A Study To Find Out The Health Status By Anthropometric Measurements Of The Childrenof Variousorphanages

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Abstract
The child is deemed to be an orphan, if he loses either his or her father, mother or both and is adjudged to be without any relation who can take care of him. The orphaned child has always been an object of sympathy at all times all over the world. A home or what is called the orphanage is established to provide shelter for the orphan children. The orphanage when it is designed for younger children, is called "Foundling Home", while in general, an orphanage senses as a surrogate home. It provides congenial atmosphere for the growth and development of orphans.
Orphanages has stood up to the great traditions of India, caring for those whom society leaves in the lurch. Children born out of married, unmarried mothers, abandoned and unwanted children.Orphan children are homeless and deprived of normal parental care. As a result, they are usually neglected in the society. Therefore, they are in a constant need of love, affection and care on the part of community and nation. So, it is necessary to assess their health and nutritional status.
Keywords~ Orphan, Anthropometric measurement, Height, Weight, Mid-arm circumferences.

I. INTRODUCTION

In India, the earliest Institution that take care of the orphans was established in Hyderabad in the year 1850 by the Roman Catholic Missionaries. The orphanages were established by both religious and secular organizations. Later in 1865, an institution for the orphan and destitute children was established.

A distinction has been drawn in his connection between as orphanage and a home for delinquent children, however orphanages were supposed to admit destitute children only.

Upto the year 1895, Christian Missionaries alone had realized the need of setting up orphanages. The position during the period of 1896 to 1945 was quite reverse, all the 18 Institutions established. Most of the initiative came from non-religious organizations. Among the religious organizations were Christian Missionaries, Arya Samaj, Rama Krishna Mission and other similar organizations.Now, the major motive of these orphanages is to provide education and protection to these children to make them able to lead life smoothly.

This nutritional status indicates the health of the person, so both are interlinked. Nutrition not only effects the health but also determines one's normal course of growth and development. Recent workers suggest that nutrition predominantly effect the physical dimensions, particularly in the rapidly growing period of early childhood and adolescence. Therefore, physical growth has intimate relationship to nutritional status. The selected body measurements as given demonstrates valuable information concerning certain types of malnutrition in which body size and gross body composition are also affected.

ANTHROPOMETRIC MEASUREMENTS

The methods and the measurements employed in anthropometry canvary greatly in number andcomplexity obviously and those chosen will depend onthe purpose and objectives of the particular surveyor study(Jelliffe,1966).In present investigation, standardized anthropometric methods were used.

Statement of the problem :-

The selected problem for the present study is stated as – **"A Study to findout the HealthStatus by Anthropometric Measurementsof the Children of various Orphanages".**

OBJECTIVES OF THE STUDY:-

1. The study the profile of orphan children run by different organizations in AgraCity.
2. To assess the health status of the orphan children by anthropometric measurements and its correlation with age.
3. To compare anthropometric measurements among the orphan children of various orphanages and with the normal children of Agra.

II. METHODOLOGY

The study area:
The present study was carried out in all the three orphanages situated in the Agra city.

In Agra city, only three orphanages exist. First one is being run by Ram Krishna Mission Society situated at nearby Trans Yamuna Bridge, thesecond by the Government of India at Idgah colony and the third is governed by Christian Missionary at Pratapura Crossing. Investigator carried out the study of all 100 orphan children available there, comprising of both sex and different age groups.

SELECTION OF TOOLS

There are various tools which were used by the investigator for obtaining the useful data. Some toolsselected for the present studywere self-made like - schedule, while others were standard tools such as - thin scale, flexible and non-stretchable measuring tape and weighing machine.

ANTHROPOMETRIC ASSESSMENT AND ITS CORRELATION WITH AGE

Table-1:Mean Height according to Age and Sex of Children Belonging to VariousOrphanages

Various Orphanages	Age Group (Years)	Sex						t	p
		Male			Female				
		No.	Mean	S.D.	No.	Mean	S.D.		
Orphanage-1	6-9	11	120.23	6.09	7	126.71	7.53	2025	> 0.05
	9-12	12	137.17	9.89	6	126.17	3.55	4.610	< 0.05
	12-15	12	147.17	8.84	4	131.88	0.94	13.53	< 0.01
	15-18	5	155.75	4.76	8	147.59	3.36	2200	< 0.05
Orphanage-2	6-9	5	111.50	6.48	8	114.81	6.97	0.855	>0.05
	9-12	3	125.67	3.01	4	128.50	230	2074	>0.05
Orphanage-3	6-9	5	108.55	294	6	113.75	7.99	1.375	> 0.05
	9-12		-	-	4	126.62	286	-	-

Table-1highlights the mean heightaccording to age & sex of the children living in various orphanages. In orphanage-1, mean height was observed more in males as compared to females in all the age groups, except in the age group of 6-9 years. Statistically, significant differences in mean heights were observed between males & females in all the age groups, except in the age group of 6-9 years.

In orphanage-2 & orphanage-3, statistically, no significant differences were found between males & females in 6-9 and 9-12 years of age, inspite of the fact that females were taller than males in corresponding ages.The present study reveals that the mean heights of the males in the age group of 6-9 years ranged from 108.55 to 120.23 cm.The mean height of males & females, at the age groupof 9- 12 years varied from 125.67 to 137.17 cm& 126.17 to 128.50 cm respectively. Present result of mean height was 147.17 cm in the males aged 12- 15 yrs.In the present study, the mean height of males and females were 155.75 and 147.59 respectively.

Table-2: Mean Weight according to Age and Sex of theChildren belonging to various Orphanages

Various Orphanages	Age Group (Years)	Sex						t	p
		Male			Female				
		No.	Mean	S.D.	No.	Mean	S.D.		
Orphanage -1	6-9	11	18.45	230	7	19.89	5.26	1.683	>0.05
	9-12	12	26.47	5.49	6	25.50	3.11	0.376	> 0.05
	12-15	12	32.50	4.31	4	29.62	0.78	5.208	< 0.05
	15-18	5	38.30	3.83	8	40.62	5.61	0.810	> 0.05
Orphanage -2	6-9	5	19.75	226	8	2225	4.25	1.201	>0.05
	9-12	3	22.66	2.02	4	26.43	227	2205	>0.05
Orphanage -3	6-9	5	18.90	1.85	6	20.0	1.67	1.073	>0.05
	9-12	-	-	-	3	25.50	3.11	-	-

Table-2 shows the mean weight of the children of various orphanages according to age & sex. In orphanage-1, males gained more weight in the age group of 9-12 &12-15 years, as compared to females whereas females gained more weight in the age group of 6-9 & 15-18 years. However, insignificant differences were observed in all age groups except in the age group of 12-15 years(where t = 5.208, p<0.05).In orphanage-2 &orphanage-3, mean weight was more for females than males in all the age groups whereas, statistically no significant differences were found between both sex in all age groups.Present study of mean weight in the boys

aged between 6-9 years, varied from 18.45to 19.75 kg. Mean weight of boys & girls in the age groups of 9-12 years ranged between 22.67-26.47 kg. The mean weight of boys &girls aged between 12-15 years ranged from3250 kg to29.62 kg.

Table 3:- Mean Circumference according to Age and Sex of the Children belonging to various Orphanages

Various Orphanage	Age Group (Years)	Sex						t	p
		Male			Female				
		No.	Mean	S.D.	No.	Mean	S.D.		
Orphanage-1	6-9	11	15.48	0.69	7	16.03	1.48	1.099	>0.05
	9-12	12	17.67	1.86	6	17.08	1.49	0.173	>0.05
	12-15	12	19.07	1.97	4	17.00	0.46	8.253	<0.001
	15-18	5	19.90	1.19	8	20.06	1.38	0.210	> 0.05
Orphanage-2	6-9	5	17.55	1.57	8	16.84	1.39	0.310	> 0.05
	9-12	3	18.67	1.26	4	18.12	1.79	0.877	>0.05
Orphanage-3	6-9	5	16.65	1.61	6	15.95	0.65	0.971	>0.05
	9-12	-	-	-	3	18.31	0.62	-	-

The Table-3 deals with the mean circumferencein the children of various orphanages according to age &sex. In orphanage-1, mean circumferencewas observed more in males than females in the age group of 9 - 12 and 12 - 15 yrs. On the contrary, these values were more in girls in the age group of 6 - 9 and 15 - 18 yrs. Statistically, it was noted that difference was significant only in the age group of 12 - 15 years (t= 8.253, p < 0.001).

In orphanage-2, statistically, insignificant differences were found between boys &girls in all age groups inspite of the fact that boys were having more circumference in the corresponding age groups. Similar results were noticed in the children of orphanage-3.In the present study, mean values of circumference in the boys &girls (aged between 6 - 9 yrs.) of all orphanages ranged from 15.48 to 17.55 cm and 15.95 to 16.84 cm respectively.

Further present study shows that the C of the boys &girls in the age group of 9 -12 yrs., was varied from 17.67 to 18.67 cm&17.08 to 18.12 cm respectively.

Table-4: Mean Head Circumference according to Age and Sex of the Children belonging to various Orphanages

Various Orphanages	Age Group (Years)	Sex						t	p
		Male			Female				
		No.	Mean	S.D.	No.	Mean	S.D.		
Orphanage-1	1-9 9-12	11	50.20	1.63	7	50.58	1.99	0.430	> 0.05
	12-15	12	50.95	1.97	6	50.38	1.98	0.306	> 0.05
	15-18	12	5267	1.51	4	5219	1.79	2838	< 0.05
		5	5260	209	8	53.03	1.92	0.381	> 0.05
Orphanage-2	1-9 9-12	5	49.75	217	8	49.71	1.60	0.038	> 0.05
		3	5216	1.12	4	50.56	206	1.176	> 0.05
Orphanage-3	1-9	5	50.20	1.24	6	49.33	0.903	1.350	> 0.05
	9-12	-	-	-	3	50.25	1.30	-	-

The Table-4 reveals the mean head circumference in the children of various orphanages according to age & sex. Mean head circumferenceof males was more in the age group of 9-12 & 12-15 years while, females had slightly more head circumferencein the rest age group 6-9 & 15-18 years.Statistically, difference was significant only in the age group of 12-15 years.

In the children of orphanage-2 and orphanage-3, mean head circum. was slightly higher in boys than girls in all the age groups and statistically, no insignificant differences were found in the mean head circumferences of both sexes.

Table 5:-Mean Chest Circumference according to Age and Sex of the Children belonging to various Orphanages

Various Orphanages	Age Group (Years)	Sex						t	p
		Male			Female				
		No.	Mean	S.D.	No.	Mean	S.D.		
Orphanage -1	6-9	11	57.75	2.80	7	59.00	6.42	0.574	> 0.05
	9-12	12	6212	5.26	6	60.45	3.86	1.218	>0.05
	12-15	12	69.59	5.60	4	66.00	3.43	2.959	< 0.05
	15-18	5	7200	6.98	8	78.96	7.80	2250	> 0.05
Orphanage -2	6-9	5	54.4	228	8	56.40	3.71	1.076	>0.05
	9-12	3	58.5	278	4	63.93	4.29	2142	> 0.05
Orphanage -3	6-9	5	55.0	1.29	6	54.83	3.08	0.114	> 0.05
	9-12	-	-	-	3	61.18	1.30	-	-

Table-5indicates the mean chest circumference in the children of various orphanages according to age and sex. In orphanage-1, chest circumference was higher in females than males in the age group of 6 - 9 & 15 - 18 years. On the other hand, boys had more chest circum. in the age group of 9 - 12 & 12 - 15 years. Statistically significant difference was observed in the age group of 12 - 15 years. However, these differences were reverse in the remaining age group.

In orphanage-2, higher mean chest circum. was observed for females than girls in all the age groups while, differences were insignificant in the all-age groups statistically.

In orphanage-3, mean chest circum. was slightly more in males than females. However, insignificant differences were observed between both sexes.

Table-6: Correlation of age with anthropometric measurements in the male and female children of orphanage-1

Anthropometric Measurements	Male Children (n = 40)					Female Children (n =25)				
	Mean	S.D.	r	t	p	Mean	S.D.	r	t	p
Age (6-18yrs)	10.85	3.06	-	-	-	11.52	3.82	-	-	-
Height (cm.)	137.37	14.29	0.789	7.920	< 0.01	135.50	11.54	0.742	5.310	< 0.01
Weight (kg.)	27.28	7.86	0.770	7.456	< 0.01	29.93	9.50	0.883	9.0'li,	< 0.01
Head Cir (cm.)	51.63	202	0.526	3.813	<0.05	51.73	220	0.485	2661	< 0.05
Chest Cir (cm.)	64.12	7.26	0.676	5.655	< 0.01	66.54	10.23	0.710	4.830	< 0.05
M.U.A.C. (cm.)	17.82	220	0.663	5.461	< 0.01	17.90	206	0.682	4.475	< 0.05

The Table-6 highlights the correlation of age with various parameters in the children of orphanage-1. It is clear that statistically all anthropometric values viz., height, weight, head circumference, chest circumference&circumference were positively correlated with age. All anthropometric measurements were increased with age.

Table-7: Correlation or age with Anthropometric Measurements in the Male and Female Children of Orphanage-2

Anthropometric Measurements	Male Children (n =8)					Female Children (n = 12)				
	Mean	S.D.	r	t	p	Mean	S.D.	r	t	p
Age (6-12 yrs.)	8.0	1.60	-	-	-	8.08	1.92	-	-	-
Height (cm.)	116.87	8.08	0.964	8.8&0	< 0.01	119.89	8.83	0.892	6.245	< 0.01
Weight (kg.)	20.53	245	0.769	2948	<0.05	2288	4.11	0.612	2448	< 0.05
Head Cir (cm.)	50.75	220	0.424 .	1.147	> 0.05	50.08	1.57	0.512	1.885	> 0.05
Chest Cir (cm.)	55.88	2.97	0.832	3.899	< 0.05	59.20	5.29	0.949	9.528	< 0.01
M.U.A.C. (cm.)	17.65	1.23	0.542	1.580	> 0.05	17.50	1.65	0.248	0.803	< 0.05

The Table-7 shows the correlation of age with various parameters of thechildren living in orphanage-2. Height, weight & chest circumferenceof males & females were found significantly positively correlated with age, statistically. However, there were weak correlation regarding their head circumference and mid upper arm circumference statistically.

Table 8:- Correlation or age with Anthropometric Measurements in the Male and Female Children of Orphanage-3

Anthropometric Measurements	Male Children (n=5)					Female Children (n=10)				
	Mean	S.D.	r	t	p	Mean	S.D.	r	t	p
Age (6-10 yrs.)	6.80	0.836	-	-	-	8.0	1.76	-	-	-
Height (cm.)	109.50	2.73	0.680	3.798	< 0.05	117.00	6.85	0.889	5.492	< 0.01
Weight (kg.)	19.50	212	0.871	3.073	< 0.05	24.00	4.06	0.778	3.492	< 0.05
Head Cir (cm.)	50.35	1.34	0.781	2166	> 0.05	49.85	1.24	0.521	1.730	> 0.05
Chest Cir (cm.)	54.30	1.64	0.928	4.326	< 0.05	57.30	4.28	0.733	3.050	< 0.05
M.U.A.C. (cm.)	16.90	1.81	0.905	3.754	< 0.05	17.10	1.34	0.661	2496	<0.05

Table-8 indicates the correlation of age with various parameters in the children of orphanage - 3. All the parameters except head circumference of males &females were significantly positively correlated with age statistically. There was weak correlation in the head circumference of male and female children.

Table-9:Comparison of correlation between male and female children's various orphanages

Anthropometric Measurements	Children of Orphanage -1				Orphanage -2				Orphanage -3			
	Correlation		z	p	Correlation		z	p	Correlation		z	p
	Male n = 40	Female n = 25			Male n = 8	Female n = 12			Male n = S	Female n = 10		
	r1	r2			r1	r2			r1	r2		
Height (cm.)	0.789	0.742	0.108	> 0.05	0.964	0.892	0.066	> 0.05	0.680	0.889	0.141	>0.05
Weight (kg.)	0.770	0.883	0.218	> 0.05	0.769	0.612	0.184	> 0.05	0.871	0.778	0.053	> 0.05
Head Cir (cm.)	0.526	0.485	0.087	> 0.05	0.424	0.512	0.131	> 0.05	0.781	0.521	0.225	> 0.05
Chest Cir (cm.)	0.676	0.710	0.071	> 0.05	0.832	0.949	0.098	> 0.05	0.928	0.733	0.128	>0.05
M.U.A.C. (cm.)	0.663	0.682	0.072	> 0.05	0.542	0.248	0.462	> 0.05	0.905	0.661	0.172	> 0.05

The Table 9 presents the sex-wise correlation of age with anthropometric measurements in the children of various orphanages. Further, there correlation was tested by using the Z-test. The comparison showed that all the correlation of age with anthropometric measurements between male and female children of various orphan ages were found statistically insignificant (p> 0.05). Thus, therefore, it may be concluded that the growth pattern between male and female were found similar.

Table-10: Comparison of Anthropometric Measurements among the Boys (aged between 6·9 Yrs.) of various Orphanages

Anthropometric Measurements	Boys (n =11) of Orphanage-1		Boys (n =5) Orphanage-2		Boys (n =5) of Orphanage-3	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Height (cm.)	120.23	6.09	111.50	6.48	108.55	2.94
Weight (kg.)	18.45	230	19.75	226	18.90	1.85
Head Cir (cm.)	50.28	1.63	49.75	217	50.20	1.24
Chest Cir (cm.)	57.75	2.80	54.40	2.28	55.0	1.28
MUAC (cm.)	15.48	0.69	17.55	1.57	16.65	1.61

ANOVA

Anthropometric Measurements	1Vs2		1Vs3		2Vs3	
	t	p	t	p	t	p
Height (cm.)	2590	< 0.05	5.296	< 0.01	1.750	> 0.05
Weight (kg.)	0.792	> 0.05	0.833	*>0.05*	0.653	> 0.05
Head Cir (cm.)	0.468	> 0.05	1.103	> 0.05	0.338	> 0.05
Chest Cir (cm.)	2329	*<0.05*	7.062	< 0.01	0.446	> 0.05
MUAC (cm.)	2140	< 0.05	2.543	< 0.05	0.051	> 0.05

The table-10 shows the comparison of Anthropometric Measurements among the boys of different orphanages. Mean height & chest circumferencewere more in the boys of orphanage- I. While, mean weight & mid upper arm circumference were more in the boys of orphanage-2. Statistically, significant differences were observed in mean height, chest circumference& mid upper arm circumferenceamong the boys of orphanage-1 & 2 and orphanage - 1 & 3, while there was no insignificant difference in head Circumference among these children. There were insignificant differences between the boys of orphanage -2 & 3 regarding all anthropometric measurements.

Table11:- Comparison of Anthropometric Measurements among the Girls (aged between 6-9 Yrs.) ofvarious Orphanages

Anthropometric Measurements	Girls (n =11) of Orphanage-1		Girls (n =5) Orphanage-2		Girls (n =5) of Orphanage-3	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Height (cm.)	126.71	7.53	114.81	6.97	113.75	7.98
Weight (kg.)	19.89	5.26	2225	4.25	20.0	1.67
Head Cir (cm.)	50.57	1.98	49.71	1.60	49.33	0.903
Chest Cir (cm.)	59.00	6.42	56.40	3.71	54.83	3.08
M.U.A.C. (cm.)	16.03	1.47	16.84	1.39	15.95	0.120

ANOVA

Anthropometric Measurements	1Vs2		1Vs3		2Vs3	
	t	p	t	p	t	p
Height (cm.)	3.188	< 0.05	4.12	< 0.05	0.277	> 0.05
Weight (kg.)	0.989	> 0.05	0.115	>0.05	1.271	> 0.05
Head Cir (cm.)	0.923	> 0.05	1.522	> 0.05	0.520	> 0.05
Chest Cir (cm.)	0.981	<0.05	1.489	< 0.05	0.869	> 0.05
MUAC (cm.)	1.092	< 0.05	0.120	< 0.05	1.350	> 0.05

Table-12: Comparison of Anthropometric Measurements among the boys (aged between 9- 12 Yrs.) of various Orphanages

Anthropometric Measurements	Boys (n = 11) of Orphanage-1		Boys (n =5) Orphanage - 2		t	p
	Mean	S.D.	Mean	S.D.		
Height (cm.)	137.17	9.89	125.67	3.01	1.982	> 0.05
Weight (kg.)	26.41	5.49	2267	2.02	1.290	> 0.05
Head Cir (cm.)	50.95	1.96	52.16	1.12	1.560	> 0.05
Chest Cir (cm.)	6212	5.25	58.50	278	1.760	> 0.05
M.U.A.C. (cm.)	17.17	1.85	18.67	1.26	0.852	> 0.05

The table-11 reveals the comparison of anthropometric measurements between the orphanage-1& 2. Mean values of height, weight & head circumferencewere more in the boys of orphanage-1. While, chest circumference and mid upper armcircumference were more in the boys of orphanage-2. However, statistically insignificant differences were found in all anthropometric measurements. (p> 0.05)

Table 13: Comparison of Anthropometric Measurements among the Boys (aged between 9- 12 Yrs.) of various Orphanages

Anthropometric Measurements	Boys (n =11) of Orphanage-1		Boys (n =5) Orphanage-2		Boys (n =5) of Orphanage-3	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Height (cm.)	126.17	3.55	125.67	2.30	126.62	2.86
Weight (kg.)	25.50	3.11	26.43	227	25.50	3.11
Head Cir (cm.)	50.38	1.97	50.62	206	50.25	1.30
Chest Cir (cm.)	60.46	3.86	63.93	4.29	61.18	1.30
M.U.A.C. (cm.)	17.08	1.19	18.12	1.12	18.31	0.625

ANOVA

Anthropometric Measurements	1Vs2		1Vs3		2Vs3	
	t	p	t	p	t	p
Height (cm.)	1.520	>0.05	0.218	> 0.05	1.04	> 0.05
Weight (kg.)	0.345	>0.05	1.069	> 0.05	0.486	> 0.05
Head Cir (cm.)	0.144	> 0.05	0.110	> 0.05	1.217	>0.05
Chest Cir (cm.)	0.571	> 0.05	0.633	> 0.05	1.124	> 0.05
MUAC (cm.)	1.385	>0.05	2010	>0.05	0.296	> 0.05

The table 13 presents the comparison of anthropometric measurements among the children of various orphanages. Mean values of weight, head circumference& chest circumferencewere more in the girls of orphanage - 2 while mean height &mid upper arm circumferencewere more in the girls of orphanage - 3. Statistically insignificant differences were observed in al1 anthropometric measurements between the girls of various orphanages. (p> 0.05)

Table - 13: Comparison of Mean Height Between The Normal &Orphan Girls

Children	6-9 years			9-12 years			12-15 years			15-18 years		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
*Normal	18	118.11	6.68	21	133.28	6.04	37	145.67	7.57	23	154.50	5.79
Orphanage -1	7	126.71	7.53	6	126.16	3.55	4	131.88	0.946	8	147.59	7.37
Orphanage -2	8	114.81	6.97	4	118.11	6.68	-	-	-	-	-	-
Orphanage -3	5	113.75	7.99	3	126.62	2.86	-	-	-	-	-	-
Normal Vs Orphanage-1	t	2.798		2.737			4.296			2.715		
	p	< 0.05		< 0.05			< 0.05			< 0.05		
Normal Vs Orphanage-2	t	1.151		1.544			-			-		
	p	> 0.05		> 0.05		-	-			-		
Normal Vs Orphanage-3	t	1.383		1.164			-			-		
	p	> 0.05		> 0.05			-			-		

The table-13 indicates the comparison of mean height between the normal & orphan girls in various age groups. In orphanage-1, mean height was less in orphan girls as compared to normal girls in all age groups except in the 6-9 years of age where orphan girls were taller than normal, statistically significant differences were observed in all age groups. In orphanage-2 & 3, mean heights were less in the orphan girls as compared to normal girls. However, statistically, insignificant differences were found in all age groups. (p > 0.05)

Table -14: Comparison of Mean Weight between the Normal and Orphan Boys

Children	6-9 years			9-12 years			12-15 years			15-18 years		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
*Normal	24	22.50	3.19	24	30.43	5.48	39	37.65	2.46	14	47.64	7.80
Orphanage - 1	11	18.45	130	12	26.41	5.49	12	32.50	4.31	5	38.30	3.83
Orphanage - 2	5	19.75	Z26	3	22,67	2.02	-	-	-	-	-	-
Orphanage - 3	5	18.90	1.85	-	-	-	-	-	-	-	-	-
Normal Vs Orphanage - 1	t	3.785			2.079			5.266			2,542	
	P	<0.05			<0.05			<0.05			<0.05	
Normal Vs Orphanage - 2	t	1.141			2.040			-			-	
	P	>0.05			>0,05			-			-	
Normal Vs Orphanage - 3	t	1.709			-			-			-	
	P	>0.05			-			-			-	

* Normal Children :- Source - Given in Appendix -IV

The Table-14 high lights the comparison of mean weight between the normal & orphan boys in various age groups. Mean weights were lesser in all orphan boys than the normal boys in all age groups. Statistically significant differences were found between the normal & orphan boys of orphanage-1 in all age groups. However, differences were insignificant in the normal & orphan boys of orphan age - 2 &3 in all age groups.

Table-15 : Comparison Of Mean M.U.A.C. Between The Normal And Orphan Girls

Children	6-9 years			9-12 years			12-15 years			15-18 years		
	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.	No.	Mean	S.D.
*Normal	18	17.30	2.49	21	20.31	4.67	37	20.52	2.25	23	22.89	2.31
Orphanage - 1	7	16.03	1.47	6	17.09	1.19	4	17.80	0.456	8	20.06	1.38
Orphanage - 2	8	16.84	1.39	4	18.12	1.79	-	-	-	-	-	-
Orphanage - 3	5	16.65	1.61	3	18.13	0.625	-	-	-	-	-	-
Normal Vs Orphanage - 1	t	0.556			1.662			2.123			3.242	
	P	>0.05			>0.05			<0.05			<0.05	
Normal Vs Orphanage - 2	t	0.489			0.914			-			-	
	P	>0.05			>0.05			-			-	
Normal Vs Orphanage - 3	t	0.622			0.838			-			-	
	P	>0.05			>0.05			-			-	

The table 15 shows the comparison of mean mid upper armcircumferencebetween the normal & orphan girls in various age groups. In all orphanages, girls had lower mid-arm circumferences than the normal girls in all age groups. Statistically, these differences were significant in the 12-15 & 15-18 years. While, these differences were insignificant in the remaining age groups. In orphanage-2 & 3 these differences were insignificant in all age groups.

III. CONCLUSIONS

Thus, it is concluded that health status of the orphan children was found very poor.

All of the anthropometric values of these children were below the normal children of Agra city.Further, it was observed that health status was better of the children belonging to Orphanage -2 and compared to Orphanage-1.

REFERENCES

[1]. Agrawal JC (1985): Educational Research An Introduction , 2nd edition, Arya Book Depot , New Delhi 160-192

[2]. Bai,Raghubar Prashad (1979):Nutritional and Anthropometric Profile of primary school children in Andhra Pradesh, Indian Pediatrics, volume 16 no. 12, P1085 -90.

[3]. Goyal, R C, et al, (1983): Health Status of School Children in Ahmedabad City, Ind Journal of Maternal and Child Health, 4 (3) P 81-83.

[4]. Jain A: A Study on Food Habits of Adolescents and its correlation with Anthropometric Measurements, Dissertation, P 18 -2.

[5]. Phillips W S K : Street Children In India , Rawat Publications, New Delhi.

[6]. Soati S et al: Comparative Study on the Nutritional Status of Children from Orphanages run by Different Religious Organizations, Proceeding of Nutrition Society of India. No.34, N I N, Hyderabad.

[7]. Easwaran P et al ,(1984) : Growth Performance and Secular Trends among School Children of Coimbatore , The Indian Journal Nutrition and Dietetics , 21, P 355-61.