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Health Seeking Behavior, Fertility and Mortality Trends among Particularly Vulnerable Tribal Groups in Visakha Agency Area of Andhra Pradesh, India

S. Narayana Rao

Research Associate, I.C.M.R, Department of Anthropology, Andhra University, Visakhapatnam. E-mail: snraoanthro@gmail.com

Abstract: The epidemiological history of tribes in India clearly shows very poor health and nutritional status, high fertility, morbidity and mortality rates in many tribal communities of different tribal pockets. This situation is still worst in the case of Particularly Vulnerable Tribal Groups living in most economic backward condition, geographical isolation, lack of livelihood resources and in access to public health facilities. Generally the ecology of tribes and in specific to PVTGs is known as 'ecology of malnutrition' and "endemic zone for malaria". The tribes inhabiting in the tropical forest zones are very frequently affected with the tropical diseases like Malaria, Yaws, Dengue, Goiter, G6PD deficiency, Cholera, Sickle cell anemia, and Diarrhea. For curing various diseases through which they affected, still mainly depending on their own indigenous medical system. This research paper explains about the health seeking behavior of PVTGs like Gadaba, Kondh and Porja living in visakha agency forest ecology, which is part of Eastern Ghats eco-system of Andhra Pradesh. It also deals with the fertility and morality trends in the PVTGs population of sample households covering the afore said three tribes concentrated in Chinthapalli mandal of Paderu ITDA Tribal- Sub Plan area. The data obtained from 290 sample women in reproductive age group of 15-49 years. This paper provides both quantitative and qualitative explanations with evidence of both etic and emic perspectives of Anthropological significance and relevance.

Keywords: Tribe, Epidemiology, Reproductive Child health, Health Seeking Behavior, Particularly Vulnerable Tribal Groups, Visakha Agency

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Introduction

In general, the tribals exhibits very poor health and nutritional status, added with high incidence of malnutrition, morbidity and mortality. Moreover, very poor maternal and child health observed in many tribal communities of India. The health and nutritional situation of particularly vulnerable tribal groups population is very pathetic and precarious condition. The fertility and mortality rates are also very high among PVTGs population, when compared to other tribes and castes in rural and urban India. The tribal population in India is distributed in almost all the states except Haryana and Punjab. Large chunk of tribal population in India is concentrated in high altitude forested zones like Eastern Ghats, Western Ghats, North-Eastern, Central and Himalayan Mountains. Some section of tribal population in India is also found to live in deserts, islands and plain areas. The aboriginal people inhabiting in the tropical forest zone are very frequently affected with the Malaria, Dengue, Goiter, Yaws, Genetical disorders like sickle cell anemia, G6PD deficiency, red cell enzyme deficiency and water borne diseases.

The newly carved Andhra Pradesh State consists of 34 tribes with the population of 27,39,919 (5.53%) as per 2011 census. The tribal population in the state is distributed in all the districts with varied in number. Large chunk of tribal population in this state is concentrated in tribal sub-plan areas of Visakhapatnam, Vizianagaram, Srikakulam, East Godavari, West Godavari, Prakasam, Kurnool and Guntur districts. The district Visakhapatnam represents sixteen major tribes with the population of 6, 18,500 which constitutes 14.42% to total population of the district. The high concentration of tribal population in the district is found in the Tribal Sub-Plan area of Paderu area mainly distributed in the tribal mandals of Arakuvalley, Ananthagiri, Dumbriguda, Hukumpeta, Paderu, Pedabayalu, Munchingiput, Gangaraju Madugula, Chinthapalli, Gudem Kothaveedhi and Koyyuru, where the present research study is ongoing with the financial support of I.C.M.R, New Delhi. The study is mainly focusing on Particularly Vulnerable Tribal Groups (PVTGs) like Gadaba, Kondh and Porja. The data collected on these three tribes in Chinthapalli mandal on the issues of health seeking behavior, fertility and mortality trends, presented in this research paper with qualitative and quantitative explanations. It also tries to present a few earlier relevant studies findings on the health issues of tribes and PVTGs. The health problems of tribal communities of India and more specifically PVTGs still need special attention from health administration at central and states levels. The available earlier research studies on tribal health problems clearly pointed out that tribal population has distinctive health problems which are mainly governed by their habitat, difficult terrains, and ecologically viable niches

(Basu S 1996), The health, nutrition and medico-genetic problems of diverse tribal groups have been found to be unique and present a formidable challenge for which appropriate solutions have to be found out by planning and evolving relevant research studies. The Primitive Tribal Groups (PTGs) of India (now termed as PVTGS) have special health problems and genetic abnormalities like sickle cell anemia, G6PD, red cell enzyme deficiency and sexually transmitted diseases (Commissioner Report for Scheduled Tribes and Scheduled Castes (1986-87). In sanitary conditions, ignorance, lack of personal hygiene and health education are the main factors responsible for their ill health. Some primitive tribal communities are facing extinction like the Onges, Jarawas and Shompens of Andaman and Nicobar Islands. Certain of the health problems as indicated by the investigations include a) endemic diseases like Malaria, introduced from outside or otherwise like tuberculosis, influenza, dysentery, high infant mortality and malnutrition b) Venereal diseases, induced abortion, inbreeding, addition to option, custom of easing tubers of discern (may cause sterility as they contains substances used in oral contraception) and c) disturbed sex ratios leading shortage of women. Still lot of research studies are required on different primitive tribes of India, which are small in size and vulnerable to various kinds of diseases (Subramanyam. V et al. 2006).

Deforestation and environment degradation directly affects the health and wellbeing of tribals in the poor and under developed regions. The forest degradation has resulted to the disappearance of certain varieties of edible roots, tubers, fruits, medicinal plants, small animals like wild goats, sheep, pigs, rabbits, fowls etc., in many areas which affected the nutritional standards of the tribal population and increases mortality rate (Subramanyam V and B. Veerabhadrudu 2014), Maternal Mal-nutrition is quite common among the tribal women especially those who have many pregnancies too closely spaced. Tribal diets are generally grossly deficient in calcium, Vitamin-A, Vitamin-C, Riboflavin and animal protein (Subramanyam V, et al. 2006). Experts opined that the established tribal health seeking behavior should not be under estimated citing them as illiterate or superstitious. Even today, major sections of PVTGs are not ready to accept modern healthcare system because of their cultural background (Nayak 2014). It is assumed that health behavior depends on heath culture, geographical area and eco system. Medical Anthropologists opined that modern health programmes failed to respect tribes inherited culture, emotions and spiritual meanings associated with health and disease. Moreover, it is found that health seeking behavior of the tribes varies according to the type of illness, causation of illness, gender and age of the persons affected by a disease and illness. Hence, health interventions must be culture specific.

The Study Area and Results

The study was conducted in Chinthapalli mandal of Paderu, I.T.D.A, covering the PVTGs like Gadaba, Kondh and Porja inhabitating in the villages such as Samaraveedhi, Cheruvuveedhi, Mulagaruva, Gadedalametta, Daily Nagar, Ganjigedda, Chinakothuru, Porlubanda, Pinakohuru, Chinagedda, Kandulagadhi, Thotamamidi, K.Ganjigedda, Chikatimamidi, Chedalapadu and Kolapari. Out of the total villages, Chinagedda village represents all three PVTGs, whereas Kondulagadhi represnts two tribes namely Kondh and Porja. The Gadaba sample women covered in the villages, Samaraveedhi, Gadedalametta, Daily Nagar, Ganjigedda and Chinagedda, whereas the Porja sample women covered in Chinagedda Kandulagadhi. The Kondh women sample covered in the villages of Mulagaruva, Chinakothuru., Porlubandha, Pinakothuru, Chinagedda, Kandulagadhi. K.Ganjigedda, Chikatimamidi Chedalapadu and Kolapari. About 62.17% of sample households (women) covered in Kondh tribe of these villages.

Table 1: Village and tribes wise number of sample households / women covered in Chinthapalli Mandal

S No	Name of the village	_	Name of the tr	ribe	Total	% to total sample
		Gadaba	Khond	Porja		respondents
1	Samaraveedhi	19			19	6.25
2	Cheruvuveedhi	12			12	3.95
3	Mulagaruva		22		22	7.24
4	Gadadelametta	11			11	3.62
5	Dailynagar	21			21	6.91
6	Ganjigedda	11			11	3.62
7	Chinakohuru		16		16	5.26
8	Porlubanda		3		3	0.99
9	Pinakohuru		20		20	6.58
10	Chinagedda	8	15	11	34	11.18
11	Kandulagadhi		20	22	42	13.81
12	Thotamamidi		10		10	3.29
13	K.Ganjigadda		21		21	6.91
14	Chikatimamidi		4		4	1.32
15	Chedalapadu		25		25	8.22
16	Kolapari		33		33	10.85
	Total	82 (26.97%)	189 (62.17%)	33 (10.86%)	304	100.00

The table 1 presents the data pertaining to village and tribe wise number of sample households / women covered in Chinthapalli mandal. Totally 304 households were covered and in which 290 women were selected and obtained the data. Out of the total selected households, 82 (26.97%) belongs to Gadaba tribe, 189 (62.17%) belongs to Khond tribe, and the rest 33(10.86%) belongs to Porja tribe. It is clear that the large sample households and women represents from Khond tribe, followed by Gadaba and Porja respectively.

Table 2: Tribe and sex wise population Distribution in sample households of the selected villages in Chinthapalli mandal

SNo	Name of the			Name o	f the tribe	?		Total	% To Total
	village	Ga	daba	K	bond	Pe	orja	males and	population
		Male	Female	Male	Female	Male	Female	females	
1	Samaraveedhi	46	49	-	-	-	-	95	5.93
2	Cheruvuveedhi	32	32	-	-	ı	-	64	3.99
3	Mulagaruva			51	66			117	7.30
4	Gadadelametta	34	26	-	-	-	-	60	3.75
5	Dailynagar	55	47	-	-	-	-	102	6.37
6	Ganjigedda	32	26	-	-	-	-	58	3.62
7	Chinakohuru	-	-	40	44	-	-	84	5.24
8	Porlubanda	-	-	12	5	-	-	17	1.06
9	Pinakohuru	-	-	54	48			102	6.37
10	Chinagedda	18	21	41	40	29	28	177	11.05
11	Kandulagadhi	-	-	49	53	60	60	222	13.86
12	Thotamamidi	-	-	23	29	-	-	52	3.25
13	K.Ganjigadda	-	-	57	67	-	-	124	7.74
14	Chikatimamidi	-	-	11	11	-	-	22	1.37
15	Chedalapadu	-	-	67	66	ı	-	133	8.30
16	Kolapari	-	-	86	87	-	-	173	10.80
	Total	217	201	491	516	89	88	1602	100.00

The table 2 shows about tribe and sex wise population distribution in sample households of the selected villages in Chinthapalli mandal. The sample households covered consists of total population of 1602, out of which 797 (49.75%) are males and 805 (50.25%) are females. The women population is slightly higher than the male population in sample households. In general in the study area as well as in many tribal communities, the female population is higher than the male population. In tribal society, the parents prefer girl child rather than boy child why because on

the economic ground, the females contribute more income to their families when compared to males. The data shows sex ratio is imbalanced but gender discrimination does not exist in tribal society. The tribes covered in the selected sample villages are Gadaba, Khond and Porja. Out of the total population of sample households, 26.09% of them belong to Gadaba tribe, 62.86% of them belongs to Khond tribe and 11.05% of them belongs to Porja tribe. Large chunk of sample population represents Khond tribe, followed by Gadaba and Porja respectively. In the sex wise population female's number in slightly higher than males.

Table 3: Age group wise sample population covered in Chinthapalli mandal

Age group	Sex wise j	population	Total	% to total
	Male	Female		
1yr	83	66	149	9.30
2-11yrs	242	305	547	34.14
12-21yrs	120	96	216	13.50
22-31yrs	143	192	335	20.91
32-41yrs	116	60	176	10.99
42-51yrs	41	60	101	6.30
52-60yrs	14	11	25	1.56
>61yrs	38	15	53	3.30
Total	797	805	1602	100.00

The Table 3 presents the data related to age group wise sample population covered in Chinthapalli manadal. From the table it is noticed that out of the total sample population 34.14% of them falls in the age group of 2-11 years 20.91% of them falls in the age group of 22-31 years, 13.50% of them falls in the age group of 12-21 years. 10.99% of them falls in the age group of 32-41 years, 9.30% of them falls in the age group of one year, 6.30% of them falls in the age group of 42-51 years, 3.30% of them falls in the age group of above 61 years and the rest 1.56% of them falls in the age group of 52-60 years. The data clearly indicates that about 51% of the females population belongs to the reproductive age group of 15-49 years. It is interesting to note that more than 50.20% of population are children in the age group of 1-15 years. The old age population is very less in number, not exceeds more than 5%. In general the life span period is very less in tribal population due to high incidence of malnutrition and morbidity. Moreover, the mortality rate is also very high in PVTGs population when compared to other tribes and general population.

Table 4: Tribe and Age wise mothers sample covered in Chinthapalli mandal

S.No	Age group	Tr	ribe wise sample cove	red	Total	% to total
	0 0 1	Gabada	Khond	Porja		
1	18	-	1	-	1	0.34
2	20	3	3	-	6	2.07
3	21	1	3	-	4	1.38
4	22	10	13	1	24	8.27
5	23	8	17	2	27	9.31
6	24	4	2	1	7	2.41
7	25	10	20	4	34	11.72
8	26	10	27	2	39	13.44
9	27	-	6	-	6	2.07
10	28	3	11	5	19	6.55
11	29	3	15	2	20	6.90
12	30	9	22	1	32	11.03
13	31	3	3	2	8	2.76
14	32		6	-	6	2.07
15	33	3	4	-	7	2.41
16	34	1	3	-	4	1.38
17	35	4	5	1	10	3.45
18	36		6	-	6	2.07
19	37	3	2	-	5	1.72
20	38	3	7	1	11	3.80
21	40	1	1	1	3	1.03
22	42	-	2	-	2	0.70
23	43	-	2	-	2	0.70
24	44	2	3	-	5	1.72
25	45	2	-	-	2	0.70
	Total	83	184	23	290	100.00

The Table 4 presents the data pertaining to tribe and age wise mothers sample covered in the selected villages in Chinthapalli mandal. Out of the total 290 mothers respondents, 184 (63.45%) belongs to Khond tribe, 83(28.62%) belongs to Gadaba tribe and 23 (7.93%) belongs to Porja tribe. The total respondents of three tribes falls in the age group of 18-45 years out of which large majority of the respondents (71.70%) falls in the age group of 22-30 years, 3.79% them falls in the age group of 18-21 years, 12.07% them falls in the age group of 31-35 years, and the rest 12.44% of them falls in the age group of 36-45 years. Majority of the sample respondents are in the adult age group and now adult marriage is in practice instead of child marriage, once it was in vogue especially in tribal society.

Table 5: Village and tribe wise sample respondents affected with various kinds of diseases during household survey

SN_0	Name of the	Name of				S.	Hered ans	Suffered with disease				Total	% to
1	Village	the Tribe	foarow	ianndica	malania	Prophat	body	Ctomach	Coarid	danos	Not afforted		Total
	280111	20117	Jener	jaunane	Jever Jaumane manara typnota vody stomach	uypoota	pains	stomacn pain	Covu Tika	cougn, cold,	and suffered		10101
							٠	4	effect /	fever	with any		
									body		kind of		
									pains		diseases /		
-	Samaraveedhi	Gadaba	7		3	-	2	-	Juniuite 1	1	11111033	15	5.17
2	Cheruvuveedhi	Gadaba	3		2		7					7	2.41
3	Mulagaruva	Khond	13	3	3		2				3	24	8.27
4	Gadadelametta	Gadaba	5	5						1		11	3.79
5	Dailynagar	Gadaba	4	4	2	3	5	3			4	25	8.62
9	Ganjigedda	Gadaba	3	2		1	1	4				11	3.79
7	Chinakohuru	Khond	9	3		2	2	2				15	5.17
8	Porlubanda	Khond		1	1			1				3	1.03
6	Pinakohuru	Khond	12	7						1		20	68.9
10	Chinagedda	Khond	3		3		1					23	7.93
		Gadaba	rΟ		7		7						
		Porja	4	1	1		1						
11	Kandulagadhi	Khond	8	9						1		28	9.65
		Porja	8	3						2			
12	Thotamamidi	Khond	7	3								10	3.44
13	K.Ganjigadda	Khond	12	4								16	5.51
14	Chikatimamidi	Khond	1	1								2	0.68
15	Chedalapadu	Khond	24	1	1							26	8.96
16	Kolapari	Khond	30	3	3	2					16	54	18.62
	Total	1	155	47	21	6	18	11	1	5	23	290	100.00

The Table 5 presents the data pertaining to village and tribe wise sample respondents affected with various kinds of diseases during household survey. The respondents are affected with the diseases like fever, jaundice, malaria, typhoid, body pains, stomach pain, cough and cold. From the table it is noticed that 155 (53.45%) respondents were affected with various kinds of diseases. Out of the total morbidity cases in the sample 47(16.21%) of them affected with Jaundice, 21 (7.24%) of them affected with malaria, 9(3.10%) of the affected with Typhoid, 29(10.00%) of them affected with body and stomach pains. About 23(7.93%) respondents are not affected and suffered with any kind of ailment at the time of survey. In general, the study area is considered as malaria endemic zone, very frequently the tribals affected with it. The data clearly indicates that majority of the sample respondents women affected with Jaundice, Malaria and body and stomach pains. A few typhoid cases also recorded in the sample women in the study area.

Table 6: Type of treatment taken by the respondents from selected sample villages in Chinthapalli mandal

S.	Name of the		Type of Treatment ta	ken		% to Total
No	Village	Modern medi-care (PHC, CHC	Traditional health healers	Treatment not taken	Total	
		ANM ASHA)	Disari, Guruvadu/			
1	Samaraveedhi	13	Yejjodu 2	4	19	6.55
2	Cheruvuveedhi	6		7	13	4.48
3	Mulagaruva	20	1	1	22	7.58
4	Gadadelametta	10	1	1	12	4.13
5	Dailynagar	21			21	7.24
6	Ganjigedda	11			11	3.79
7	Chinakohuru	15			15	5.17
8	Porlubanda	3			3	1.03
9	Pinakohuru	19			19	6.55
10	Chinagedda	21	1		22	7.58
11	Kandulagadhi	27	1		28	9.65
12	Thotamamidi	10			10	3.44
13	K.Ganjigadda	16		2	18	6.20
14	Chikatimamidi	2			2	0.68
15	Chedalapadu	14	1	12	27	9.31
16	Kolapari	25	2	21	48	16.55
	Total	233	9	37	290	100.00
		(80.34%)	(3.10%)	(12.76%)		

The Table 6 shows the data pertaining to the type of treatment taken by the respondents from selected sample villages in Chinthapalli mandal. Out of the total respondents, 233(80.34%) of them have taken treatment from the health facilities like primary health centre, community health centre, sub-centre (ANM) and ASHA worker, 9 (3.10%) have taken treatment from the traditional healers like *Disari*, *Goravagadu* or *Gurumai* and *Yejjodu*, the rest 37(12.76%) have not taken treatment from either modern and traditional medicinal system. The data clearly indicates that at present majority of them are access to modern health care system and availing it for curing various diseases from which they affected very frequently. Once, the tribals have negative attitude towards modern medicine due to superstitious beliefs and faith on their own medicine. The data presented in the table clearly indicates about the health seeking behaviour of PVTGs inhabiting in Chinthapalle mandal of visakha agency.

Table 7: Percentage distribution of respondents (Mother) according to their body mass index in study area

BMI of Mothers	Frequency	Percent (%)
Under Weight	55	18.7
Normal	233	80.3
Over Weight	2	0.7
Obesity	1	0.3
Total	290	100.00

The Table 7 shows about the body mass index of mothers with children. Out of the total respondents 80.3% of them have normal weight, 18.7% of them have underweight 0.7% of them have over weight and 0.3% a single respondent have obesity. It is very clear that the percentage of overweight and obesity categories of respondent are very less in number, when compared to underweight and normal

Table 8: Percentage distribution of respondents (children's) according to their body mass index in study area

BMI of children	Sex wise (Children BMI	Total	% to total
	Male	Female		
Under Weight	113	100	213	41.68
Normal	56	45	101	19.77
Over Weight	9	14	23	4.50
Obesity	78	96	174	34.05
Total	256	255	511	100.00

weight categories. Nutritional deficiencies and health disorders observed among the sample respondents in the study area of Chinthapalli mandal.

The Table 8 presents the data pertaining to the body mass index of the children in the PVTGs population of sample households in Chinthapalli mandal. Out of the total Children sample 41.68% of them are in underweight category, 34.05% of them are in obesity category, 19.77% of them are in normal weight category, and 4.50% of them are in the overweight category. It is clear that 38.55% of children falls under over weight and obesity category. The data clearly indicates that the nutritional status of children is better than the nutritional status of mothers. At present the mothers are carrying their children and providing nutritional food to them by the Anganawadi worker under ICDS programmes. Moreover, the impact of Anganwadi scheme on children and lactating mothers definitely elevating nutritional supplementary status among them. However, still considerable number of children are malnourished and affected with malnutrition and falls under weight category. This kind of situation prevails among PVTGs primarily due to poverty, economic deprivation and livelihood insecurity.

Characteristic Percent (%) Frequency Number of live births 712 97.26 Abortions 12 1.64 8 Still births 1.09 Number of pregnancies 732 100.00 Mean number of pregnancies 2.52 2.45 Mean number of live births 2.37 Mean number of surviving children

Table 9: Details of pregnancy among sample respondents

The Table 9 presents the details of pregnancy among sample respondents of reproductive age group of 15- 49 years. A total of 732 pregnancies were recorded. Out of the total, 712 (97.26%) are live births, 1.64% are abortions, and 1.09% are still births. The mean number of pregnancies 2.54, the mean number of live births 2.45 and mean number of surviving children 2.37 to total sample population of the sample households all the three PVTGs put together. It is interesting to note that most of the deliveries now taking place either at PHC or at sub-centre. The home deliveries are very less when compared to institutional deliveries.

8	•		
Period	T	Total	
	Male	Female	7
Perinatal (< 7 days + still births)	4	6	10
Neonatal (28 days)	3	4	7
Post neonatal (29-365 days)	3	2	5
Child mortality (< 5 years age)	4	5	9
Total	14	17	31

Table 10: Age and sex wise mortality rates of live births

The Table 10 shows about age and sex wise mortality rates of live births in the sample of three PVTG namely Gadaba, Khond and Porja. A total of 31 deaths were recorded during the study period. In regard to child mortality in the study area, out of the total child mortality, 14 are male children and 17 are female children. The female children mortality rate is higher than the male children mortality rate in the sample population of three tribes in Chinthapalli mandal. In general, the infant and child mortality rates are high among tribal population when compared to general population. It is still higher in PVTGs population when compared to other tribes and general population, very poor health and hygiene conditions observed in the PVTGs habitats of study area of Chinthapalli mandal.

Conclusion

The study observations clearly indicates that the PVTGs like Gadaba, Kondh and Porja are still living in geographical isolation most economic backward condition and exhibiting poor health and nutritional status when compared to other tribes and general population. The average family size in all three PVTGs put together is 5.27. it shows that fertility rate is high at the same time morbidity and mortality rates are also high among them due to poor health and hygiene condition as well as poverty, livelihood and food insecurities. In regard to health seeking behaviour once they have exclusively depended on their indigenous medicinal system of *Disari Vaidyam*, now they are access to modern health care system. Still they have faith in their own medicine and superstitious beliefs towards illness and diseases through which they are affected. Maternal, infant and child deaths are also recorded among the three PVTGs in the study area. About 18.7% underweight mothers and 41.68%

of underweight children were recorded in the sample respondents households of three PVTGs put together. Out of the total 712 live births, 31(4.36%) child deaths were recorded; within it 54.84% female child deaths. The study clearly reveals that still there is a felt need to strengthen the maternal and child health programmes along with the ICDS of Anganwadi services. There is a felt need to document the indigenous medical system and to promote it, because the PVTGs have still faith in their own medicine. Health awareness creation programmes to be initiated in all the PVTGs habitats with an intervention approach in order to promote health and nutritional status and also to reduce the malnutrition, morbidity and mortality rates, more specific to maternal and child deaths. The study emphasizes still more focus is much needful to concerned health administration functioning in the tribal sub-plan areas. For fulfilling this objective, community health workers scheme (ASHA) and Anganwadi worker scheme need to be strengthen at gross root level by extending health and nutritional services accessibility to PVTGs. In addition to it much motivation to PVTGs people is essential from the health administration and Community Based Organizations.

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