

The relationship between flaccid phallus length, height and foot length in Nigeria: A cadaveric study

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Abstract

Aim: The knowledge of normal size of the external genitalia is of considerable interest. There is a folk myth regarding the relationship of penile size to body height and foot length. This study is aimed at determining the relationship between phallus length and height as well as phallus length and foot lengths in Nigeria.

Material and Methods: This study was conducted using 80 randomly selected cadavers/dead bodies from hospitals and gross anatomy laboratory of universities irrespective of their age differences; with no evidence of penile abnormalities/deformities. Twelve human subjects were used to validate the cadaveric results. Data from the human subjects was self-recorded. Standard measurement processes were observed to obtain the following parameters; flaccid penile length, height, right foot length and left foot length.

Results: Results shows that in cadaveric subjects the mean penile length was 12.32 ± 1.98 SD (range 8-17cm), the mean height was 172.88 ± 10.82 (range 151-217cm), the mean of the right foot was 24.61 ± 1.72 SD (range 21-28) and the mean of the left foot length was 24.76 ± 19.80 SD (range 19-35cm). While in the human subjects the mean penile length was 11.57 ± 2.56 SD (range: 8-14) and the mean height was 176.00 ± 5.12 (range: 168-184). In the human subjects there was a positive correlation between the penile length and height ($r=0.587$; $P=0.045$).

Conclusion: In the cadaveric study there was no significant correlation between phallus length, height and foot length.

Keywords: Flaccid phallus, foot length, height, cadavers, penile lengthening.

INTRODUCTION

A lot of men worry about their penis size and that is one of the reasons why researches are been carried to reveal the average penis length and also reassure many men that they are 'normal. Most men have the wrong idea when it comes to the normal penis size [1]. A study consisting of 92 men who complained of small phallus size at an Egyptian Andrology clinic in Cairo, found out none actually had a small phallus [2]. It would be nice to know the average phallus length to eliminate the concern over what most persons consider a small phallus, which poses a sort of low self-esteem or social handicap to individuals who have such phallus length [1]. A longer penis is perceived to validate sexual functions and fertility potential although that might not be necessarily. There is also need to know the average phallus length that is the normal penis size because men have been misguided to believe the bigger necessarily means better and also increases their chances

when it comes to trying to conceive a child. This is not true because size has nothing to do with fertility and so the start thinking of enlarging their penis, when most of the time nothing is wrong with it and they have the normal penis size [3].

Males think that when you are tall automatically you should have a big phallus and short males tend to have a smaller size¹. Men complaining of a short penis can be treated using the basic principles of sex education with objective methods of penile size evaluation," [2]. Given the presence of free, easily accessible internet pornography, and the rise in aggressive marketing by companies promising a bigger penis through the use of extenders and enlargers, it is easy to see why men have heightened anxieties about their manhood. Knowing the normal length of penis is important in the growing trend of phallus lengthening or enlargement procedures since men are gradually becoming insecure about their penis

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size. Again, knowledge of normal penis length could be useful in manufacturing condoms, catheter and academic purposes [4].

There is this belief that phallus length can be determined from foot length/shoe size, height, finger length and even weight. Some people have the believe that height is a factor in determining the size/length of penis, but this is not true in some cases because there are individuals who have a short stature but have what is considered above average penis length [4]. Researches have been done trying to find out if height has anything to do with phallus length and some researchers agree to this while others disagree that height has nothing to do with phallus length. The same can be said about foot length/shoe size while some agree that there is a major correlation between foot length/shoe size and phallus length [5]. Some still disagree that foot length/shoe size has nothing to do with phallus length [6]. Men who want surgery to increase the length of their penis should try non-invasive methods like penile traction devices or extenders first, and in some cases, even try therapy to make them feel more confident about their bodies before doing any surgery [7].

There have been lots of works on similar subject by several other researchers [8-19].

MATERIAL and METHODS

Research Design: The study was descriptive.

Statement of the problem: Traditionally in Nigeria, myths a taken very seriously in most ethnic groups. Folk myths regarding the relationships of penile size to body height and foot size have been a longtime myth prevalent in Nigerian traditions though there has not been any correlation or relationship established from scientific studies. This was the gap which this study attempted to bridge.

Aim of the Study: This study was aimed at determining the relationship between phallus length, height length and foot length in cadavers.

Criteria for subject selection

Adult male cadaver/dead bodies were used irrespective of their age while subjects with congenital or acquired penile abnormality (e.g. Peyronie's disease, hypospadias, intersex, hypospadias, primroses, penile cancer, and previous penile or prostatic surgery) and amputations of the desired parts under investigation were excluded.

Sample size and Sampling Technique: A total of 80 subjects (68 cadavers, Living humans 12) were randomly selected from hospitals and gross anatomy laboratory of universities in the western region of Nigeria. The human subjects were used as control to compare with data from the cadavers.

Data Collection

All measurements taken were made using a measuring tape and a measuring rule. First the measurement of the height was recorded, then the length of both the right and the left foot were recorded and lastly the measurement of the flaccid phallus was measured. All the measurements

were taken twice and then averaged so as to minimize errors.

The phallus was measured from the root (pubo-penile junction) of the penis to the tip of the glans on the dorsal surface. The foot measurement was from the tip of the first toe or second toe in some cases to the Heel. The height was measured while in a supine position from the crown (vortex) of the head to the heel. Flaccid length was measured from the root (pubo-penile junction) of the penis to the tip of the glans (meatus) on the dorsal surface, where the pre-pubic fat pad was pushed to the bone.

Significance of the Study: This study would be relevant in forensics and biological anthropology.

Duration of the Study: March 3- November 10, 2016

Ethical Clearance: Ethical clearance was obtained from the Research Ethics Committee of University of Ilorin, Nigeria.

Statistical Analysis

The Statistical Package for Social Sciences (Version 23) was the statistical package used, while the Mean+Standard deviation, maximum, minimum and Pearson's correlation was used to analyze the data.

Limitations of the Study

This study was limited to morphometry of the parts investigated.

RESULTS

Table 1 shows the mean, minimum and maximum values of the measured dimensions of the cadaveric subjects; the mean penile length in cadavers was 12.32 ± 1.98 SD (range 8-17cm), the mean height was 172.88 ± 10.82 (range 151-217cm), the mean of the right foot was 24.61 ± 1.72 SD (range 21-28) and the mean of the left foot length was 24.76 ± 19.80 SD (range 19-35cm). Table 2 shows the correlations between the measured parameters; no relationship between phallus length and height in the cadaveric subjects ($r=0.046$; $P=0.684$), no relationship between left foot length and phallus length ($r=0.091$; $P=0.422$), no relationship between phallus length and right foot length ($r=0.204$; $P=0.069$). Table 3 shows the mean minimum and maximum values of the measured dimensions of the human subjects; the mean penile length was 11.57 ± 2.56 SD (range: 8-14) and the mean height was 176.00 ± 5.12 (range: 168-184). In the human subjects there was a positive correlation between the penile length and height ($r=0.587$; $P=0.045$). Table 4a and 4b shows estimating the height from phallus length and the phallus length from height in the human subjects. Here estimation of height can be gotten from penile length and getting the phallus length of an individual can be derived from height. In the human subjects there was a positive correlation between the penile length and height ($r=0.587$; $P=0.045$). Table 5 Using the equation derived from the human subjects, the cadaveric phallus length were reconstructed since the marginal errors from the cadavers phallus length were too large that is the derived cadaveric phallus length from the equation of the human subjects. Table 6, here it

shows determining the relationship between the estimated and original phallus length. Estimated phallus length from height of living samples ($r = 0.045$ $P = 0.684$). Here there is no significant relationship.

Table 1. Mean±S.D, minimum and maximum values of the cadaveric subjects

Parameters	Mean±S.D	Minimum	Maximum
HEIGHT (cm)	172.88±10.85	151.13	217.68
PHL (cm)	12.37±1.98	8.38	17.03
RFL (cm)	24.61±1.72	21.00	28.70
LFL (cm)	24.76±2.41	19.50	35.65

S.D=Standard deviation; PHL=Phallus length, RFL=Right foot length, LFL=Left foot length

Table 2. Correlation of between the measured dimensions

VARIABLES	HEIGHT (cm)	PHL (cm)	RFL (cm)
PHL (cm)	r (R2)	0.046 (0.21%)	1
	P-value	0.684	
RFL (cm)	r (R2)	0.323 (10.44%)	0.204 (4.16%)
	P-value	0.004	0.069
LFL (cm)	r (R2)	0.416 (17.32%)	0.091 (0.83%)
		<0.001	0.422

S.D=Standard deviation; PHL=Phallus length, RFL=Right foot length, LFL=Left foot length

Table 3. Mean±S.D, minimum and maximum values of the human subjects

Variable	Mean±S.D	Minimum	Maximum
HEIGHT (cm)	176.00±5.12	168	184
PHL (cm)	11.57±2.56	8.1	14.5

S.D=Standard deviation; PHL=Phallus length, RFL=Right foot length, LFL=Left foot length

Table 4a. Regression equation for estimating height from phallus length of human subjects

Variables	correlation with Height (cm)			
	R	R ²	P-value	R _e
Phallus length (cm)	0.587	34.51%	0.045	H = 1.1733 (PHL) + 162.43

Table 4b. Regression equation for estimating phallus length from height of human subjects

Variables	correlation with Phallus length (cm)			
	R	R ²	P-value	R _e
Height (cm)	0.587	34.51%	0.045	H = 0.2941 (H) - 40.194

Table 5. Reconstructed phallus length for the 80 cadaveric subject using the derived equation from human subjects

S/N	Height (cm)	1			2		3	
		Original measured phallus length (cm)	Estimated phallus length From height (cm)	Measurement Error Difference	Estimated phallus length From height (cm)	Estimated phallus length From MED (cm)	Estimated phallus length From MED (cm)	
1	167.89	11.68	9.18	2.50	9.96			
2	182.88	10.16	13.59	-3.43	8.44			
3	162.31	10.92	7.54	3.38	9.20			
4	217.68	11.68	23.83	-12.15	9.96			
5	180.34	12.57	12.84	-0.27	10.85			
6	171.45	11.43	10.23	1.20	9.71			
7	162.56	10.67	7.61	3.06	8.95			
8	180.09	11.68	12.77	-1.09	9.96			
9	167.64	11.18	9.11	2.07	9.46			
10	183.01	13.90	13.63	0.27	12.18			

Continuation of Table 5

11	165.35	10.92	8.44	2.48	9.20		
12	166.37	10.16	8.74	1.42	8.44		
13	164.34	11.68	8.14	3.54	9.96		
14	167.64	14.48	9.11	5.37	12.76		
15	187.96	12.19	15.09	-2.90	10.47		
16	168.91	13.97	9.48	4.49	12.25		
17	180.34	15.49	12.84	2.65	13.77		
18	173.99	11.68	10.98	0.70	9.96		
19	170.18	14.73	9.86	4.87	13.01		
20	194.31	16.26	16.95	-0.69	14.54		
21	173.99	10.67	10.98	-0.31	8.95		
22	164.34	16.00	8.14	7.86	14.28		
23	182.88	11.43	13.59	-2.16	9.71		
24	172.72	11.94	10.60	1.34	10.22		
25	158.75	12.70	6.49	6.21	10.98		
26	170.69	11.68	10.01	1.67	9.96		
27	156.46	11.43	5.82	5.61	9.71		
28	170.18	13.46	9.86	3.60	11.74		
29	151.13	13.46	4.25	9.21	11.74		
30	166.37	8.89	8.74	0.15	7.17		
31	187.96	10.16	15.09	-4.93	8.44		
32	198.12	10.67	18.07	-7.40	8.95		
33	154.94	13.21	5.37	7.84	11.49		
34	193.04	16.00	16.58	-0.58	14.28		
35	174.00	15.80	10.98	4.82	14.08		
36	163.00	12.50	7.74	4.76	10.78		
37	159.40	11.20	6.69	4.51	9.48		
38	174.60	13.20	11.16	2.04	11.48		
39	165.70	15.20	8.54	6.66	13.48		
40	165.60	14.20	8.51	5.69	12.48		
41	172.50	14.70	10.54	4.16	12.98		
42	170.60	14.20	9.98	4.22	12.48		
43	164.40	14.40	8.16	6.24	12.68		
44	160.20	14.10	6.92	7.18	12.38		
45	163.50	13.30	7.89	5.41	11.58		
46	162.20	13.00	7.51	5.49	11.28		
47	179.40	13.20	12.57	0.63	11.48		
48	172.30	12.50	10.48	2.02	10.78		
49	163.40	9.90	7.86	2.04	8.18		
50	155.20	11.70	5.45	6.25	9.98		
51	167.00	13.97	8.92	5.05	12.25		
52	179.20	12.67	12.51	0.16	10.95		
53	159.00	12.43	6.57	5.86	10.71		
54	180.20	15.40	12.80	2.60	13.68		
55	170.00	11.20	9.80	1.40	9.48		
56	180.34	10.92	12.84	-1.92	9.20		
57	182.88	17.03	13.59	3.44	15.31		
58	181.86	10.67	13.29	-2.62	8.95		
59	173.99	9.91	10.98	-1.07	8.19		
60	174.50	8.64	11.13	-2.49	6.92		
61	187.96	11.43	15.09	-3.66	9.71		
62	167.64	11.94	9.11	2.83	10.22		
63	172.97	14.22	10.68	3.54	12.50		
64	167.80	11.94	9.16	2.78	10.22		
65	182.00	16.70	13.33	3.37	14.98		
66	176.70	9.90	11.77	-1.87	8.18		
67	166.00	10.94	8.63	2.31	9.22		
68	165.61	11.68	8.51	3.17	9.96		
69	190.50	10.92	15.83	-4.91	9.20		
70	165.10	10.92	8.36	2.56	9.20		

Table 6. Determining the relationship between the estimated and original phallus length

Variables	Cadaveric phallus length			
	R	R ²	P-value	R _e
EPhL from Height (cm)	0.045	0.2%	0.684	N/A

Note: EPhL=Estimated phallus length from height of living samples
r=Pearson's coefficient, R²= Coefficient of determination; R_e=Regression Equation; N/A= not available (reason; no significant relationship)

DISCUSSION

This study showed that there is no relationship between phallus length and height in the cadaveric subjects ($r=0.046$; $P=0.684$). From our results the average flaccid penile length 11.57 ± 2.56 SD(range: 8-14). A study consisting of 500 men ages 18 to 60 published in the International Journal of Impotence Research found flaccid length to be 8.21 cm (3.23 in) [3]. Another study with 271 in Jordan and found the average flaccid length to be 9.31 ± 1.9 (Range 4.0–15) [8]. Choi et al. [9], found that the average penis length was 7.7 ± 1.7 (range 4.0–12.0). Khan et al., [10] found that the mean flaccid length was 10.21 ± 1.4 . Savoie et al. [11], measured the average flaccid length to be 9.3 ± 2.0 . In their study they concluded that the average flaccid penile length was 8.95 ± 1.04 [12]. Another study also measured the average flaccid length to be 9.15 ± 0.7 [13]. It was also found that mean flaccid penis length to be 3.5 inches (8.9 cm) (measured by staff) [14]. A review of several studies by Wylie and Eardley [7] stated that the average flaccid length to be 9–10 cm (3.5–3.9 in). Veale et al. [15], carried out a study on 15,521 men, and the best research to date on the topic, as the subjects were measured by health professionals, rather than self-measured, has concluded that the average length of an flaccid human penis is 9.31cm (3.66 inches) long.

For the living subjects it was found that the mean penile length was 11.57 ± 2.56 SD(range: 8-14) and the mean height was 176.00 ± 5.12 (range: 168-184). In the live subjects there was a positive correlation between the penile length and height ($r=0.587$; $P=0.045$). Again, Ponchiatti et al. [16], found the median average length of flaccid penises was 9 centimeters (3.5 inches) here it was concluded that penile length and circumference correlate with anthropometric parameters such as weight and height. Also Wessels et al. [14], stated that the mean apparent flaccid penile length is 3.5 inches (8.9 cm) with an average of 9–10cm. Furthermore, the study of Lever et al. [17], stated that self-reported penile size correlated positively with height. Mondaini et al. [18], reported that most men who seek penile lengthening surgery 'overestimate' the 'normal' penile length. In their study of 67 patients complaining of 'short penis', none were found to be having a severely short penis. Both flaccid and erected lengths are important as patient's perception of penile inadequacy could be often related to either of this. With regard to the relation of penile size and body measurements, Sutherland et al. [19], stated that the height and weight may be the primary indicators of penile size. In addition, Ponchiatti et al. [16], concluded that flaccid stretched length was measured on average to

about 12.5 cm (4.9 in).

In table 1, the mean phallus length in cadavers is given as 12.37 ± 1.98 while in the living humans it is 11.57 ± 2.56 . It therefore suggests that the phallus length in cadavers had a higher mean value compared to the living subjects. This difference in phallus mean length between the living humans and cadaver could probably be a result of rigor erectus seen in cadavers [20].

In our study for foot length and phallus length there was no relationship.

CONCLUSION

This study will be of great importance because the collection and reporting of scientific data have been used to address the concerns of men with regard to their normality particularly in response to increased reported dissatisfaction with phallus dimensions and increased request for surgical enhancement. With the living subjects there was a correlation between height and phallus length but this is not enough to draw the conclusion that height can determine the phallus length of an individual since the sample size was relatively small. With the cadaveric subjects there was still no correlation even after correcting the error. With foot length and height no correlation was found as stated in table 1 and 2.

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