Y
Male	25	24	10	11	625	576	100	121	49	21	2401	441
Female	10	09	05	06	100	81	25	36	19	11	361	121
(n=2)	*∑X = 68		*∑Y = 32		*∑X² = 1382		*∑Y² = 282		*∑Ti² =		2762	562
	*(∑X)² = 4624		*(∑Y)² = 1024		*(ICC) Reliability *R = 0.99							

Table 2: Test-retest ICC Reliability Demographic Characteristics of Respondents *Marital Status according to Gender* using ANOVA technique [n=50]

Respondents	Marital Status (n=50)				X^2		Y^2		Ti		Ti^2	
	X (Single)		**Y** (Married)						Sum of T_1 and T_2		Sum of T_1 and T_2	
	T_1	T_2	T_1	T_2	T_1	T_2	T_1	T_2	X	Y	X	Y
Male	30	29	08	09	900	841	64	81	59	17	3481	289
Female	10	09	02	03	100	81	04	09	19	05	361	25
(n=2)	*∑X = 78		*∑Y = 22		*∑X² = 1922		*∑Y² = 158		*∑Ti² =		3842	314
	*(∑X)² = 6084		*(∑Y)² = 484		*(ICC) Reliability *R = 0.99							

Table 3: Test-retest ICC Reliability Demographic Characteristics of Respondents *Religion according to Gender* using ANOVA technique [n=50]

Respondents	Religion (n=50)				X^2		Y^2		Ti		Ti^2	
	X (Muslim)		**Y** (Christian)						Sum of T_1 and T_2		Sum of T_1 and T_2	
	T_1	T_2	T_1	T_2	T_1	T_2	T_1	T_2	X	Y	X	Y
Male	26	25	10	09	676	625	100	81	51	19	2601	361
Female	10	11	04	05	100	121	16	25	21	07	441	49

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	*∑X = 72	*∑Y = 26	*∑X² = 1522	*∑Y² = 222	*∑Ti² =	3042	410
(n=2)	*(∑X)² = 5184	*(∑Y)² = 676	*(ICC) Reliability *R = 0.99				

Table 4: Test-retest ICC Reliability Demographic Characteristics of Respondents *Region according to Gender* using ANOVA technique [n=50]

Respondents	Region (n=50)				X²		Y²		Ti		Ti²	
	X (South/East)		Y (North/West)						Sum of T₁ and T₂		Sum of T₁ and T₂	
	T₁	T₂	T₁	T₂	T₁	T₂	T₁	T₂	X	Y	X	Y
Male	22	23	15	14	484	529	225	196	45	29	2025	841
Female	08	09	05	04	64	81	25	16	17	09	289	81
	*∑X = 62		*∑Y = 38		*∑X² = 1158		*∑Y² = 462		*∑Ti² =		2314	922
(n=2)	*(∑X)² = 3844		*(∑Y)² = 1444		*(ICC) Reliability *R = 0.99							

Table 5: Test-retest ICC Reliability Demographic Characteristics of Respondents *School according to Gender* using ANOVA technique [n=50]

Respondents	School (n=50)				X²		Y²		Ti		Ti²	
	X (Edu./Tech)		Y (Ag./Env. Sc.)						Sum of T₁ and T₂		Sum of T₁ and T₂	
	T₁	T₂	T₁	T₂	T₁	T₂	T₁	T₂	X	Y	X	Y
Male	24	25	12	11	576	625	144	121	49	23	2401	529
Female	06	07	08	07	36	49	64	49	13	15	169	225
	*∑X = 62		*∑Y = 38		*∑X² = 1286		*∑Y² = 378		*∑Ti² =		2570	754
(n=2)	*(∑X)² = 3844		*(∑Y)² = 1444		*(ICC) Reliability *R = 0.99							

Table 6: Test-retest ICC Reliability Demographic Characteristics of Respondents *Level according to Gender* using ANOVA technique [n=50]

Respondents	Level (n=50)				X²		Y²		Ti		Ti²	
	X (Level L₁-L₂)		Y (Level L₃-L₄)						Sum of T₁ and T₂		Sum of T₁ and T₂	
	T₁	T₂	T₁	T₂	T₁	T₂	T₁	T₂	X	Y	X	Y
Male	28	29	10	09	784	841	100	81	57	19	3249	361
Female	10	11	02	01	100	121	04	01	21	03	441	09
	*∑X = 78		*∑Y = 22		*∑X² = 1846		*∑Y² = 186		*∑Ti² =		3690	370
(n=2)	*(∑X)² = 6084		*(∑Y)² = 484		*(ICC) Reliability *R = 0.99							

Table 7: Test-retest ICC Reliability Characteristics using ANOVA technique of Eastern Polytechnic Athletes knowledge in the *non-usage of drugs like: Cigarette Smoking (CS)* as a prime prevention strategy in slowing ageing process [n=50]

Items	Cigarette Smoking {CS} (n=50)				X²		Y²		Ti		Ti²	
	YES (X)		NO (Y)						Sum of T₁ & T₂		Sum of T₁ & T₂	
	T₁	T₂	T₁	T₂	T₁	T₂	T₁	T₂	X	Y	X	Y
1	45	44	05	06	2025	1936	25	36	89	11	7921	121
2	43	42	07	08	1849	1764	49	64	85	15	7225	225
3	41	40	09	10	1681	1600	81	100	81	19	6561	361
4	45	44	05	06	2025	1936	25	36	89	11	7921	121
5	36	35	14	15	1296	1225	196	225	71	29	5041	841
6	31	30	19	20	961	900	361	400	61	39	3721	1521
	∑X = 476		∑Y = 124		∑X² = 19198		∑Y² = 1598		∑Ti² =		38390	3190
(n=6)	(∑X)² = 226576		(∑Y)² = 15376		(ICC) Reliability *R = 0.99							

Table 8: Test-retest ICC Reliability Characteristics using ANOVA technique of Eastern Polytechnic Athletes knowledge in the *non-usage of drugs like: Alcohol Consumption (AC)* as a prime prevention strategy in slowing ageing process [n=50]

Items	Alcohol Consumption {AC} (n=50)				X²		Y²		Ti		Ti²	
	YES (X)		NO (Y)						Sum of T₁ & T₂		Sum of T₁ & T₂	
	T₁	T₂	T₁	T₂	T₁	T₂	T₁	T₂	X	Y	X	Y
1	33	32	17	18	1089	1024	289	324	65	35	4225	1225
2	41	40	09	10	1681	1600	81	100	81	19	6561	361
3	45	44	05	06	2025	1936	25	36	89	11	7921	121
4	43	42	07	08	1849	1764	49	64	85	15	7225	225
5	41	40	09	10	1681	1600	81	100	81	19	6561	361

6	30	29	20	21	900	841	400	441	59	41	3481	1681
	$\sum X = 460$		$\sum Y = 140$		$\sum X^2 = 17990$		$\sum Y^2 = 1990$		$\sum Ti^2 =$		35974	3974
(n=6)	$(\sum X)^2 = 211600$		$(\sum Y)^2 = 19600$				(ICC) Reliability *R = 0.99					

Table 9: Test-retest ICC Reliability Characteristics using ANOVA technique of Eastern Polytechnic Athletes knowledge in the *non-usage of drugs like: Performance Enhancing Drugs (PEDs)* as a prime prevention strategy in slowing ageing process [n=50]

Items	Performance Enhancing Drugs {PEDs} (n=50)				X^2		Y^2		Ti		Ti^2	
	Yes	(X)	No	(Y)					Sum of T_1 & T_2		Sum of T_1 & T_2	
	T_1	T_2	T_1	T_2	T_1	T_2	T_1	T_2	X	Y	X	Y
1	29	28	21	22	841	784	441	484	57	43	3249	1849
2	35	34	15	16	1225	1156	225	256	69	31	4761	961
3	27	26	23	24	729	676	529	576	53	47	2809	2209
4	37	36	13	14	1369	1296	169	196	73	27	5329	729
5	38	37	12	13	1444	1369	144	169	75	25	5625	625
6	26	25	24	25	676	625	576	625	51	49	2601	2401
	$\sum X = 378$		$\sum Y = 222$		$\sum X^2 = 12190$		$\sum Y^2 = 4390$		$\sum Ti^2 =$		24374	8774
(n=6)	$(\sum X)^2 = 142884$		$(\sum Y)^2 = 49284$				(ICC) Reliability *R = 0.99					

Table 10: Njala University, Njala Campus Athletes knowledge in the *non-usage of drugs like: Cigarette Smoking (CS)* as a prime prevention strategy in slowing ageing process [n=150]

No.	Item-One: Cigarette Smoking {CS} (n=150)	Yes (x)	%	(x-X)	$(x-X)^2$	No (y)	%	(y-Y)	$(y-Y)^2$
1	Can cigarette-smoking cessation reverse the ageing process?	100	67	8.5	72.25	50	33	-8.5	72.25
2	Can quitting cigarette smoking minimize the speed of ageing process?	99	66	7.5	56.25	51	34	-7.5	56.25
3	Avoiding cigarette smoking, is it a positive step to ageing actively?	90	60	-1.5	2.25	60	40	1.5	2.25
4	Giving up cigarette smoking, is it a positive step to improve life expectancy and the holistic health of an individual?	95	63	3.5	12.25	55	37	-3.5	12.25
5	Do you know that cigarette smoking can be linked to lung cancer?	85	57	-6.5	42.25	65	43	6.5	42.25
6	Do you know that cigarette smoking can also be linked to various mental health complications?	80	53	-11.5	132.25	70	47	11.5	132.25
(n=6)	Yes (x) [Mean = 91.5 & SD = 7.3] No (y) [Mean = 58.5 & SD = 7.3]	$\sum X = 549$			$\sum(x-X)^2 = 317.5$	$\sum Y = 351$			$\sum(y-Y)^2 = 317.5$

Table 11: Dependent t-test (t) analysis of Njala University, Njala Campus Athletes knowledge in the *non-usage of drugs like: Cigarette Smoking (CS)* as a prime prevention strategy in slowing ageing process [n=150]

Items	Cigarette Smoking {CS} (n=150)		D	D^2
	Yes (X)	No (Y)	(X-Y)	
1	100	50	50	2500
2	99	51	48	2304
3	90	60	30	900
4	95	55	40	1600
5	85	65	20	400
6	80	70	10	100
			* $\sum D = 198$	* $\sum D^2 = 7804$

(n=6)	*($\sum$D)^2 = 39204*	*df = 5*	*t = 5.072*	*c = 2.571*

Table 12: Njala University, Njala Campus Athletes knowledge in the *non-usage of drugs like: Alcohol Consumption (AC)* as a prime prevention strategy in slowing ageing process [n=150]

No.	Item-Two: Alcohol Consumption {AC} (n=150)	Yes (x)	%	(x-X)	(x-X)^2	No (y)	%	(y-Y)	(y-Y)^2
1	Cessation of alcohol consumption, is it a positive way of reversing the ageing process?	82	55	-8.2	67.24	68	45	8.2	67.24
2	Quitting alcohol consumption, will it minimize the speed of ageing process?	90	60	-0.2	0.04	60	40	0.2	0.04
3	Avoiding alcohol consumption, will it be of positive step to ageing actively?	97	65	6.8	46.24	53	35	-6.8	46.24
4	Giving up alcohol consumption, will it be of help in improving life expectancy and the holistic health of an individual?	93	62	2.8	7.84	57	38	-2.8	7.84
5	Do you know that excessive alcohol consumption can be linked to chronic liver disease?	100	67	9.8	96.04	50	33	-9.8	96.04
6	Do you know that excessive alcohol consumption can also be linked to increased health risk complications such as cancer?	79	53	-11.2	125.44	71	47	11.2	125.44
(n=6)	Yes (x) [Mean = 90.2 & SD = 7.6] No (y) [Mean = 59.8 & SD = 7.6]	$\sum$X = 541		$\sum$(x-X)^2 =342.84		$\sum$Y = 359		$\sum$(y-Y)^2 =342.84	

Table 13: Dependent t-test (t) analysis of Njala University, Njala Campus Athletes knowledge in the *non-usage of drugs like: Alcohol Consumption (AC)* as a prime prevention strategy in slowing ageing process [n=150]

Items	Alcohol Consumption {AC} (n=150)		D	D^2
	Yes (X)	No (Y)	(X-Y)	
1	82	68	14	196
2	90	60	30	900
3	97	53	44	1936
4	93	57	36	1296
5	100	50	50	2500
6	79	71	08	64
			* $\sum$D = 182	*$\sum$D^2 = 6892
*(n=6)	*($\sum$D)^2 = 33124	*df = 5	*t = 4.487 *c = 2.571	

Table 14: Njala University, NC Athletes knowledge in the *non-usage of drugs like: Performance Enhancing Drugs (PEDs)* as a prime prevention strategy in slowing ageing process [n=150]

No.	Item-Three: Performance Enhancing Drugs {PEDs} (n=150)	Yes (x)	%	(x-X)	(x-X)^2	No (y)	%	(y-Y)	(y-Y)^2
1	Do you know that performance-enhancing drugs (PEDs) can lead to stroke, heart attack, liver and kidney abnormalities and tumors?	78	52	-3	09	72	48	3	09
2	Has it occur to you that quitting the usage of performance-enhancing drugs (PEDs) can minimize the speed of ageing process?	84	56	03	09	66	44	-3	09

Athletes' Knowledge about the Non-Usage of Drugs like: Cigarette Smoking (CS), Alcohol Consumption (AC) and Performance Enhancing Drugs (PEDs), as Prime Prevention Strategies in Slowing Ageing Process

3	Are you aware that users of performance-enhancing drugs (PEDs) suffer from psychiatric disorders, such as depression and other symptoms of withdrawal?	75	50	-6	36	75	50	6	36
4	Do you believe that using performance-enhancing drugs (PEDs) speeds up ageing process?	86	57	05	25	64	43	-5	25
5	Do you know that performance-enhancing drugs (PEDs) can be linked to high blood pressure (hypertension), heart and circulatory problems?	88	59	07	49	62	41	-7	49
6	Do you know that performance-enhancing drugs (PEDs) can be linked to prostate gland enlargement?	75	50	-6	36	75	50	6	36
(u=6)	Yes (x) [Mean = 81 & SD = 5.2] No (y) [Mean = 69 & SD = 5.2]	Σ X =486		Σ(x-X)² = 164		ΣY =414		Σ(y-Y)² = 164	

Table 15: Dependent t-test (t) analysis of Njala University, Njala Campus Athletes knowledge in the *non-usage of drugs like: Performance Enhancing Drugs (PEDs)* as a prime prevention strategy in slowing ageing process [n=150]

Items	Performance Enhancing Drugs {PEDs} (n=150)		D	D²
	Yes (X)	No (Y)	(X-Y)	
1	78	72	06	36
2	84	66	18	324
3	75	75	00	00
4	86	64	22	484
5	88	62	26	676
6	75	75	00	00
			*ΣD = 72	*ΣD² = 1520
*(n=6)	*(ΣD)² = 5184 *df = 5		*t = 2.566	*c = 2.571

Discussion of Findings:

This study only focuses on athletes' knowledge about the non-usage of drugs like cigarette smoking, alcohol consumption and performance enhancing drugs [PEDs] as prime prevention strategies in slowing ageing process amongst NUNC athletes, which is in conformity with *Blagosklonny, (2009),* which state that due to the major risk factors of age-related diseases and many other causes of mortality, there is a growing efforts in slowing ageing and extend healthy lifespan of athletes through research.

The inferential statistics of Dependent t-test [t], percentage values, mean scores, standard deviation scores and frequency distribution tables were the statistical instruments used to analyze and quantitatively compare the results of the findings. The Dependent t-test results were tested at level of significance of $p < 0.05$.

In discussion, a significant difference of two third [2/3] was recorded as shown in tables *11 and 13*, [*i.e. with t-values of 5.072 and 4.487*] when tested @ $p < 0.05$ in the analysis above, which is in conformity with *Hanaola, (2005),* who reported that having knowledge of smoking as a major cause of lung cancer and other oral diseases could help in quitting smoking or avoiding to smoke. Again the result also serves as prevention strategy to *Ming, et al. (2006)* report, which state that alcohol consumption also

impairs and alters functioning in the cerebellum, which affects motor function and coordination. However, an insignificant difference of one third [1/3] was recorded in table *15*, [*i.e. with t-value of 2.566*] when tested @ $p < 0.05$ in the analysis above. Hence, if athletes' knowledge about the non-usage of PEDs is very low as recorded in table *15* above, then the knowledge about it uses will not only be minimized by athletes but also create a negative effect on their health if knowledge of it non-usage is ignored as reported by *Bradley, et al. (2000),* which state that most of the users of PEDs deliberately ignore the health risks associated with it in order to gain competitive advantage over their opponents through artificial means. Also in conformity with the above result, it shows that if athletes are knowledgeable enough with regards to the non-usage of drugs, it will not only help prevent them from the risk factors associated with it but also help them aged healthily and actively as reported by *Okuneye, et al. (2011),* which state that athletes' knowledge of non-use of smoking, PEDs, and injury prevention as primary prevention strategies could help prevent premature ageing.

Finally, as evidenced in tables 10, 12 and 14 above, the results show that greater number of respondents had knowledge about the non-usage of cigarette smoking and alcohol consumption, whilst a greater number of them had little or no knowledge about the non-usage of PEDs, aimed as prime prevention strategies in slowing the ageing process as indicated in their respective percentage scores, mean values and standard deviation scores.

Conclusion: This study was conducted with the focus of establishing undeniable facts about NUNC Athletes' charged with the responsibility to represent their institution in intercollegiate sporting competitions, are knowledgeable about the non-usage of drugs like: cigarette smoking, alcohol consumption and performance enhancing drugs [PEDs], aimed as prime prevention strategies in slowing ageing process and to recommend appropriate remedy by which athletes can age actively and healthily. Based on the above findings, it is therefore concluded that a substantial amount of NUNC Athletes' did express in their responses a greater knowledge about the non-usage of drugs like cigarette smoking and alcohol consumption. However, a substantial number of them lack the greater knowledge about the non-usage of performance enhancing drugs [PEDs] aimed as prime prevention strategies in slowing the ageing process which has been referenced in their frequency distribution tables, percentage responses, mean scores and t-values above.

Recommendations: In line with the findings above, the following are therefore recommended; that a thorough supervised sport-skill specific screening be carried out among NUNC athletes prior to any intercollegiate sporting competitions held and that a monthly if not weekly seminars, workshops and focus grouped discussions be held for NUNC athletes in the areas of physical fitness and exercise, health education, wellness and ageing related courses with special reference to the contraindications associated with the use of performance enhancing drugs [PEDs], cigarette smoking and alcohol

consumption by trained and qualified staff members at Njala University, School of Education, Department of Human Kinetics and Health Education.

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