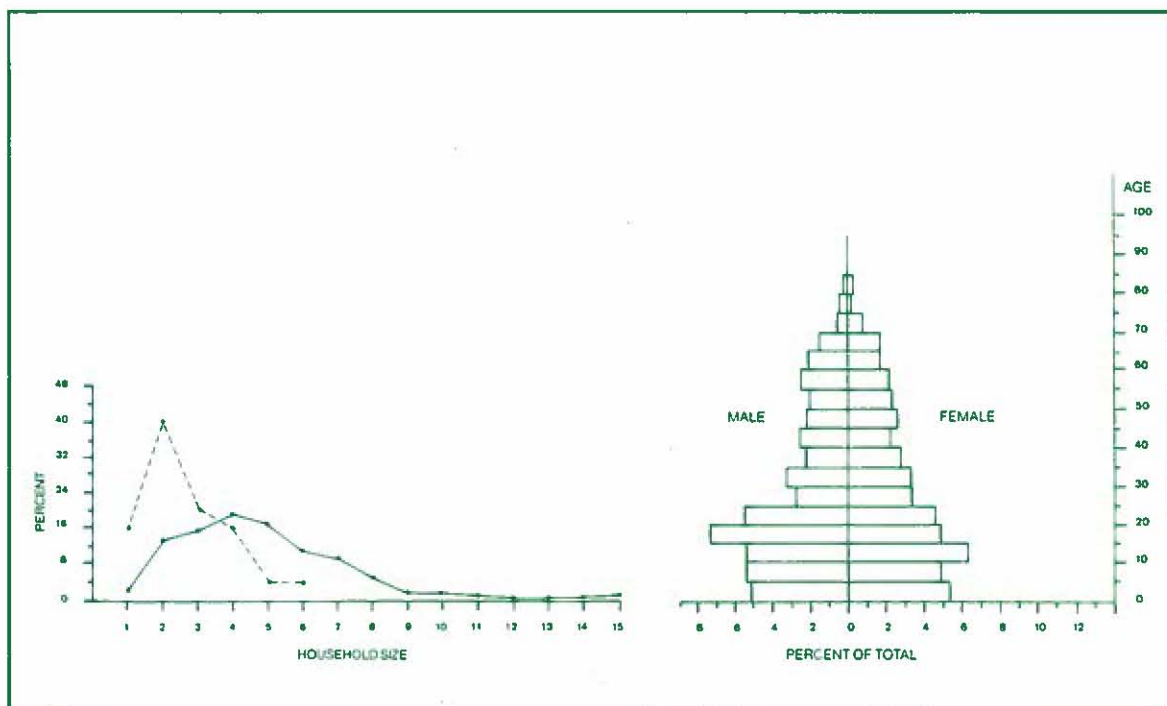


Health Status of the Population of Guam: Salient Social and Economic Characteristics

Community Development Report No. 12
February 1985



A Collaborative Project between Community Development Institute, Cooperative Extension Service and
Guam Health Planning and Development Agency

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HEALTH STATUS OF THE POPULATION OF GUAM:
SALIENT SOCIAL AND ECONOMIC CHARACTERISTICS

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SECTION ONE

HEALTH BEHAVIOR PATTERNS: A DEMOGRAPHIC OVERVIEW

1.1 Survey Origin and Goal

The Islandwide Health Behavior Patterns Survey originated with acceptance by the Guam Health Planning and Development Agency (GHPDA) of an application prepared by the Community Development Institute (CDI), College of Agriculture and Life Sciences (CALS) and submitted by the University of Guam (UOG). An Interagency Agreement was affirmed in late September 1983.

The Agreement called for an islandwide survey to determine health behavior patterns of the civilian population of Guam. In 1980 CDI completed a Health Needs Assessment of the northern part of the island (1). The study concentrated on 400 families in the village districts of Yigo, Dededo and Tamuning. At that time discussions by the Guam Health Coordinating Council centered on the need for a similar health assessment of the entire island population. The findings of such a study could provide relatively current information for reviewing and revising the Guam Health Plan as needed. Before this, selected health had been obtained from an islandwide CDI survey of households having at least one child in the 18- to 36-month-old age range (2). The purpose of the Department of Public Health and Social Services (DPHSS) sponsored study was to establish immunization levels for children under 10 years of age. The analysis involved 2,727 children from 1,237 households.

This report is the initial publication of findings from an Islandwide Health Behavior Patterns Survey. As such, it is the culmination of nearly one and one-half years of research effort--from the time of this survey project application, through the joint design and development of the data collection instrument, the interviewing and data analysis processes to the writing and actual publication.

This publication represents one of five volumes planned as a means of feedback to GHPDA following the initial general analysis of the survey findings. The focus of this volume is on selected social and economic characteristics of the subjects that are believed to be salient with regard to understanding the more general concern of health behavior patterns.

1.2 Sponsorship and Coordination

The islandwide health behavior study was made possible through coordination and collaborative efforts of several significant groups. Administrative and professional staff of the Guam Health Planning and Development Agency along with the Community Development Institute team jointly met during early phases of the project. Regular work sessions were held until such time that the design and development of a data collection instrument were completed. Intermittent written reports were submitted and small group meetings concerning the progress and status of the study were held involving GHPDA and CDI. Some changes in key personnel occurred during the study and at times others were off-island. However, replacement personnel were not unfamiliar with GHPDA/CDI or the health status survey and

the study was able to progress, although not as rapidly as originally conceived.

Due to limited funding from GHPDA and the nature and scope of the study, the project was also of interest to the Cooperative Extension Service (CES) at the University of Guam. To this end, CES through Smith-Lever Act direct funding joined with GHPDA in implementing the islandwide health behavior study. By combining resources of both GHPDA and CES a more comprehensive study was made possible.

The University of Guam Computer Center also played a very significant role in the project. Due to the extreme volume of survey data produced, major adjustments to operation schedules by Computer Center staff (as well as intensive and extensive work sessions) were required to develop a means whereby the massive data set of 36,632 record lines could be entered and analyzed. The large amount of information was generated as a result of treating every individual in the household as a research subject in contrast to using only the head of the household. In effect, this design generated at least five times as much additional information. This in turn resulted in complicated situations that were not anticipated during the formation of study.

1.3 Method and Procedure

A general overview of the methods and procedures of this islandwide health survey follows. A more detailed explanation of the sample design and sample unit is included in the appendices.

1.3.1 Sample

The health behavior study sample was drawn so that all 19 village districts would be proportionately represented in accordance with civilian population totals reported within the 1980 Federal Census of Guam (3). The proportionate representation took into account the more densely populated census designated places (CDP's) as well as the lesser populated outlying parts of the village districts. Houses located on land currently held by the federal government were not sampled. In addition, those places that provide quarters for the institutionalized were not included in the population of housing units. Thus the 400 households selected for study involved a geographically stratified two-step proportionate systematic random sampling procedure. The 400 sample units represented a ratio of one in fifty-nine or 1.7% of the 23,549 households available. A sample of this magnitude was determined to be of sufficient size to enable generalizing to the total civilian population. Aerial photography maps were utilized to locate housing units for drawing the sample as well as for location guides by the CDI interviewers. Because multiple residential units such as the Alupang Cove Complex appeared on the aerial maps as one building, families residing in such condominium or apartment units were underrepresented in the study while single houses in those same village districts tended to be somewhat overrepresented. The bias, if any, this sampling discrepancy may have contributed to the overall study, was limited, to the extent that families of the two types of dwellings differed.

All the apartments within a major housing complex were counted as individual households during the 1980 Federal Census for determining the total number of household units within the village. Therefore, for a village district such as Tamuning, single-dwelling residential homes were proportionately over-represented in the study to the extent that multiple apartment units and condominiums were under sampled. This sampling concern was recognized and discussed in advance of the study by the GHPDA/CDI project planning team but not considered to be of such a nature as to alter or redesign the sample design for the study.

1.3.2 Survey Instrument

The GHPDA/CDI health study project team developed the personal interview schedule during a series of intensive work sessions that often involved extensive discussions of particular items to be included. Generally, questions were included that paralleled a prior national health study while keeping in mind the specific health questions and concerns of GHPDA.

As is typically the case, some questions were dropped, redesigned or rewritten following several field pretesting tests. A copy of the survey instrument used in the study is included in the appendices.

1.3.3 Data Collection and Analysis

Interviewers with prior successful field interviewing experience with CDI were called upon to do the bulk of the data gathering for this islandwide health behavior survey. Those who were new to this type of work were given intensive training.

A problem was encountered during the field work phase when a new public law concerning dual employment was enforced. In particular, public school teachers and office clerical personnel were unable to be hired as interviewers even though the survey work was to be done during late afternoon/early evenings and on weekends.

The majority of the 400 interviews were completed from late in February to early May of 1984. The greatest difficulties encountered were in locating designated sample households, especially in the less populated areas away from the village centers, and interviewer fatigue. With few exceptions most individuals found it to be very difficult to continue field interview work beyond 10 to 20 completed interviews. This held true even with an incentive-based pay rate that increased after every nth interview successfully completed. A total of 18 interviewers were utilized. Women in the 35 to 50 age range seemed to be more productive interviewers. Their ethnicity did not appear to be a factor related to successful work.

Generally, excellent cooperation was received from the interviewees and little difficulty in the gathering of the field data was experienced. The extremely low rate of non-responses to personal questions such as income earned tends to support this claim.

In order to ensure the validity of information received, follow-up contacts were made by the CDI team with subjects who were interviewed. Approximately 10% of all those interviewed were contacted to determine the accuracy of the information

obtained during the interviews. In addition, this follow-up strategy also provided an excellent check on the manner in which interviewers had presented themselves and, in general, if they had been professional in their assignment.

Because of the volume of data generated in this study, several additional advanced computer science university students were employed to assist with the coding and data entry process. Interview questionnaires were coded and data entry was begun simultaneously while the field interviewing process continued. As previously noted, the 1,928 subjects who formed the 400 households were treated as individual sample cases when preparing the interview information for analysis by the university mainframe computer. This generated an extremely large data set of 36,632 record lines. Unfortunately the size of the data file members that can be utilized by the Interactive Computer Control Facility (ICCF) of the University's Computer Center is limited to 5,000 record lines. A more detailed discussion of this technical data analysis problem encountered and how it was eventually managed is included in the appendices.

Initially, plans were to use the Statistical Package for the Social Sciences (SPSS) in analyzing the data but eventually the Statistical Analysis System (SAS) was used due to the uncertainty of the University being able to maintain the rental on the SPSS program. The analysis of data procedure was, however, halted for about a week when the rental of the SAS program expired.

1.3.4 Validity and Reliability

The findings of the health survey are believed to be both valid and reliable within acceptable limits. As already mentioned, interviewee checks were made by phone and in person with approximately 10% of the households. The feedback was most positive. In addition, throughout the report various findings of this study are compared with similar data from the 1980 Federal Census of Guam and other CDI studies and used as measures of accuracy.

When considering the very adequate sample size, in addition to the above observations, it is thought that the findings reported in the following chapters can be viewed as very good estimates of true situations as they existed in the civilian population of the island at the time the data were collected.* Caution should be taken, however, when interpreting data on a village-by-village basis in view of the smaller number of households sampled in the lesser populated village districts. Even though the sampling was proportionate to the total number of households on a village-by-village basis, the statistical chance of less accuracy obviously occurs when the raw sample size is small as in such villages as Umatac. To help reduce that type of potential sampling error, the data in the following sections of this report have been analyzed on a geographical basis by region, also.

The possible bias of oversampling the single dwelling houses and underrepresenting the condominium and large apartment complex dwellings, especially in Tamuning, should also be

*See Appendix B

considered when reviewing the findings. For example, if those who reside in the apartment units and condominiums are more homogeneous regarding certain characteristics like ethnicity, age, length of stay on the island, level of income, number per household, etc., then those characteristics would be proportionately affected when reported for the entire village or island. Apartment dwellers on Guam have generally been younger individuals than those residing in single family homes, thus the type of over/undersampling mentioned here could result in a slightly higher percentage of older individuals being included in the study.

1.4 Disclaimer

A factor that is always a concern of any survey of a sample of the population is the representativeness of the subjects contacted. In addition, the time frame required to complete a study from the days of the initial team discussions until the published report is delivered is almost always longer than anticipated. In an atmosphere of considerable dynamic change that can and does occur on an island such as Guam, information is often outdated or somewhat less relevant in part by changes in the social environment and system studied before the final presentation is made. The users of such information, therefore, need to interpret the information accordingly in light of known changes that have taken place. New information utilized in this manner should be very useful for decision making and planning purposes.

Finally, the views and interpretations presented in this report are those of the writer and do not necessarily represent the view of the Guam Health Planning and Development Agency.

1.5 Form of Report

This report is presented in eight sections or chapters. Section One introduces the study origin and general objectives. Also discussed is the interagency coordination involved, along with a summary of the methodology employed by the team in collecting and analyzing the survey information. A brief overview of data validity and reliability is also included in the initial section of this report. Section Two presents a breakdown of the sample on a village district basis. The information primarily pertaining to household size is covered in Section Three. This is followed in Section Four by an extensive presentation of age, sex, and ethnicity data. Various population pyramids are utilized to graphically portray the age/gender structure of the various categories of sample members.

Section Five gives a brief presentation of the marital status of the subjects age 16 and older. The final demographic variable of education and income are discussed in Sections Six and Seven, respectively. A brief summary of the findings is presented in Section Eight.

In an attempt to avoid duplication of material but retain relevant information, considerable detailed information such as the sample design and sample unit selection procedure, interview schedule, and flash cards are included in the appendices. For ease of report preparation and reading, references cited

also appear in the appendices along with definitions of key words and terms.

Percentage totals in the various data tables may exceed or be less than 100 by a decimal fraction of 0.1, due to mathematical rounding of numbers.

1.6 Acknowledgment

The CDI team would like to extend its appreciation for the outstanding support, understanding, and cooperation of all personnel from the GHPDA, CES, CALS and UOG administration, the UOG Computer Center and the work crew of faithful interviewers and data analysts. Last but certainly not least, a heartfelt Si Yuus Maase to the clerical and office support staff for the numerous routine responsibilities performed and, in particular, typing the report and drawing the many complex bar and line graphs.

Although too numerous to list here, appreciation and gratitude are extended to the 400 household representatives who volunteered approximately an hour of their precious time to provide the basic information for this study. Obviously, without their excellent cooperation and honesty this study would not have been possible.

SECTION TWO

GEOGRAPHICAL LOCATION OF RESIDENCE

2.1 Village

The 400 households sampled were drawn in proportion to the total number of households within a given village district as enumerated in the 1980 Federal Census of Guam. The number of households included in this study on a village-by-village basis appears in Table 1 along with the corresponding percentage. Also shown are the number and proportion of individuals in the study who were residing in the respective villages.

Because the largest number of households are in Tamuning and Dededo, the greatest number of households sampled were also from those two village districts. When combined, the number of households studied in these two villages represented 39.75%, or 4 out of every 10 households. The number of individuals who were living in the sample households in Tamuning and Dededo made up a slightly smaller percentage (37.61) of the all-island sample figure of 1,928 persons. This difference of over 2% was a result of a slightly smaller than average household size for those interviewed in Tamuning.

The 1980 Federal Census of the Guam population showed the village district of Umatac continued to be the least populated of the 19 village districts covering the island. Only three-fourths of 1% of the sample were in Umatac. The other two southern villages of Inarajan and Merizo also were sparsely

TABLE 1. Village of Residence

Village District	Households		Individuals	
	f	%	f	%
Agana	7	1.75	27	1.40
Agana Heights	16	4.00	81	4.20
Agat	17	4.25	66	3.42
Asan/Maina	8	2.00	31	1.61
Barrigada	26	6.50	119	6.17
Chalan Pago/Ordot	13	3.25	61	3.16
Dededo	78	19.50	378	19.61
Inarajan	7	1.75	37	1.92
Mangilao	31	7.75	173	8.97
Merizo	7	1.75	51	2.65
Mongmong/Toto/Maite	22	5.50	101	5.24
Piti	9	2.25	39	2.02
Santa Rita	14	3.50	73	3.79
Sinajana	11	2.75	49	2.54
Talofofo	8	2.00	49	2.54
Tamuning	81	20.25	347	18.00
Umatac	3	0.75	12	0.60
Yigo	24	6.00	131	6.79
Yona	<u>18</u>	<u>4.50</u>	<u>103</u>	<u>5.34</u>
TOTAL	400	100.00	1,928	99.97

populated and, combined, accounted for 3.5% of the sample households in the study.

2.2 Region

In an attempt to reduce the residential distribution from 19 village district categories to a more manageable size, they were combined into geographic subregions and regions as defined by the GHPDA/CDI team. A breakdown of sample households when categorized in this manner appears in Table 2.

As may be observed upon inspection of the data in the table, slightly over half of all those surveyed lived in the north. They were roughly evenly divided between the North Central and the Far North subregions which contained the village districts of Barrigada/Tamuning and Dededo/Yigo, respectively.

The Central region was defined to include the following eight village districts: Agana, Agana Heights, Asan/Maina, Chalan Pago/Ordot, Mangilao, Mongmong/Toto/Maite, Piti and Sinajana. Combined, about three of each ten households sampled and individuals studied were residing in this region of the island during the time of this health study.

The South Central and Far South subregions together were the residential areas where approximately two of every ten persons studied were living. The villages in the Southern region were Agat, Santa Rita, Talofofo, Yona, Inarajan, Merizo and Umatac.

In concluding these comments on the geographical distribution of the sample households and the individuals residing

TABLE 2. Geographical Region of Residence

Areas	Subregions				Regions			
	Households		Individuals		Households		Individuals	
	f	%	f	%	f	%	f	%
<u>North</u>	102	25.50	509	26.40				
Dededo								
Yigo					209	52.25	975	50.57
<u>North</u>								
<u>Central</u>	107	26.75	466	24.17				
Barrigada								
Tamuning								

<u>Central</u>	117	29.25	562	29.15				
Agana								
Agana								
Heights								
Asan/Maina								
Chalan Pago/								
Ordot					117	29.25	562	29.15
Mangilao								
Mongmong/								
Toto/Maite								
Piti								
Sinajana								

<u>South</u>								
<u>Central</u>	57	14.25	291	15.09				
Agat								
Santa Rita								
Talofofo					74	18.50	391	20.28
Yona								
<u>South</u>	17	4.25	100	5.19				
Inarajan								
Merizo								
Umatac								

TOTAL	400	100.0	1,928	100.0	400	100.0	1,928	100.0

therein, it can be inferred from the regional information presented in Table 2 that the average household size in the North was the smaller while that in the South was the larger. This may be established by comparing the respective regional percentage figures with "households" and "individuals" represented in the total sample.

SECTION THREE

HOUSEHOLD SIZE

3.1 Number and Range

To determine the number of persons living in the household, the adults interviewed were asked how many persons had lived or moved to their household since February 1, 1983. The question further specified that the individuals to be counted were those who regularly ate and slept in the household. Individuals from the family who were off-island attending school or on active military duty and stationed off island were also to be excluded when determining the household size. The respondents were also asked if any persons living in the household at the time of this survey were living there only temporarily. If so, they were not included as regular members of the household. A means of checking the validity of this information was obtained early in the interview session when the respondents were asked to list by name all members of the household. The interviewers were then able to test if the list of individuals named corresponded with the number of persons in the household given earlier in the interview. Differences, if any, were then resolved by the interviewer.

As noted in the methodology section of this report (Section One), 400 families were interviewed from throughout the island. Household size ranged from 1 to 15 persons. The mean, median, and modal household sizes in this study were 4.82,

4.94, 4.00 persons, respectively. These statistics suggest that though the range in household size extended to 15, the number of larger families was relatively small. Upon inspecting the data presented in Table 3, it may be observed that only 27 families were larger than 8. Of these families, 9 indicated households of 9 persons and an additional 8 had households of 10 persons. The remaining 9 were distributed among households ranging in size from 11 to 15. Two households had 15 persons in each. The average household size in this study was found to be virtually the same as reported in the Northern Area Health Study in 1980, the difference being only 0.04 individuals. In the Northern Area Health Study, however, household size ranged from 1 through 17.

3.2 Village and Region

The number of individuals residing in a household was found to vary from village to village (Table 4, Figure 1). Therefore, caution should be observed when generalizing the findings on a village-by-village basis. Because the least populated village had the fewest households studied (although the number studied was proportionate to the larger villages) these findings may not be a wholly accurate view of the respective village.

To offset the effect of village size on the true estimate of household size by area, the villages were grouped into regions. When doing this, the results were basically in line with what would be commonly expected and generally consistent, but slightly larger than reported in the 1980 Federal Census of

TABLE 3. Household Size of Total Sample

Members per House- holds	Number of House- holds	Percent of House- holds	Cumulative Percent of House- holds	Number of Indivi- duals	Cumulative Number of Indivi- duals
1	12	3.00	3.00	12	12
2	53	13.25	16.25	106	118
3	60	15.00	31.25	180	298
4	79	19.75	51.00	316	614
5	66	16.50	67.50	330	944
6	43	10.75	78.25	258	1,202
7	38	9.50	87.75	266	1,468
8	22	5.50	93.25	176	1,644
9	9	2.25	95.50	81	1,725
10	9	2.25	97.75	90	1,815
11	4	1.00	98.75	44	1,859
12	1	0.25	99.00	12	1,871
13	1	0.25	99.25	13	1,884
14	1	0.25	99.50	14	1,898
15	<u>2</u>	<u>0.50</u>	100.00	<u>30</u>	1,928
TOTAL	400	100.00		1,928	
Mean Household Size = 4.82					

TABLE 4. Geographic Distribution and Household Size of Sample by Village

Village	Number of House- holds	Number of Indivi- duals	Percent of Total Sample of Individuals	Mean Household Size (Individuals)
Agana	7	27	1.4	3.9
Agana Heights	16	81	4.2	5.1
Agat	17	66	3.4	3.9
Asan/Maina	8	31	1.6	3.9
Barrigada	26	119	6.2	4.6
Chalan Pago/ Ordot	13	61	3.2	4.7
Dededo	78	378	19.6	4.9
Inarajan	7	37	1.9	5.3
Mangilao	31	173	9.0	5.6
Merizo	7	51	2.7	7.3
Mongmong/ Toto/Maite	22	101	5.2	4.6
Piti	9	39	2.0	4.3
Santa Rita	14	73	3.8	5.2
Sinajana	11	49	2.5	4.5
Talofofo	8	49	2.5	6.1
Tamuning	81	347	18.0	4.3
Umatac	3	12	0.6	4.0
Yigo	24	131	6.8	5.5
Yona	<u>18</u>	<u>103</u>	<u>5.3</u>	<u>5.7</u>
TOTAL	400	1,928	99.9	4.8

FIGURE 1. Rank Order of Villages by Average Household Size

Household Size (Persons)	Village
7.5	
.4	
.3	Merizo
.2	
.1	
7.0	
.9	
.8	
.7	
.6	
.5	
.4	
.3	
.2	
.1	Talofofo
6.0	
.9	
.8	
.7	Yona
.6	Mangilao
.5	Yigo
.4	
.3	Inarajan
.2	Santa Rita
.1	Agana Heights
5.0	
.9	Dededo
.8	
.7	Chalan Pago/Ordot
.6	Barrigada, Mongmong/Toto/Maite
.5	Sinajana
.4	
.3	Piti, Tamuning
.2	
.1	
4.0	Umatac
.9	Agana, Agat, Asan/Maina
.8	
.7	
.6	
.5	
.4	
.3	
.2	
.1	
3.0	

Guam. As shown in Table 5, 57% of the southern villages had household sizes on a per village basis greater than the all island sample mean of 4.8. Only 25% of the central villages and 50% of those in the north had averages greater than the all island figure.

TABLE 5. Household Size by Regions

Region	% of Villages with Average Household Size Greater Than the All-Island Sample Average
<u>South</u>	
Far South and South Central	57.1
<u>Central</u>	25.0
<u>North</u>	
Far North and North Central	50.0

3.3 Ethnicity

The data were also analyzed to determine the household size of the various ethnic categories (Table 6). Households that were ethnically heterogeneous were included in the "Other Combinations" category. This represented the third largest category. Ninety (22.5%) of the 400 households sampled were placed there. A complete listing of these households is included in Appendix A of this report.

The remaining categories appearing in Table 6 contained households that were ethnically homogeneous. For the "Other Islanders" and "Asian" categories this was also the case, although individuals from several different islands and

TABLE 6. Households Size by Ethnicity

Household	Households*															
	Chamorro		Filipino		Caucasian		Other Islander		Asian		Other Single Ethnicity		Chamorro/Filipino		Other Combination	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
1	6	3.5	1	0.9	4	23.5	-	-	1	12.5	-	-	-	-	-	-
2	17	9.9	16	15.4	10	58.8	-	-	3	37.5	-	-	-	-	7	7.8
3	28	16.4	11	10.6	1	5.9	3	37.5	-	-	-	-	-	-	17	18.9
4	31	18.1	27	26.0	2	11.8	1	12.5	2	25.0	-	-	-	-	16	17.8
5	27	15.8	24	23.1	-	-	1	12.5	-	-	-	-	-	-	14	15.6
6	19	11.1	11	10.6	-	-	-	-	-	-	-	-	1	100.0	12	13.3
7	16	9.4	8	7.7	-	-	-	-	2	25.0	1	100.0	-	-	11	12.2
8	10	5.8	5	4.8	-	-	2	25.0	-	-	-	-	-	-	5	5.6
9	7	4.1	-	-	-	-	-	-	-	-	-	-	-	-	2	2.2
10	5	2.9	1	0.9	-	-	-	-	-	-	-	-	-	-	3	3.3
11	2	1.2	-	-	-	-	1	12.5	-	-	-	-	-	-	1	1.1
12	1	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	1	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	1	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2.2
TOTAL	171	100.0	104	100.0	17	100.0	8	100.0	8	100.0	1	100.0	1	100.0	90	100.0
% of 400	42.8		26.0		4.3		2.0		2.0		0.3		0.3		22.5	
Mean Household Size	4.9		4.5		2.1		5.6		3.6		7.0		6.0		5.3	

*For all categories (except "Other Combinations") all members within a given household were said to identify with the same ethnic category. For example, all members of all households classified as Chamorro identified themselves as being Chamorro.

countries were grouped together and included in one of these two general categories. For example, the "Other Island" category contained six different households of Palauans, one of Yapese, and one that was only identified as "Trust Territory."

In the Asian category were four homogeneous households of Japanese, three of Koreans and one of Chinese--for a total of eight. Although the ethnic identity of the 1,928 individuals studied covered a wide range, only one of the households that was homogeneous in its ethnic makeup was other than Chamorro, Filipino or Caucasian. This household was placed in the "Other Single Ethnicity" category. The seven members of this group were Blacks. Another household of six contained individuals who were all said to be of Chamorro/Filipino ethnicity. This category was included in anticipation of a sizable number of households identifying accordingly. The subjects, however, in all other homogeneous households maintained single ethnic identity in their responses to the field interviewers.

Homogeneous Chamorro households made up 42.8% of all households studied. However, the number of individuals who identified themselves as being Chamorro represented a larger proportion (about 58.0%) of the total sample of 1,928. This difference of approximately 15.0% occurred because 83.3% of all ethnically heterogeneous or mixed households contained one or more Chamorro members. Therefore, nearly two-thirds (256) of the 400 households surveyed had Chamorro members.

Filipino households that were ethnically homogeneous were the second largest category (26.0%). In addition to these 104

FIGURE 2. Chamorro Household Size

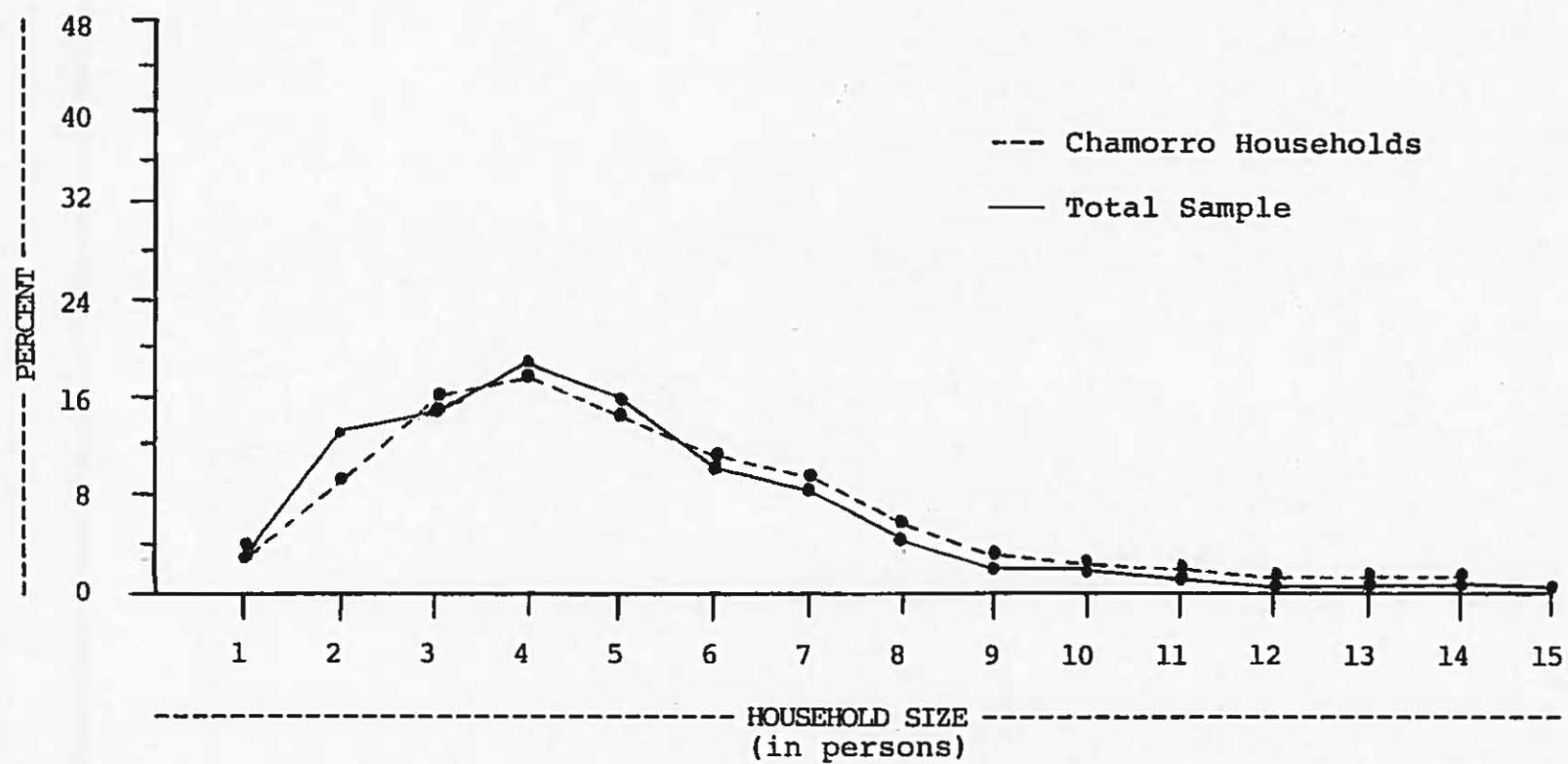


FIGURE 3. Filipino Household Size

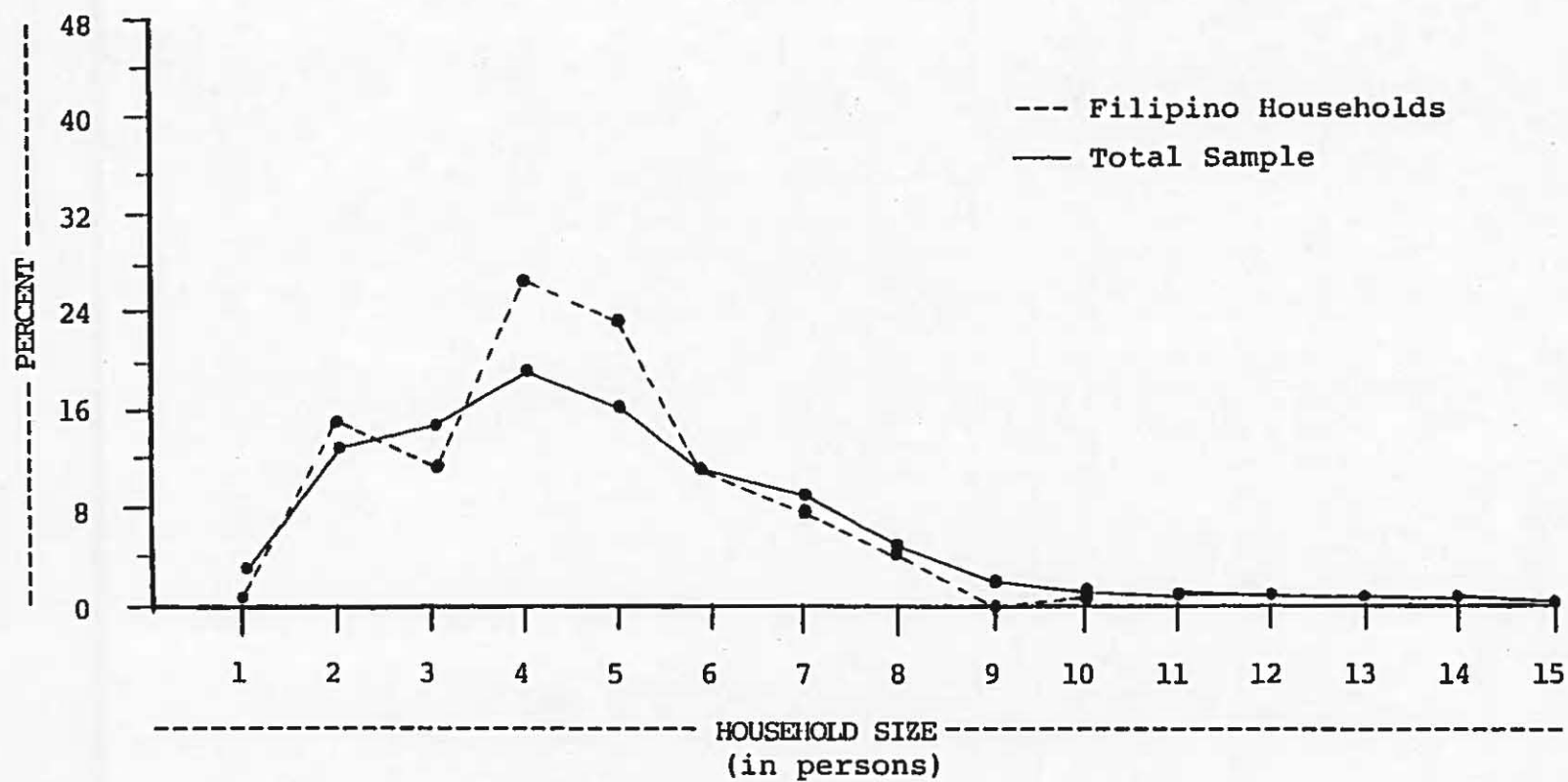


FIGURE 4. Caucasian Household Size

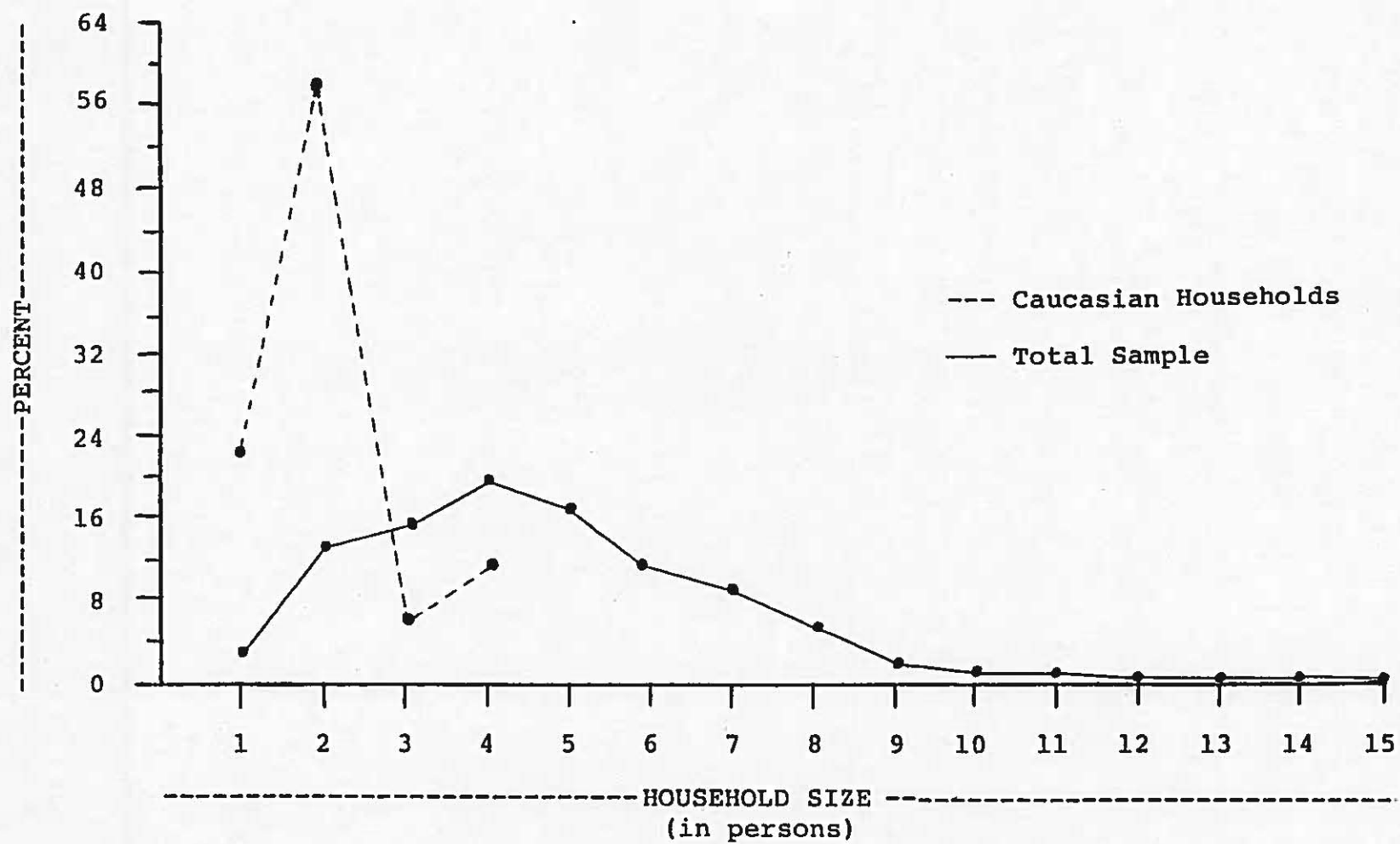


FIGURE 5. Other Islanders Household Size

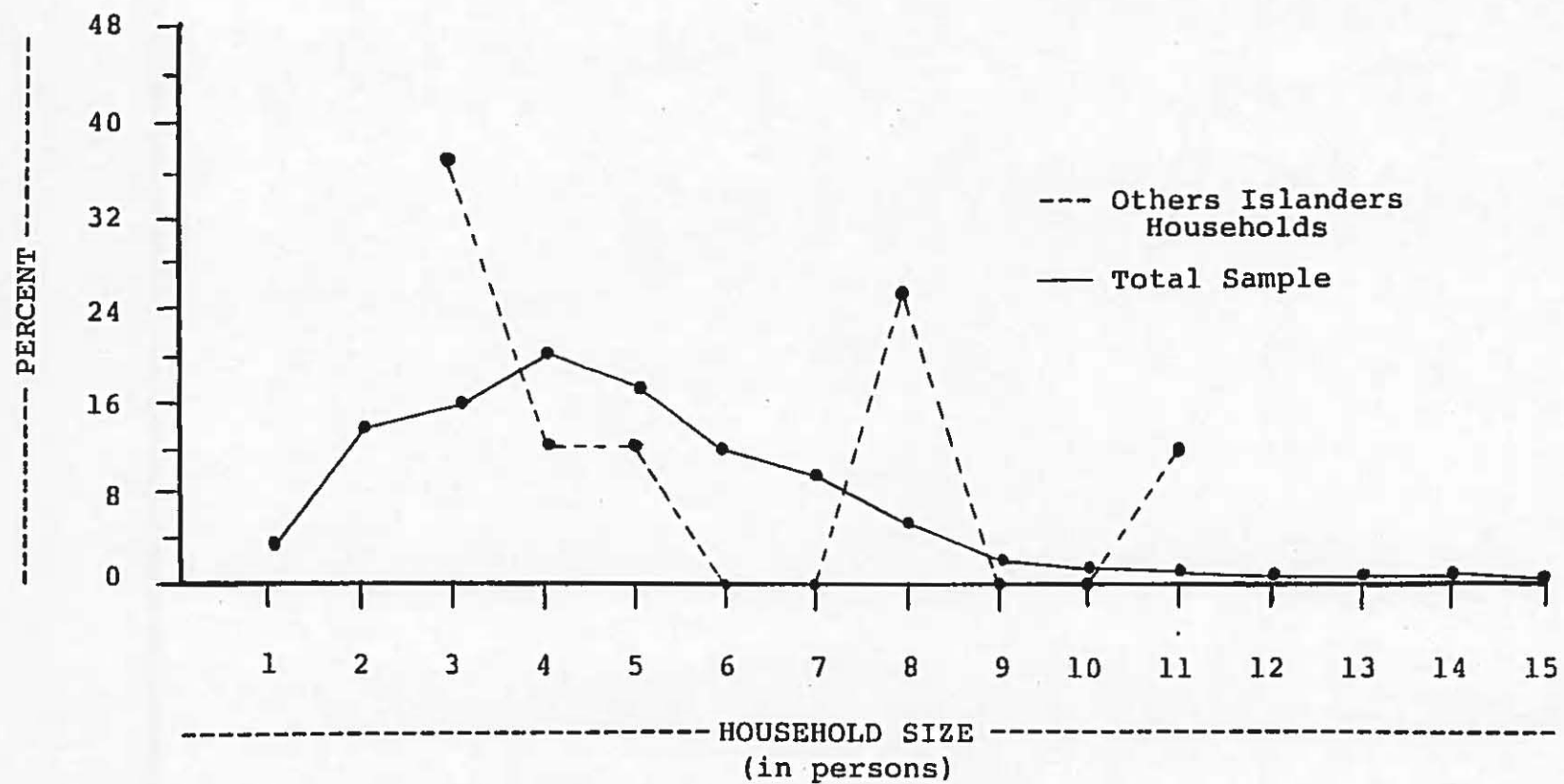
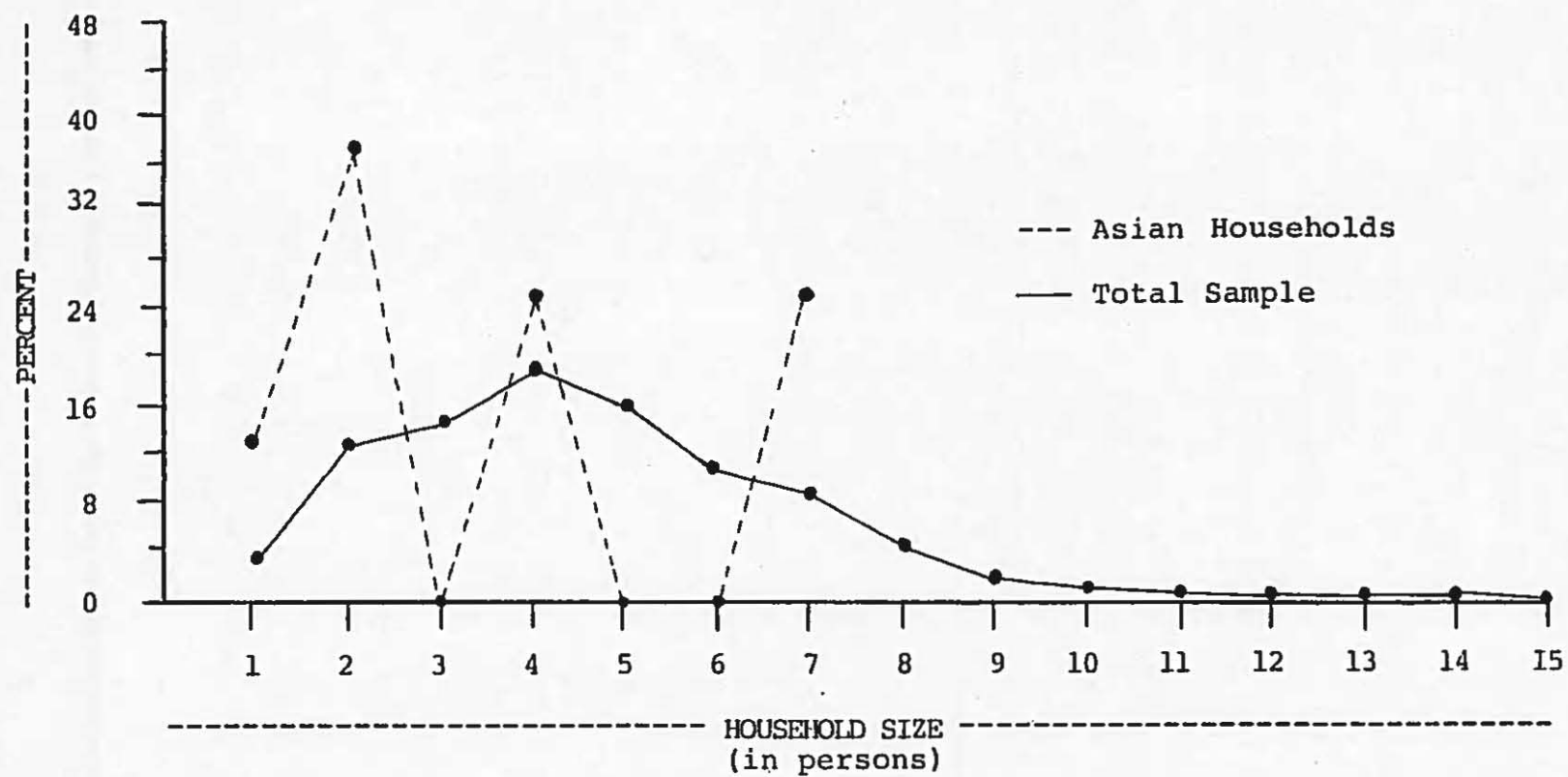


FIGURE 6. Asian Household Size



households, another 37 of the 90 ethnically mixed households contained at least one individual who was identified as being full or part Filipino. Thirty-five percent of all households, therefore, had someone of Filipino ancestry living within the unit.

In this island-wide study 68 individuals were identified as being Caucasian. Although additional persons, such as Canadians, Germans and French (among others) technically could have been included as Caucasians, the household members interviewed specifically identified certain individuals of their households as being of some "other ethnic" group and then proceeded to specify various nationalities.

It may be of interest to note that 17 households were composed of only Caucasians (Table 6), and an additional 30 contained Caucasians along with individuals of other ethnic origins. These 30 represent 33.3% of the 90 ethnically heterogeneous households. Thus, 47 (11.8%) of the 400 households studied were found to contain one or more Caucasians.

The average (mean) household size varied among ethnic categories. In order of the smallest to largest, the following average household sizes were: Caucasian 2.1, Asian 3.6, Filipino 4.5, Chamorro 4.9, Other Combination 5.3, and Other Islander 5.6.

A closer inspection of Table 6 will reveal that one-third of all single-occupant households in the study were occupied by Caucasians. It may also be noted that 23.5% of all Caucasian households were single-occupied and an additional 58.8% had

only two members for a total of 82.3%. By comparison, only 16.3% of the Filipino and 13.4% of the Chamorro households were either single- or double-occupied.

No attempt was made in this study to determine reasons why some individuals live alone or with only one other individual while others reside in larger household units. Reasons for such settlement patterns probably include level of income and reasons for living on the island, such as having been recruited for a given job, distance migrated, family sponsorship, and so forth. These factors could attribute to marked variations among the ethnic categories which essentially were the migrant/nonmigrant dichotomy where Chamorros represent the nonmigrants and all other ethnic categories include the migrants. The settlement patterns of the migrants could probably be better understood if categorized into whether or not they had relatives living on Guam prior to their arrival. Differences like these could clearly relate to absence or presence of a kinship support system.

The range in household sizes also varied by ethnic categories. The two households with 15 members in each were both ethnically heterogeneous. Therefore, they were placed in the Other Combinations category (Table 6). Ethnically homogeneous households varied in size. The household size ranges were: Chamorro 1-14, Filipino 1-10, Caucasian 1-6, and Asian 1-7. Other Islanders did not live alone. Their smallest household size was 3 and the largest was 11.

SECTION FOUR
AGE, GENDER RATIOS AND ETHNICITY

4.1 Age

The 1,928 individuals studied ranged in age from less than 1 to 92 years. The median age was found to be 22.2 years. Both of these statistics were consistent with those reported in the 1980 federal population enumeration of Guam. In the federal survey, only 4 individuals were reported in the oldest age category which was 95 to 99 years. All others were under age 95. The 1980 Guam Census also reported a median age of 22.2. These comparative figures tend to support favorably the validity of the islandwide health behavior study done in 1984.

Ten and one-half percent of the individuals studied were of preschool age (under 5) and an additional 25% were age 5 to 15. Nearly 72% were under age 40. A closer review of the information in Tables 7 and 8 shows that about 73% of those in this islandwide study were born after World War II. Eighty-six percent of all persons were age 54 or under, thus leaving 14% for the elderly category of age 55 or older. Those who were 65 or older made up 5.9% of the entire 1,928 individuals surveyed. According to these figures one could expect to find in the civilian population of 84,979 about 11,982 individuals age 55 and older. Of these, 5,104 would be expected to be at least 65 years old.

TABLE 7. Age Distribution of Total Count

Age Categories	f	%	Cum.%
Under 1 year	39	2.0	2.0
1-4	164	8.5	10.5
5-15	472	24.5	35.0
16-39	710	36.8	71.8
40-54	272	14.1	85.9
55-64	158	8.2	94.1
65+	<u>113</u>	<u>5.9</u>	<u>100.0</u>
TOTAL	1,928	100.0	
Median	22.2 years		
Range	Under 1 to 92 years of age		

4.2 Gender Ratios

The accuracy or validity of the sample representation for this islandwide study was further confirmed by comparing the gender or sex ratio of the subject with the ratios in other recent surveys. The proportions of males and females in the study were found to be very similar to the ratios reported in the Northern Guam Health study of 1979-1980, the 1980 Federal Census of the Population of Guam, and the 1983 Islandwide Nutrient Intake Survey Project (Table 9). Of the 1,928 individuals studied, 985 (51.1%) were males and the remaining 943 (48.9%) were females.

To establish the validity of the sample, the study data were compared with the findings of the 1980 Federal Census

TABLE 8. Age of Household Members

Age	f	Cum. f	%	Cum. %
0	39	39	2.023	2.023
1	53	92	2.749	4.772
2	36	128	1.967	6.639
3	39	167	2.023	8.662
4	36	202	1.667	10.329
5	45	248	2.334	12.663
6	45	293	2.334	15.197
7	35	328	1.815	17.012
8	35	363	1.815	18.828
9	38	401	1.971	20.799
10	42	443	2.178	22.977
11	54	497	2.801	25.778
12	38	535	1.971	27.749
13	41	576	2.127	29.876
14	47	623	2.438	32.313
15	52	675	2.697	35.010
16	46	721	2.386	37.396
17	40	761	2.075	39.471
18	55	816	2.853	42.324
19	42	858	2.178	44.502
20	54	912	2.801	47.303
21	45	957	2.334	49.637
22	32	989	1.660	51.297
23	32	1021	1.660	52.956
24	30	1051	1.556	54.512
25	29	1080	1.504	56.017
26	17	1097	0.882	56.898
27	25	1122	1.297	58.195
28	26	1148	1.349	59.544
29	22	1170	1.341	60.885
30	24	1194	1.245	62.129
31	20	1214	1.037	63.167
32	27	1241	1.400	64.567
33	20	1261	1.037	65.605
34	31	1292	1.608	67.212
35	17	1309	0.882	67.894
36	24	1333	1.245	69.139
37	20	1353	1.037	70.176
38	19	1372	0.985	71.162
39	13	1385	0.674	71.836
40	18	1403	0.934	72.770
41	19	1422	0.985	73.755
42	21	1443	1.089	74.844
43	18	1461	0.934	75.778
44	21	1482	1.089	76.867
45	20	1502	1.037	77.905
46	19	1521	0.985	78.890
47	20	1541	1.037	79.927
48	13	1554	0.674	80.602
49	19	1573	0.985	81.587
50	25	1598	1.297	82.884
51	11	1609	0.571	83.454
52	16	1625	0.810	84.264
53	19	1644	0.985	85.270
54	13	1657	0.674	85.944
55	19	1676	0.985	86.929
56	21	1697	1.089	88.019
57	18	1715	0.934	88.952
58	10	1725	0.519	89.471
59	20	1745	1.037	90.508
60	15	1760	0.778	91.286
61	13	1773	0.622	91.905
62	22	1794	1.141	93.050
63	5	1799	0.259	93.309
64	16	1815	0.810	94.139
65	15	1830	0.778	94.917
66	8	1838	0.415	95.332
67	11	1849	0.571	95.902
68	15	1864	0.778	96.680
69	11	1875	0.571	97.251
70	5	1880	0.259	97.510
71	8	1888	0.415	97.925
72	7	1895	0.363	98.288
73	3	1898	0.156	98.444
74	2	1900	0.104	98.548
75	5	1905	0.259	98.807
76	4	1909	0.207	99.015
77	1	1910	0.052	99.066
78	1	1911	0.052	99.118
79	2	1913	0.104	99.222
80	3	1916	0.156	99.378
81	1	1917	0.052	99.429
82	3	1920	0.156	99.585
83	4	1924	0.207	99.791
84	1	1925	0.052	99.844
85	1	1926	0.052	99.896
92	2	1928	0.104	100.000

Median = 22.2

Range = under 1 year to 92 years

TABLE 9. Gender Ratios (Percent)

Gender	1984 Island- wide Health Behavior Study	1983 Island- wide Nutrient Intake Study	1980 Island- wide Federal Census	1979-1980 Northern Area Health Assessment Study
Males	51.1	52.3	52.2	52.1
Females	<u>48.9</u>	<u>47.7</u>	<u>47.8</u>	<u>47.9</u>
TOTAL	100.0	100.0	100.0	100.0

enumeration for the island. Using the sex ratio of the 1980 Census (109.1), the expected number of males and females among 1,928 individuals was computed. These figures were then compared with the actual number of males and females found in this study (Table 10). As noted, the chi-square statistical test of association was utilized and a value of 0.455 computed. This value was not statistically significant.

A chi-square value as small as 0.455 would be expected in 50% of random samples of the same size drawn from the island population if there were no sex bias in residency (village) tendency. Evidence, therefore, clearly indicates that there were an appropriate number of males and females in this study as would be expected from the postulated 52.8% and 47.8% of males and females reported in the 1980 Federal Population Census on Guam. This validity check on the sample utilized in this study supports the claim that considerable confidence may be placed in the findings and that they, as a whole, may be

generalized to the total population excluding the residential areas specified in the discussion of the sample design.

TABLE 10. Actual and Expected Frequencies of Males and Females in the Study

Gender	Actual		Expected (based on 1980 Federal Census)	
	f	%	f	%
Males	985	51.1	1,006	52.2
Females	<u>943</u>	<u>48.9</u>	<u>922</u>	<u>47.8</u>
TOTAL	1,928	100.0	1,928	100.0

Actual sex-ratio = 104.5

Expected sex-ratio = 109.1

$\chi^2 = .455$ with 1 d.f. is nonsignificant

In view of the impact that ethnicity, as an independent variable, was believed to have had on the general data, the proportions of males and females in each of the major subpopulations were also calculated. As may be noted (Table 11), the females outnumbered males only within the Chamorro population. The sex ratio (S-R) of 98.9 means that there were approximately 99 males for every 100 females. The S-R varied from 100.0 for the Other Islanders to 126.7 for the Caucasians. The S-R for the Filipino population was 106.9 and for the Asian population was 118.8.

4.3 Ethnicity

Although it is recognized that the ethnic composition of the people on Guam is complex, the proportion of the total

TABLE 11. Gender (Sex) Ratio

Gender	Total	Count	Chamorro		Filipino		Caucasian		Other Islander	
	#	%	#	%	#	%	#	%	#	%
Male	985	51.1	550	49.2	280	51.7	38	55.9	29	50.0
Female	<u>943</u>	<u>48.9</u>	<u>556</u>	<u>49.8</u>	<u>262</u>	<u>48.3</u>	<u>30</u>	<u>44.1</u>	<u>29</u>	<u>50.0</u>
TOTAL	1,928	100.0	1,117	100.0	542	100.0	68	100.0	58	100.0
Ratio	----104.5---		----98.9----		---106.9--		--126.7--		--100.0--	
.....										
Gender	Total	Count	Asian		Other Single Combination		Chamorro/ Filipino		Other Combination	
	#	%	#	%	#	%	#	%	#	%
Male	985	51.1	19	54.5	16	61.5	21	75.0	32	59.3
Female	<u>943</u>	<u>48.9</u>	<u>16</u>	<u>45.7</u>	<u>10</u>	<u>38.5</u>	<u>7</u>	<u>25.0</u>	<u>22</u>	<u>40.7</u>
TOTAL	1,928	100.0	35	100.0	26	100.0	28	100.0	54	100.0
Ratio	----104.5---		--118.8--		--160.0--		--300.0--		--145.5--	

population which each category represents is not commonly known. Selective migration to and from the island during recent years has greatly affected the ethnic makeup of the island's people. In view of this, ethnicity (as it correlates to cultural ways) is considered to be an important variable in this study. The cultural background and origin of individuals may dictate to a significant extent their care and other needs.

To determine the ethnicity of the sample population, the persons interviewed were asked to identify themselves, as well as members in the household, with the various ethnic-racial categories listed on a flash card. The card was presented to them during the personal interview. Ethnic categories were listed in alphabetical order. They were: Black, Caucasian, Chamorro, Filipino, Indian, Japanese, Korean, Saipanese, Other Islanders, Vietnamese, and "Others." The Other Islanders were asked to further specify the particular island group from which they originated. Likewise, anyone whose ethnicity was other than those listed on the flash card was also asked to specify their origin.

The ethnic composition of the 1,928 individuals studied is presented in Table 12. As may be observed when inspecting the table, with the exception of the Chamorros and Filipinos, all of the many ethnic groups were small. None of these smaller ethnic subpopulations represented more than 3.5% of the Guam population. When combined, the Chamorros and Filipinos represented 86% of all persons in the sample. Chamorros made up nearly 58% and Filipinos slightly over 28% of the 1,928 persons

TABLE 12. Ethnic Composition of Total Count

Ethnicity	f	%	Cum. %
Chamorro	1,117	57.9	57.9
Filipino	542	28.1	86.0
Caucasian	68	3.5	89.5
Other Islanders	58	3.0	92.5
Asians	35	1.8	94.3
Other Single Ethnicity	26	1.4	95.7
Chamorro/Filipino	28	1.5	97.2
Other Combination	54	2.8	100.0

surveyed. An additional 28 individuals (1.5%) identified themselves as being of Chamorro/Filipino ancestry, and 54 (2.8%) were of other ancestral combinations. The Other Combination category included those of mixed ethnicity, of which most included someone of Chamorro and/or Filipino ancestry. Therefore, a total of about 89% of the 1,928 persons observed were of Chamorro and/or Filipino ancestry. A listing of the various ethnic categories represented in this study appears in the appendices of this report. The average age of the males and females differed among ethnic categories (Table 13 and Figure 7).

Another validity check of the representativeness of this sample was made by comparing the ethnicity information obtained in the study with ethnic breakdowns of the island population as projected by Cooperative Extension Service personnel at the

TABLE 13. Median Age by Ethnicity and Gender

Ethnicity	Gender		
	Male	Female	Both
Other Islanders	16.3	20.8	18.8
Chamorro	19.7	21.6	20.7
Filipino	32.9	28.9	31.0
Caucasian	31.3	35.0	32.9
Asian	33.1	38.3	35.5
All Individuals	21.7	23.1	22.2

University of Guam. The Cooperative Extension Service target population (4), however, includes all people on the island while this study did not include those institutionalized or living on military bases. Upon recomputing the Cooperative Extension Service's figures to accommodate the parameters of this sample, the ethnic composition figures were found to be quite similar to those found in this survey.

4.4 Population Pyramids

Population pyramids are constructed by demographers and others to graphically present the age and gender (sex) distribution of a given population at a given time. Because a large proportion of Guam's population migrated to the island, and since migration is selective, it was expected that the age and sex composition of the various ethnic categories on the island would differ. The construction of population pyramids serves as an excellent means of determining and graphically presenting differences among various ethnic categories on the basis of age

FIGURE 7. Median Age by Ethnicity and Gender

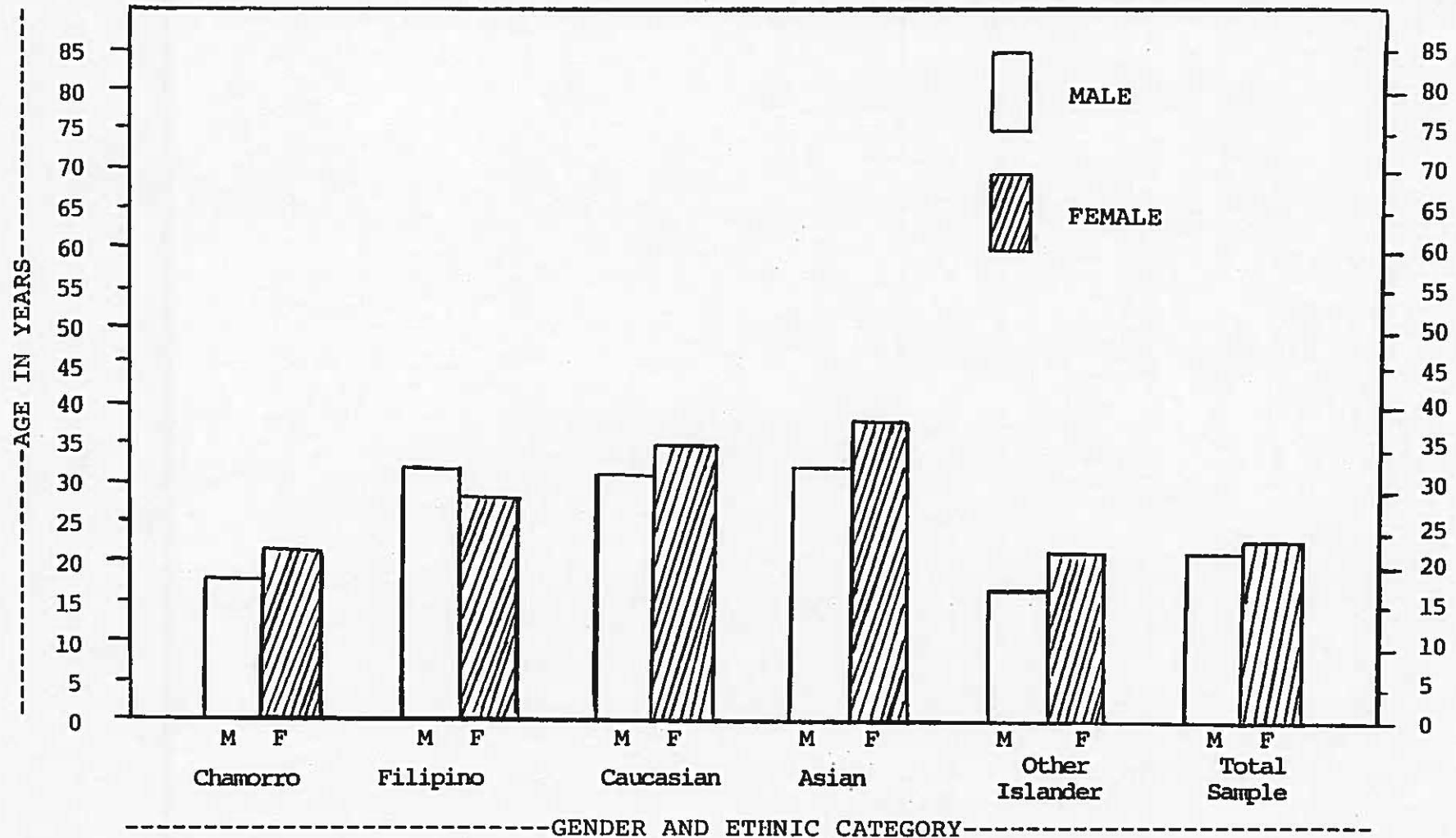


TABLE 14. Total Count by Age and Gender

Age	Male		Female		Both		Cum.%
	f	%	f	%	f	%	
0-4	101	5.24	102	5.29	203	10.53	10.53
5-9	103	5.34	95	4.93	198	10.27	20.80
10-14	103	5.34	119	6.17	222	11.51	32.31
15-19	139	7.21	96	4.98	235	12.19	44.50
20-24	107	5.55	86	4.46	193	10.01	54.51
25-29	57	2.96	62	3.21	119	6.17	60.68
30-34	63	3.27	59	3.06	122	6.33	67.01
35-39	41	2.13	52	2.69	93	4.82	71.83
40-44	53	2.75	44	2.28	97	5.03	76.86
45-49	40	2.08	51	2.65	91	4.72	81.58
50-54	39	2.02	45	2.33	84	4.36	85.94
55-59	48	2.49	40	2.07	88	4.56	90.50
60-64	39	2.02	31	1.61	70	3.63	94.13
65-69	29	1.50	31	1.61	60	3.11	97.24
70-74	11	0.57	14	0.73	25	1.30	98.54
75-79	8	0.41	5	0.26	13	0.67	99.21
80-84	4	0.21	7	0.36	11	0.57	99.78
85-89	-	-	2	0.11	2	0.11	99.89
90-94	-	-	2	0.11	2	0.11	100.00
TOTAL	985	51.09	943	48.91	1,928	100.00	

and gender. The population totals for major ethnic categories appear as Tables 14 to 25, and as pyramids in Figures 8 to 13. Upon inspecting these tables and figures, it may be observed

that considerable differences exist in the age and gender composition of the various subpopulations. This is graphically shown by the general shapes of the pyramids. Broad-based population pyramids, as in the case of the Other Islanders, represent a proportionately younger population than those that are narrow and straight-sided, like the one for the Filipinos. As predicted from immigration and emigration historical data, the male population in this study was expected to equal or exceed that of the female population for all ethnic groups except the Chamorros. Upon reviewing more closely the various population pyramids it may be noted that the sex-ratios were

TABLE 15. Total Count by Varying Age Categories and Gender

Age	Male		Female		Both		Cum. %
	f	%	f	%	f	%	
Under 1	21	1.09	18	0.93	39	2.02	2.02
1-4	80	4.15	84	4.36	164	8.51	10.53
5-15	246	12.76	226	11.72	472	24.48	35.01
16-17	51	2.65	35	1.82	86	4.46	39.47
18-19	48	2.49	49	2.54	97	5.03	44.50
20-21	57	2.96	42	2.18	99	5.13	49.63
22-39	211	10.94	217	11.26	428	22.20	71.83
40-54	132	6.85	140	7.26	272	14.11	85.94
55-64	87	4.51	71	3.68	158	8.20	94.14
65 +	<u>52</u>	<u>2.70</u>	<u>61</u>	<u>3.16</u>	<u>113</u>	<u>5.86</u>	100.00
TOTAL	985	51.10	943	48.91	1,928	100.00	
Range	Under 1-84		Under 1-92		Under 1-92		

FIGURE 8. Population Pyramid: Total Count

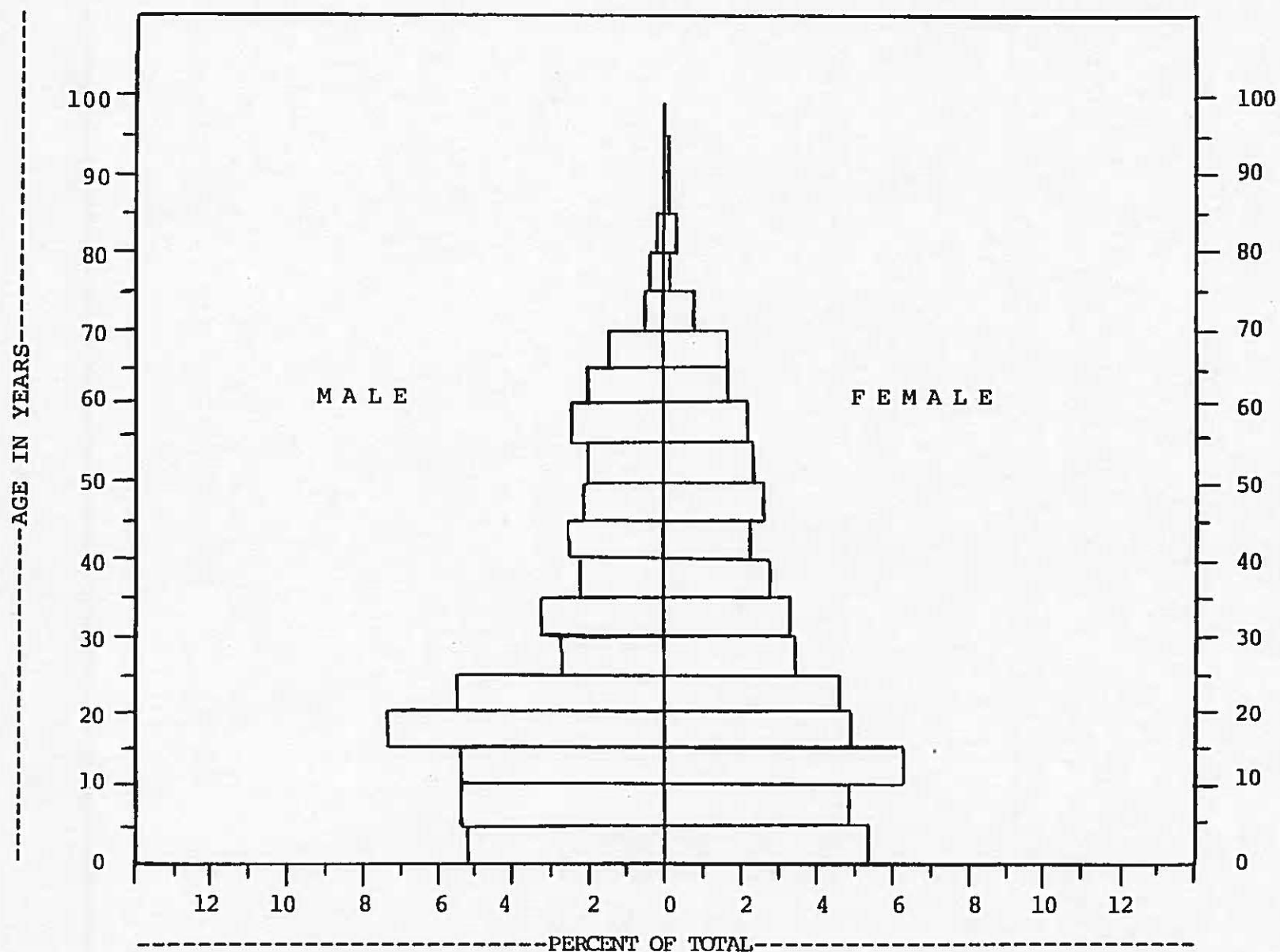


TABLE 16. Chamorros by Age and Gender

Age	Male		Female		Both		Cum. %
	f	%	f	%	f	%	
0- 4	62	5.55	61	5.46	123	11.01	11.01
5- 9	55	4.92	57	5.10	112	10.02	21.03
10-14	68	6.09	76	6.80	144	12.89	33.92
15-19	96	8.59	63	5.64	159	14.23	48.15
20-24	69	6.18	65	5.82	134	12.00	60.15
25-29	28	2.51	35	3.13	63	5.64	65.79
30-34	30	2.69	31	2.78	61	5.47	71.26
35-39	21	1.88	26	2.33	47	4.21	75.47
40-44	28	2.51	20	1.79	48	4.30	79.77
45-49	18	1.61	32	2.86	50	4.47	84.24
50-54	17	1.52	23	2.06	40	3.58	87.82
55-59	21	1.88	22	1.97	43	3.85	91.67
60-64	14	1.25	18	1.61	32	2.86	94.53
65-69	12	1.07	18	1.61	30	2.68	97.21
70-74	6	0.54	7	0.63	13	1.17	98.38
75-79	2	0.18	3	0.27	5	0.45	98.83
80-84	3	0.27	6	0.54	9	0.81	99.64
85-89	-	-	2	0.18	2	0.18	99.82
90-94	-	-	2	0.18	2	0.18	100.00
TOTAL	550	49.24	567	50.76	1,117	100.00	
Median		19.69		21.62		20.76	

generally high except for the Other Islanders. In particular, the male populations generally exceeded the female populations, beginning at age 25, for the various ethnic subgroups except the Chamorros. The situation of the Chamorro population was found to be the exact opposite. Chamorro women outnumbered the men in all categories beginning at age 25, except for those ages 40 to 44. This finding would tend to further support the concept of selective migration. Simply stated, with few exceptions, men are more likely to migrate than women. The net result for the island of Guam continued to be one of Chamorro

TABLE 17. Chamorros by Varying Age Categories and Gender

Age	Male		Female		Both		Cum.%
	f	%	f	%	f	%	
Under 1	11	0.98	12	1.07	23	2.06	2.06
1-4	51	4.57	49	4.39	100	8.95	11.01
5-15	150	13.43	142	12.71	292	26.14	37.15
16-17	34	3.05	24	2.15	58	5.19	42.34
18-19	35	3.13	30	2.69	65	5.82	48.16
20-21	37	3.31	33	2.96	70	6.27	54.43
22-39	111	9.94	124	11.10	235	21.04	75.47
40-54	63	5.64	75	6.71	138	12.36	87.83
55-64	35	3.13	40	3.58	75	6.71	94.54
65 +	<u>23</u>	<u>2.06</u>	<u>38</u>	<u>3.40</u>	<u>61</u>	<u>5.46</u>	100.00
TOTAL	550	49.24	567	50.76	1,117	100.00	
Range	Under 1-84		Under 1-92		Under 1-92		

FIGURE 9. Population Pyramid: Chamorro

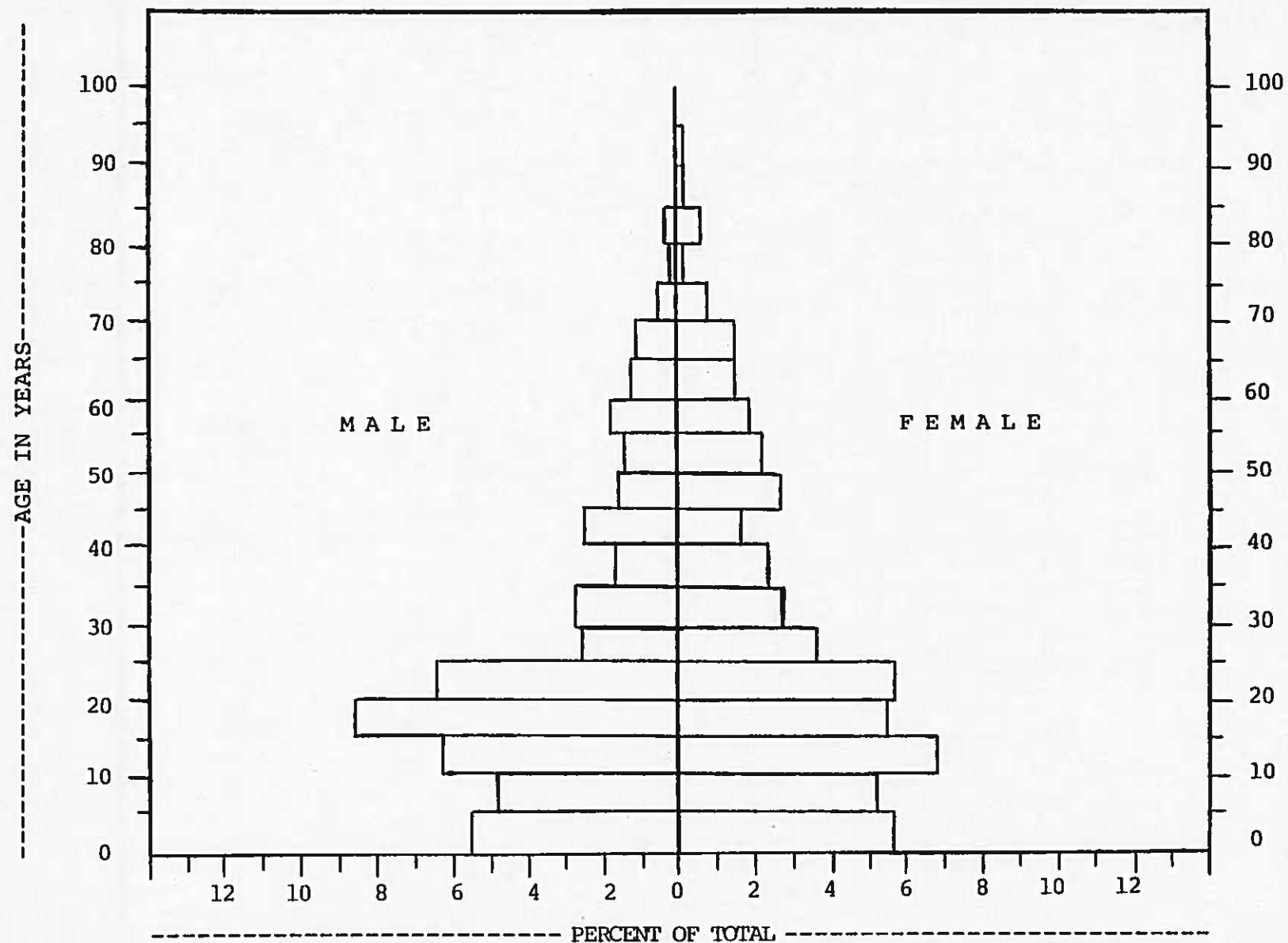


TABLE 18. Filipinos by Age and Gender

Age	Male		Female		Both		Cum. %
	f	%	f	%	f	%	
0 -4	20	3.69	29	5.35	49	9.04	9.04
5 -9	23	4.24	27	4.99	50	9.23	18.27
10-14	25	4.61	23	4.24	48	8.85	27.12
15-19	26	4.80	25	4.61	51	9.41	36.53
20-24	19	3.51	17	3.14	36	6.64	43.17
25-29	16	2.95	13	2.40	29	5.35	48.52
30-34	19	3.51	21	3.87	40	7.38	55.90
35-39	11	2.03	14	2.58	25	4.61	60.51
40-44	20	3.69	18	3.32	38	7.01	67.52
45-49	15	2.77	14	2.58	29	5.35	72.87
50-54	19	3.51	18	3.32	37	6.83	79.70
55-59	23	4.24	13	2.40	36	6.64	86.34
60-64	19	3.51	10	1.85	29	5.35	91.69
65-69	14	2.58	12	2.22	26	4.80	96.49
70-74	5	0.92	6	1.11	11	2.03	98.52
75-79	5	0.92	1	0.18	6	1.11	99.63
80-84	1	0.18	1	0.18	2	0.37	100.00
85-90	-	-	-	-	-	-	
90-94	-	-	-	-	-	-	
TOTAL	280	51.66	262	48.34	542	100.00	
Median Age		32.89		28.85		31.00	

men, after age 25, leaving home only to be numerically replaced on island by men primarily from the Philippines, United States, and nearby Asian countries.

Another noteworthy characteristic of the ethnic subpopulations was the variation in the proportion of elderly. Nearly one out of every five Filipinos studied (20.3%) were age 55 or older. Further, elderly Filipino men outnumbered the elderly Filipino women by a ratio of approximately 3 to 2. Proportionately, the Chamorro population was not as old as that of the Filipinos. The older Chamorros of at least age 55 made up only 12.2% of their subpopulation. In contrast to Filipinos,

TABLE 19. Filipinos by Varying Age Categories and Gender

Age	Male		Female		Both		Cum.%
	f	%	f	%	f	%	
Under 1	3	0.55	5	0.93	8	1.48	1.48
1-4	17	3.14	24	4.42	41	7.56	9.04
5-15	55	10.15	53	9.78	108	19.93	27.12
16-17	13	2.40	6	1.10	19	3.50	32.47
18-19	6	1.11	16	2.95	22	4.06	36.53
20-21	12	2.21	8	1.48	20	3.69	40.22
22-39	53	9.78	57	10.52	110	20.30	60.52
40-54	54	9.96	50	9.23	104	19.19	79.71
55-64	42	7.75	23	4.24	65	11.99	91.70
65+	<u>25</u>	<u>4.61</u>	<u>20</u>	<u>3.69</u>	<u>45</u>	<u>8.30</u>	100.00
TOTAL	280	51.66	262	48.34	542	100.00	
Range	Under 1-84		Under 1-84		Under 1-84		

FIGURE 10. Population Pyramid: Filipino

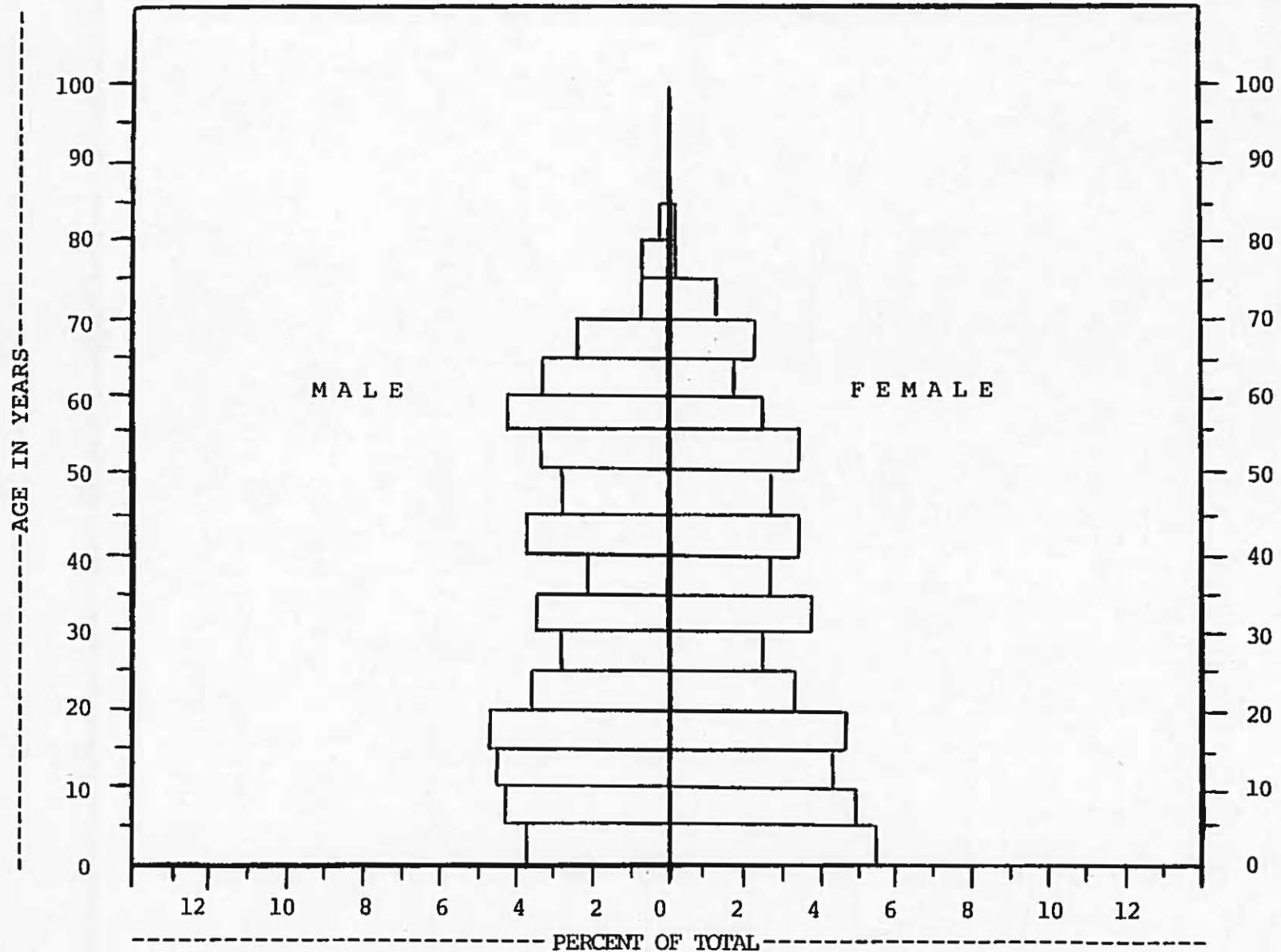


TABLE 20. Caucasians by Age and Gender

Age	Male		Female		Both		Cum. %
	f	%	f	%	f	%	
0 -4	-	-	1	1.47	1	1.47	1.47
5 -9	2	2.94	-	-	2	2.94	4.41
10-14	2	2.94	4	5.88	6	8.83	13.24
15-19	3	4.41	2	2.94	5	7.35	20.59
20-24	6	8.83	1	1.47	7	10.30	30.89
25-29	5	7.35	4	5.88	9	13.23	44.12
30-34	4	5.88	3	4.41	7	10.29	54.41
35-39	3	4.41	6	8.83	9	13.23	67.64
40-44	2	2.94	3	4.41	5	7.35	74.99
45-49	3	4.41	2	2.94	5	7.35	82.34
50-54	1	1.47	1	1.47	2	2.94	85.28
55-59	2	2.94	2	2.94	4	5.88	91.16
60-64	1	1.47	-	-	1	1.47	92.63
65-69	3	4.41	1	1.47	4	5.88	98.51
70-74	-	-	-	-	-	-	98.51
75-79	1	1.47	-	-	1	1.47	99.98
80-84	-	-	-	-	-	-	
85-89	-	-	-	-	-	-	
90-94	-	-	-	-	-	-	
TOTAL	38	55.87	30	44.11	68	99.98	
Median	31.25		35.00		32.86		

Chamorro women comprised a much larger proportion of their elderly population than Chamorro men.

Approximately one out of every seven (14.7%) Caucasians was in the 55 and older age category. A similar number (14.3%) of Asians were at least 55 years old. The ethnic group with the smallest proportion of elderly was that of Other Islander people. Only 5.2% of those who said they were from the Other Islands were 55 years of age or older.

TABLE 21. Caucasians by Varying Age Categories and Gender

Age	Male		Female		Both		Cum. %
	f	%	f	%	f	%	
Under 1	-	-	-	-	-	-	-
1-4	-	-	1	1.47	1	1.47	1.47
5-15	6	8.83	4	5.88	10	14.71	16.18
16-17	1	1.47	-	-	1	1.47	17.65
18-19	-	-	2	2.94	2	2.94	20.59
20-21	1	1.47	-	-	1	1.47	22.06
22-39	17	25.00	14	20.59	31	45.59	67.65
40-54	6	8.82	6	8.83	12	17.65	85.30
55-64	3	4.41	2	2.94	5	7.35	92.65
65-92	<u>4</u>	<u>5.88</u>	<u>1</u>	<u>1.47</u>	<u>5</u>	<u>7.35</u>	100.00
TOTAL	38	55.88	30	44.12	68	100.00	
Range	5-79		Under 1-69		Under 1-79		

FIGURE 11. Population Pyramid: Caucasian

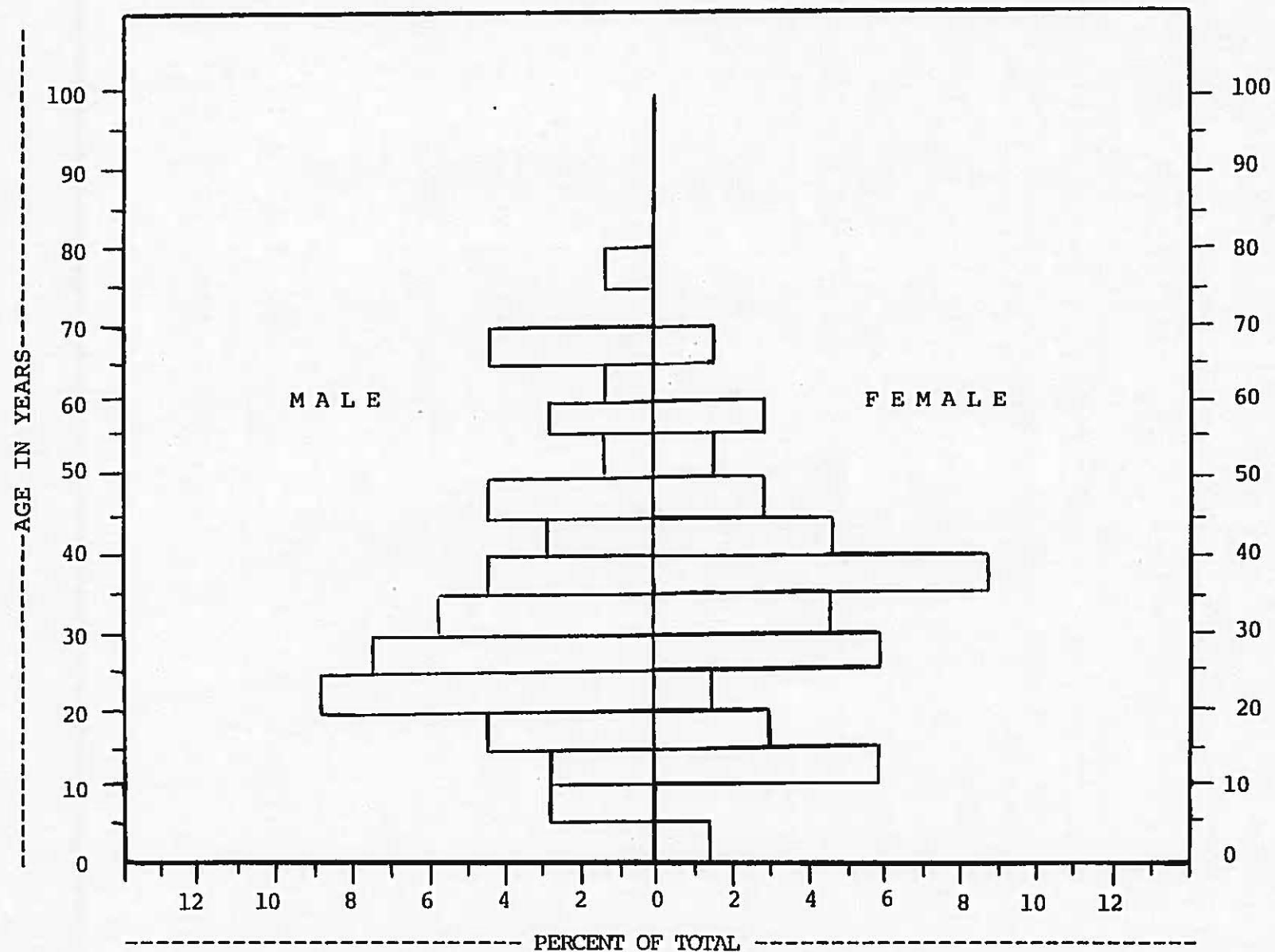


TABLE 22. Other Islanders by Age and Gender

Age	Male		Female		Both		Cum. %
	f	%	f	%	f	%	
0- 4	7	12.07	5	8.62	12	20.69	20.69
5- 9	3	5.17	4	6.90	7	12.07	32.76
10-14	2	3.45	5	8.62	7	12.07	44.83
15-19	2	3.45	2	3.45	4	6.90	51.73
20-24	3	5.17	1	1.73	4	6.90	58.63
25-29	3	5.17	4	6.90	7	12.07	70.70
30-34	2	3.45	1	1.72	3	5.17	75.87
35-39	2	3.45	3	5.17	5	8.62	84.49
40-44	2	3.45	-	-	2	3.45	87.94
45-49	2	3.45	1	1.72	3	5.17	93.11
50-54	-	-	1	1.72	1	1.72	94.83
55-59	-	-	-	-	-	-	-
60-64	1	1.72	2	3.45	3	5.17	100.00
65-69	-	-	-	-	-	-	
70-74	-	-	-	-	-	-	
75-79	-	-	-	-	-	-	
80-84	-	-	-	-	-	-	
85-89	-	-	-	-	-	-	
90-94	-	-	-	-	-	-	
TOTAL	29	50.00	29	50.00	58	100.00	
Median	20.80		16.25		18.75		

TABLE 23. Other Islanders by Varying Age Categories and Gender

Age	Male		Female		Both		Cum. %
	f	%	f	%	f	%	
Under 1	2	3.45	1	1.72	3	5.17	5.17
1-4	5	8.62	4	6.90	9	15.52	20.69
5-15	6	10.35	9	15.52	15	25.86	46.55
16-17	1	1.72	2	3.45	3	5.17	51.72
18-19	-	-	-	-	-	-	-
20-21	2	3.45	1	1.72	3	5.17	56.89
22-39	8	13.79	8	13.79	16	27.59	84.48
40-54	4	6.90	2	3.45	6	10.35	94.83
55-64	1	1.72	2	3.45	3	5.17	100.00
65 +	-	-	-	-	-	-	
TOTAL	29	50.00	29	50.00	58	100.00	
Range	Under 1-64		Under 1-64		Under 1-64		

FIGURE 12. Population Pyramid: Other Islanders

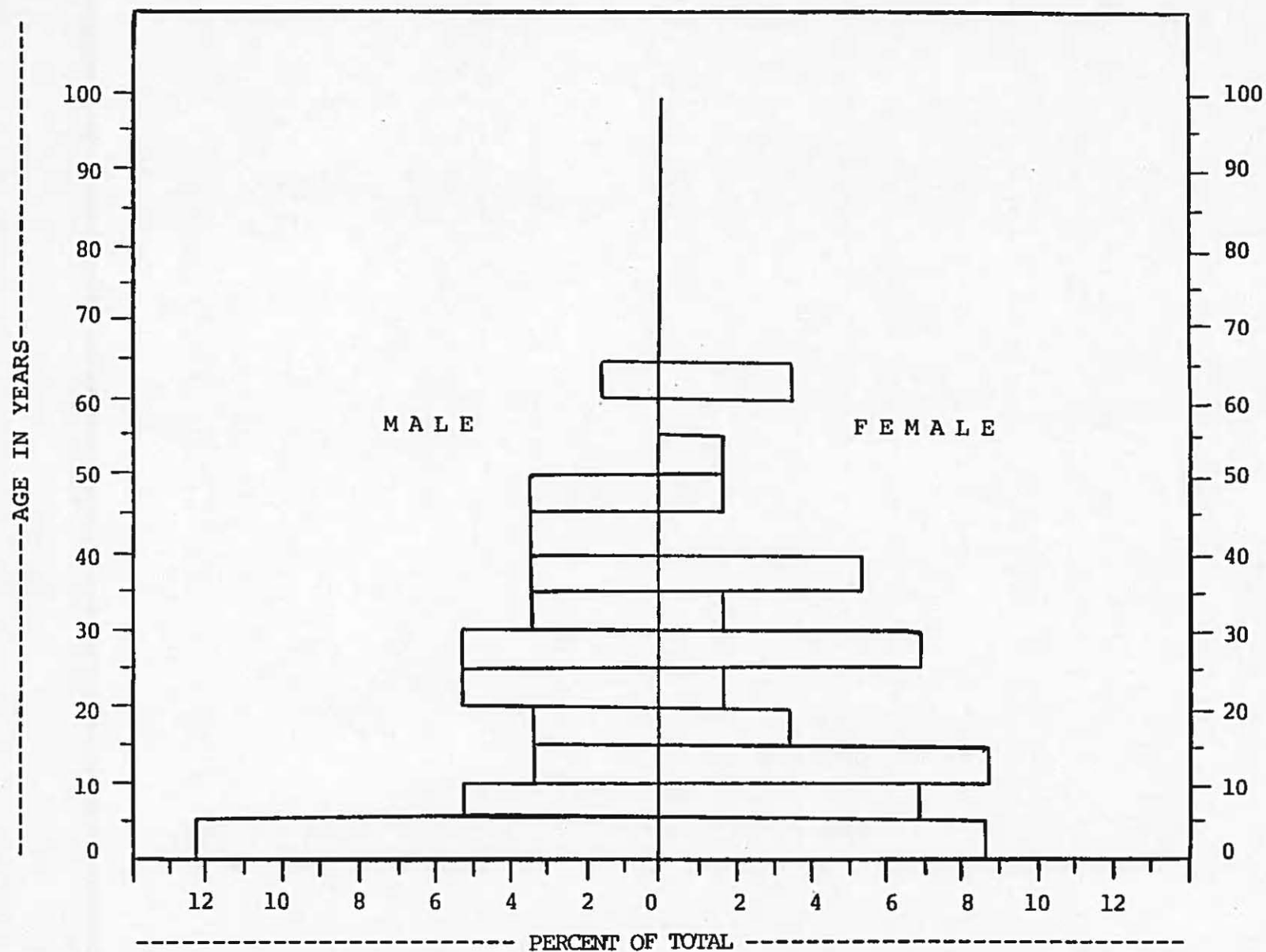


TABLE 24. Asians by Age and Gender

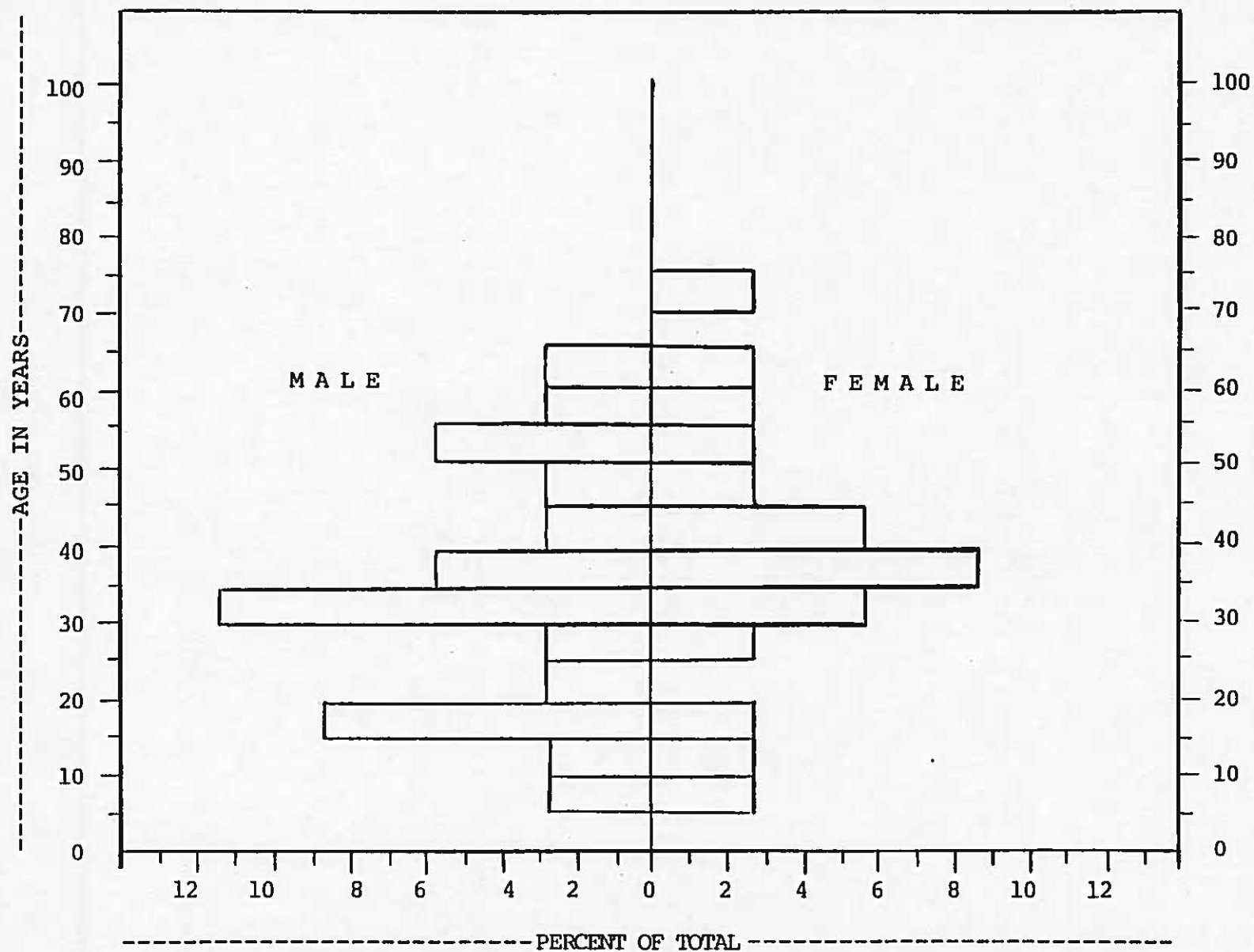
Age	Male		Female		Both		Cum. %
	f	%	f	%	f	%	
0-4	-	-	-	-	-	-	-
5-9	1	2.86	1	2.86	2	5.72	5.72
10-14	1	2.86	1	2.86	2	5.72	11.44
15-19	3	8.57	1	2.86	4	11.43	22.87
20-24	1	2.86	-	-	1	2.86	25.73
25-29	1	2.86	1	2.86	2	5.72	31.45
30-34	4	11.42	2	5.71	6	17.13	48.58
35-39	2	5.71	3	8.57	5	14.28	62.87
40-44	1	2.86	2	5.71	3	8.57	71.43
45-49	1	2.86	1	2.86	2	5.72	77.15
50-54	2	5.71	1	2.86	3	8.57	85.72
55-59	1	2.86	1	2.86	2	5.72	91.44
60-64	1	2.86	1	2.86	2	5.72	97.16
65-69	-	-	-	-	-	-	-
70-74	-	-	1	2.86	1	2.86	100.02
75-79	-	-	-	-	-	-	-
80-84	-	-	-	-	-	-	-
85-89	-	-	-	-	-	-	-
90-94	-	-	-	-	-	-	-
TOTAL	19	54.29	16	45.73	35	100.02	
Median	33.13		38.30		35.50		

The age/sex structural pyramids for the Caucasians and Asians were remarkably similar. Both were narrow at the bottom and top with a corresponding expansion in the middle. This suggests that a large percentage of their respective populations can be found in the working age bracket of 20 to 50 years. It may be of interest to note that among the 20 to 29 years-old Caucasians 7 out of every 10 were males, while for those ages 35 to 45 the sex ratio was the opposite.

TABLE 25. Asians by Varying Age Categories and Gender

Age	Male		Female		Both		Cum. %
	f	%	f	%	f	%	
Under 1	-	-	-	-	-	-	-
1-4	-	-	-	-	-	-	-
5-15	3	8.57	2	5.71	5	14.29	14.29
16-17	1		1	2.86	2	5.71	20.00
18-19	1		-	-	-	2.86	22.86
20-21	1	2.86	-	-	1	2.86	25.72
22-39	7	20.00	6	17.14	13	37.14	62.86
40-54	4	11.43	4	11.43	8	22.86	85.72
55-64	2	5.71	2	5.71	4	11.42	97.14
65 +	-	-	1	2.86	1	2.86	100.00
TOTAL	19	54.29	16	45.71	35	100.00	
Range	5-64		5-74		5-74		

FIGURE 13. Population Pyramid: Asian



The impact that these varying population distributions of each ethnic subpopulation may have on the health care services offered on the island is not clear at this time. Until it is known whether individuals who migrated to Guam will continue to live on the island permanently as they advance to their frail elderly years or return to their original homeland, it will be difficult to predict total health care needs for the island as a whole. In particular, this will be critical for the Filipino category since this category makes up more than 28% of the island population. Similarly, at this time it is not known if the Chamorro men who left the island over the past 40 years will return to Guam as they retire and approach their final years. Upon reviewing Figure 10, it would appear that many of the Filipino males who migrated to Guam during the 15- to 20-year period following World War II to meet specialized labor needs are now in the 55 to 64 age bracket. The sex ratio for that specific 10-year age bracket was found to be 183. This was double the size normally expected. Based on general information it is likely that most of these individuals will remain on Guam permanently. However, there are other more elderly Filipinos over 70 years of age living on the island and in many cases they are relative newcomers. They came to Guam during the last 10 years to join other family members such as their children who had already become established as United States citizens. It is believed that a sizable proportion of those elderly individuals will return again to their homeland as they reach their final years. No definitive data exist on this

subject. It is recommended that a future study be designed to deal with this aspect of circular migration in order to establish more meaningful information for planning health care and services for frail elderly.

SECTION FIVE

MARITAL STATUS

5.1 Marriage and Age

Those being interviewed were asked to indicate the marital status of all household members who were 16 years old or older. On reviewing the results of the survey, it was found that 34.1% had never been married. Of these, 258 (60.4%) were age 16 to 21. Approximately 58% were "married" either for the first or second time, or as common law. An additional 3.1% were either separated or divorced, and the remaining 5.2% indicated that they were widowed (Table 26).

It may be of interest to note that only 2% of those who were married at the time of the study were in the 16 to 21 age group. The percentage figure was much higher (27.8%) for those who indicated common law marriage in the same age groups. Out of the 282 individuals 16 to 21, 13 (4.6%) were married, 10 (3.8%) were involved in common law marriages, 1 (0.4%) was separated and the remaining 91.5% were single and never been married.

For the elderly ages 55 to 64, 81.1% were "married." A relatively high percentage of the oldest age category, 65 and over, were also married. The percentage figure was 66.3. The widowed made up 30.1% of this most senior age category.

TABLE 26. Marital Status by Age

Marital Status	Age																Total	
	16-17		18-19		20-21		16-21		22-39		40-54		55-64		65 & Older			
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%		
Single	85	98.8	88	90.7	85	85.9	258	91.5	144	33.6	18	6.6	6	3.8	1	0.9	427	34.1
Married once	-	-	6	6.2	7	7.1	13	4.6	231	54.0	201	73.9	127	80.4	70	61.9	642	51.2
Married more than once	-	-	-	-	-	-	-	-	14	3.3	15	5.9	8	5.1	5	4.4	43	3.4
Common law	1	1.2	3	3.1	6	6.1	10	3.5	20	4.7	5	1.8	1	0.6	-	-	36	2.9
Widowed	-	-	-	-	-	-	-	-	2	0.5	13	4.8	16	10.1	34	30.1	65	5.2
Separated	-	-	-	-	1	1.0	1	0.4	3	0.7	7	2.6	-	-	1	0.9	12	1.0
Divorced	-	-	-	-	-	-	-	-	14	3.3	11	4.0	-	-	1	0.9	26	2.1
NA/DK	-	-	-	-	-	-	-	-	-	-	1	0.4	-	-	1	0.9	2	0.2
TOTAL	86	100.0	97	100.0	99	100.1	281	100.0	428	100.1	272	100.0	158	100.0	113	100.0	1253	100.1

SECTION SIX

EDUCATIONAL LEVEL

6.1 Age

The average (median) level of formal education for those age 16 and older was that of a high school diploma (Table 25 and 26). The arithmetic mean was calculated and found, however, to be about a year less at 10.8. This difference was due to skewness of the education distribution curve toward the little or no education tail. Overall, 58.0% were high school graduates, and 39.0% of these had continued their studies in college. The remainder (42.0%) with less than a high school diploma, included the 16- to 19-years-old students who were still attending high school, as normally expected (Figure 14 and 15). Specifically, only 9.3% of the 16- and 17-years-old individuals in the study had high school degrees, whereas the percentage figure rose to 60.0% for those 18 and 19 years old and to 83.4% for those 20 to 24 years old. Thus, those who were 20 years or older were also considered when analyzing the data in order to eliminate most of the "in high school" bias when recalculating the average level of education. When this was done the proportion that represented high school graduates went up to 62.0%.

The level of education was determined by obtaining from respondents the highest grade in school completed by all those in the household. There were occasional "don't know" answers

TABLE 27. Level of Education by Five-Year Age Intervals

Education	Age																Total	Percent
	16-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90-92		
None	-	1	-	-	-	1	1	-	-	1	1	2	2	3	1	2	15	1.22
1 - 5	-	-	-	2	3	2	7	12	24	27	20	7	8	6	1	-	119	9.65
6 - 8	10	1	2	4	6	11	17	18	12	10	19	8	1	-	-	-	119	9.65
9 - 11	107	30	18	19	21	15	19	9	12	7	4	2	-	1	-	-	264	21.41
12	57	119	47	36	33	39	27	26	22	12	10	-	-	-	-	-	438	35.52
13 - 15	8	29	24	31	11	15	8	6	13	1	3	1	-	1	-	-	151	12.25
16	-	8	14	23	14	9	8	9	3	7	1	1	-	-	-	-	97	7.87
17 - 19	-	3	3	5	4	5	3	5	-	1	-	2	-	-	-	-	30	2.43
TOTAL	182	191	118	120	92	97	90	84	86	66	58	23	11	11	2	2	1,233*	100.00
Mean	10.64	12.16	12.64	12.91	12.05	11.81	10.57	10.36	9.09	7.92	7.26	7.24	3.18	4.09	1.75	-		
NA/DK	1	2	1	2	1	-	1	-	2	4	2	2	2	-	-	-		

* Total figure does not include 20 individuals for whom insufficient information was available. This included at least one individual over 16 years of age who was attending Brodie Memorial School which does not have standard grades of 1-12. In other cases, the respondents were unable to provide the interviewer with the number of years of school completed by individuals who had attended schools in foreign countries.

FIGURE 14. Education Level (Years of Schooling Completed)

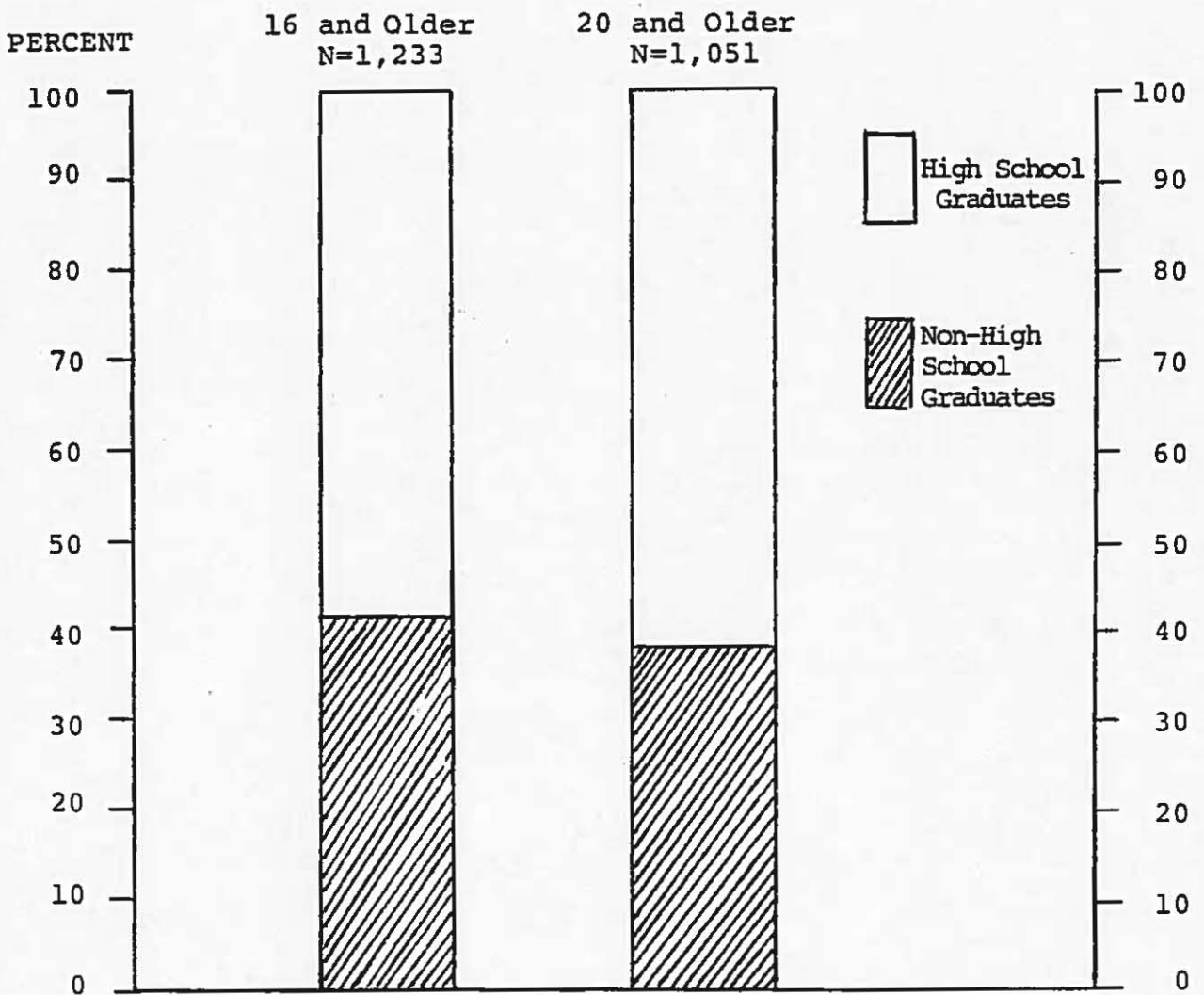


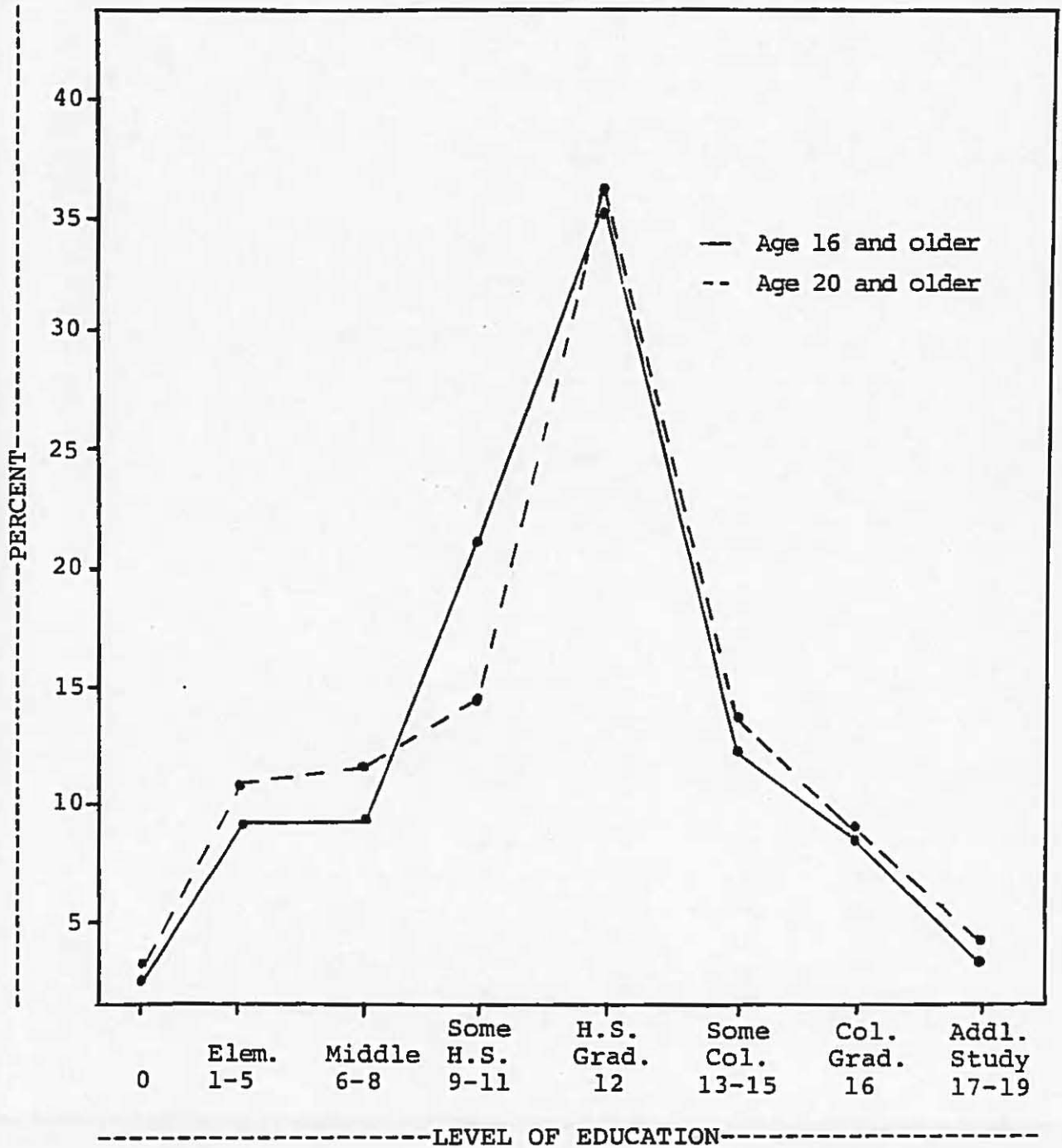
TABLE 28. Total Count Education Level Distribution

Education	Age 16 and Older			Age 20 and Older		
	f	%	Cum.%	f	%	Cum.%
None	15	1.22	1.22	15	1.43	1.43
1-5	119	9.65	10.87	119	11.32	12.75
6-8	119	9.65	20.52	109	10.37	23.12
9-11	264	21.41	41.93	157	14.94	38.06
12	438	35.52	77.45	381	36.25	74.31
13-15	151	12.25	89.70	143	13.61	87.92
16	97	7.87	97.57	97	9.23	97.15
17-19	<u>30</u>	<u>2.43</u>	100.00	<u>30</u>	<u>2.85</u>	100.00
TOTAL	1,233	100.00		1,051	100.00	
Median	12th grade			12th grade		
Mean	10.82			10.91		

given, for example, in cases where other than immediate family members were considered members of the same household.

Since health care needs of individuals vary depending on their age, it was considered important to determine the level of education among various age groups. Such age-specific education information could be most helpful for decision-makers and service delivery professionals when developing health education and other programs for the immediate future and also for 10, 20, 30, and 40 years from now. For example, those in this study who were in the age range of 60 to 64 years had completed an average of 8 years of school while the 30- to 34-years-old group had finished about one year of college. Thus,

FIGURE 15. Educational Level Distribution



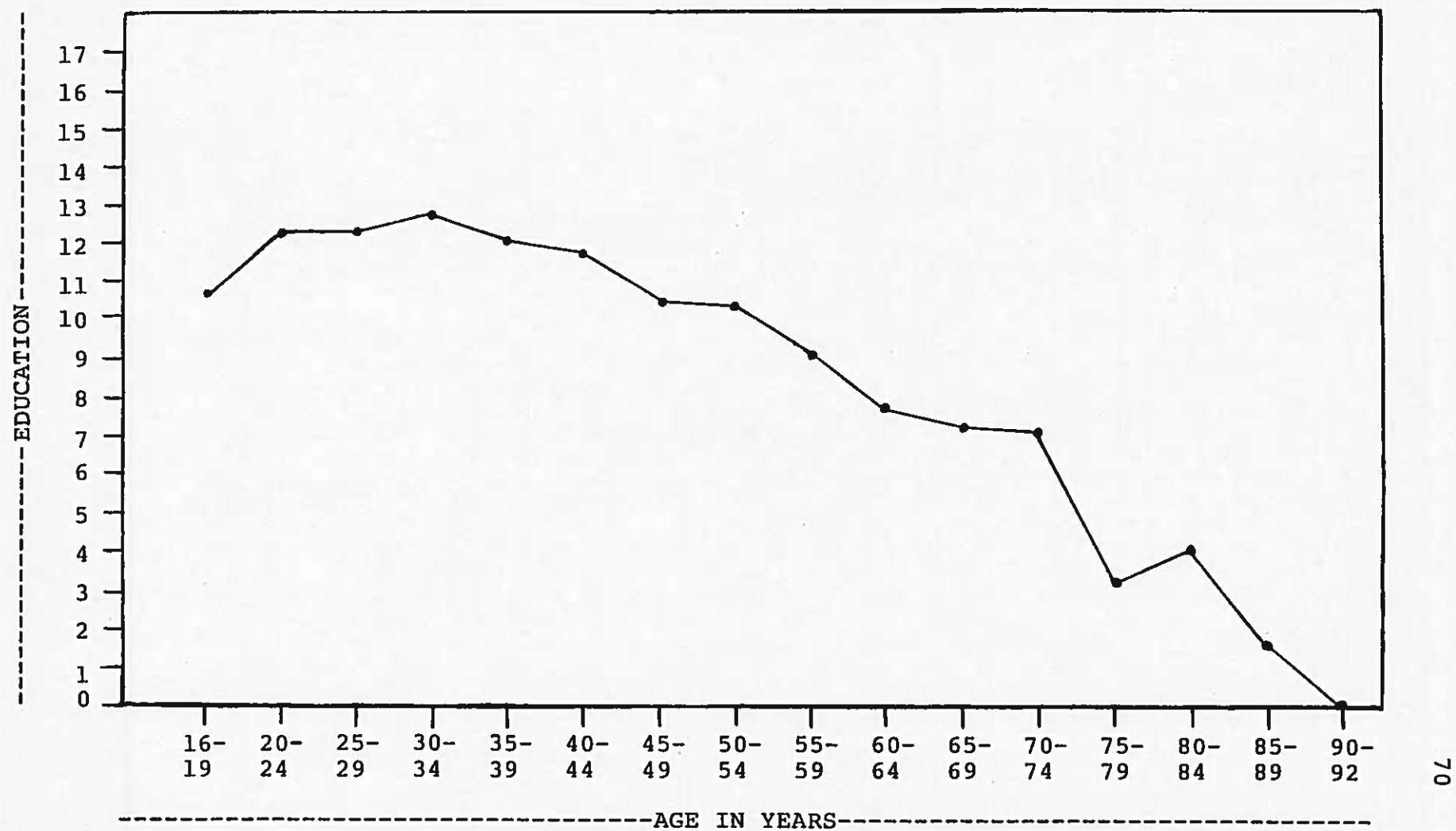
25 years from now health planners and health professionals can expect to be working with senior citizens who, on the average, will have completed not only high school but an additional year of college or university studies.

In view of the history of the development of formal educational programs on the island, the average number of years of schooling completed by age categories was found to vary in direct relation to the establishment of the island educational system. For example, Guam's first daytime high school graduated its first two classes just prior to the War in 1940 and 1941. Compulsory education to age 16 was first established by law in 1950. A couple of years later in 1952, the University of Guam had its beginning and by 1967 graduate level courses were offered. More recently, doctoral courses have been offered on island. Although the number of years of school completed is considered to be a traditional measure of knowledge gained, the value of the measure is highly dependent upon how and for what purpose it is used.

The average number of years of schooling completed increased from 10.64 for those ages 16 to 19 to a high of 12.91 for those 30 to 34 years old. After that, the average level of education declined in a rather linear fashion for each subsequent five-year age interval to the two oldest persons who had not received any formal schooling at all (Figure 16).

A further review of Figure 16 shows that, in general, those who were born since the ending of World War II were the most highly educated category. On the average, such people had

FIGURE 16. Education Level by Age



completed about a half year of college. The exceptions to this, of course, were the 16- to 19-years-old youths, who due to their age were still attending high school. Those in the 40- to 54-years-old range had nearly an eleventh grade education, while the next older group of those 55 to 70 years old had completed formal classes only to the upper middle school level. The more elderly persons (ages 70 to 89) had on the average attended school to the elementary grades and those born in the early 1890's and were over age 90 were reported as not having had any formal education.

6.2 Village

The number of years of school completed was also looked at on a village-by-village basis. None of the villages reached the twelfth grade level. The range was from 8.8 years in the village of Asan/Maina to 11.6 years in Yona. The median was calculated to be 10.8 years which corresponded with the all-island mean of 10.82.

The average level of education in three of the nineteen villages was clearly less than that in the other 16. They were Asan/Maina, Inarajan, and Mongmong/Toto/Maite. The combined averages for these villages was about nine years of school completed. Also below the overall average for the villages, but not as distant, was Talofofo. Its mean was 10.2 years of school. In addition to the village of Yona, Umatac and Agana were found to have the highest average educational levels.

Because village subsamples were selected proportionately on a basis of total village population only a few households

TABLE 29. Level of Education by Villages

Village	Years of School Completed (median)	Range	% with at Least High School Degree	% with High School Education and Continued on to College
Agana	11.44	3-17	72.20	30.80
Agana Heights	10.76	0-18	58.80	36.70
Agat	10.74	0-19	56.00	50.00
Asan/Maina	8.75	0-14	50.00	10.00
Barrigada	11.23	1-18	59.30	37.30
Chalan Pago/Ordot	11.22	4-18	65.90	37.00
Dededo	10.88	0-18	60.60	38.10
Inarajan	8.92	2-16	41.70	30.00
Mangilao	10.76	0-16	58.30	40.00
Merizo	11.15	0-17	64.10	32.00
Mongmong/Toto/Maite	9.18	0-18	37.10	30.40
Piti	10.75	4-16	50.00	58.30
Santa Rita	10.71	1-18	55.60	56.00
Sinajana	10.60	0-15	56.70	23.50
Talofofo	10.23	3-16	43.30	15.40
Tamuning	11.19	0-19	60.30	42.10
Umatac	10.50	11-12	50.00	-
Yigo	11.06	1-17	63.90	35.90
Yona	<u>10.57</u>	<u>1-17</u>	<u>60.80</u>	<u>51.60</u>
All-Island	10.82	0-19	58.07	38.83

were studied in the lesser populated villages. Therefore, the statistical chance of deriving findings which would differ from the true figures would be greater than in the more heavily populated areas. The findings as reported on a village-by-village basis should be interpreted accordingly.

When combining villages into the standard three regions all the four villages in the North and North Central areas had education levels above the all-island mean. The South and South Central regions followed next with three out of seven villages (43.0%) and the Central region with two out of eight villages having an average education level above the all-island average (Table 30).

TABLE 30. Percent of Villages within Regions with Subjects Having Average Levels of Education above the All-Island Average

Regions	Percent
<u>South</u> Far South and South Central	43.0
<u>Central</u>	25.0
<u>North</u> North Central and Far North	100.0

The rank order listing of villages based on the percentage of individuals age 16 and older in the respective villages who had completed at least high school is presented in Figure 17.

FIGURE 17. Rank Order Listing of Villages Based on Percent of Adults 16 Years and Older with at least a High School Level of Education

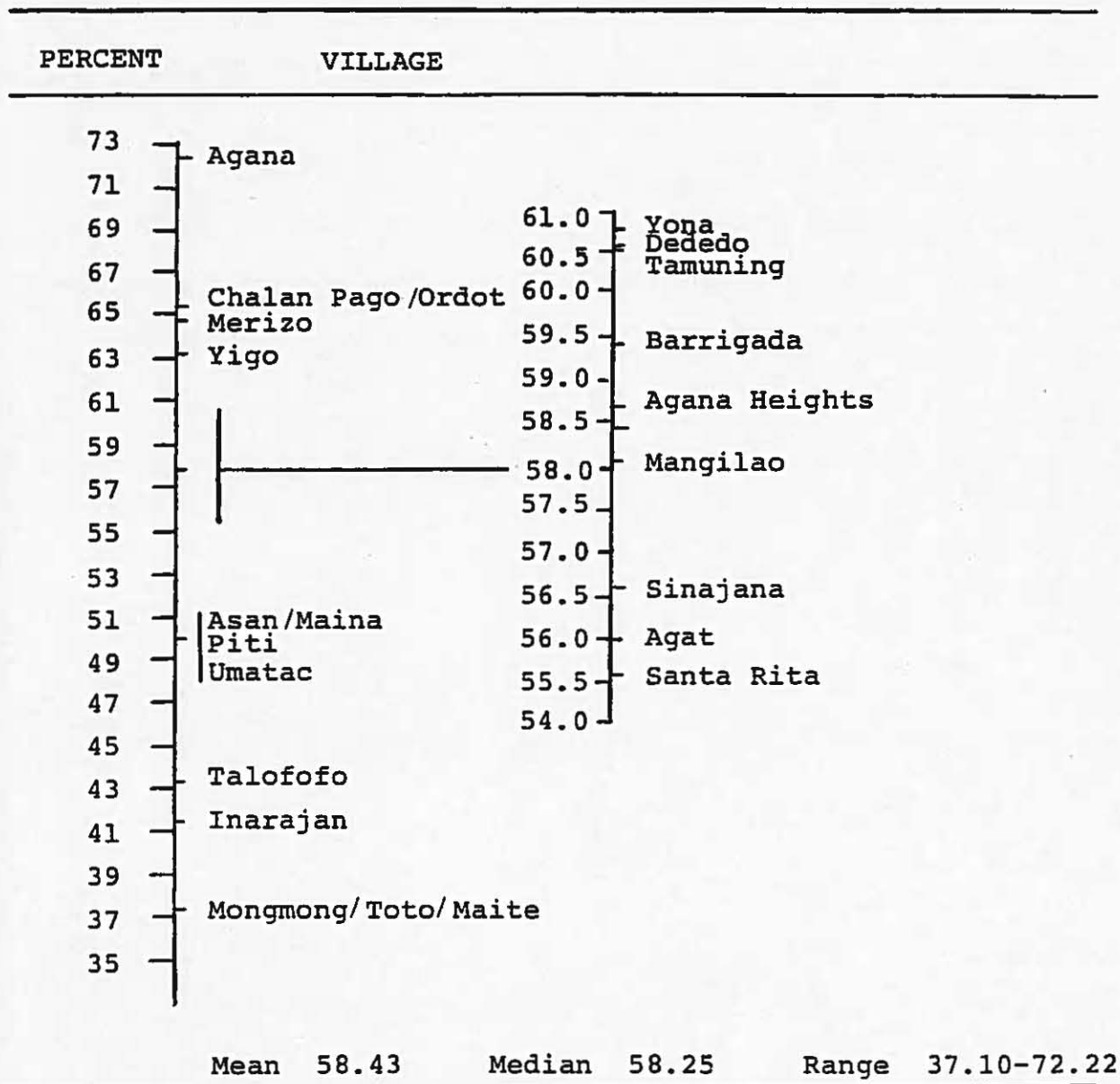
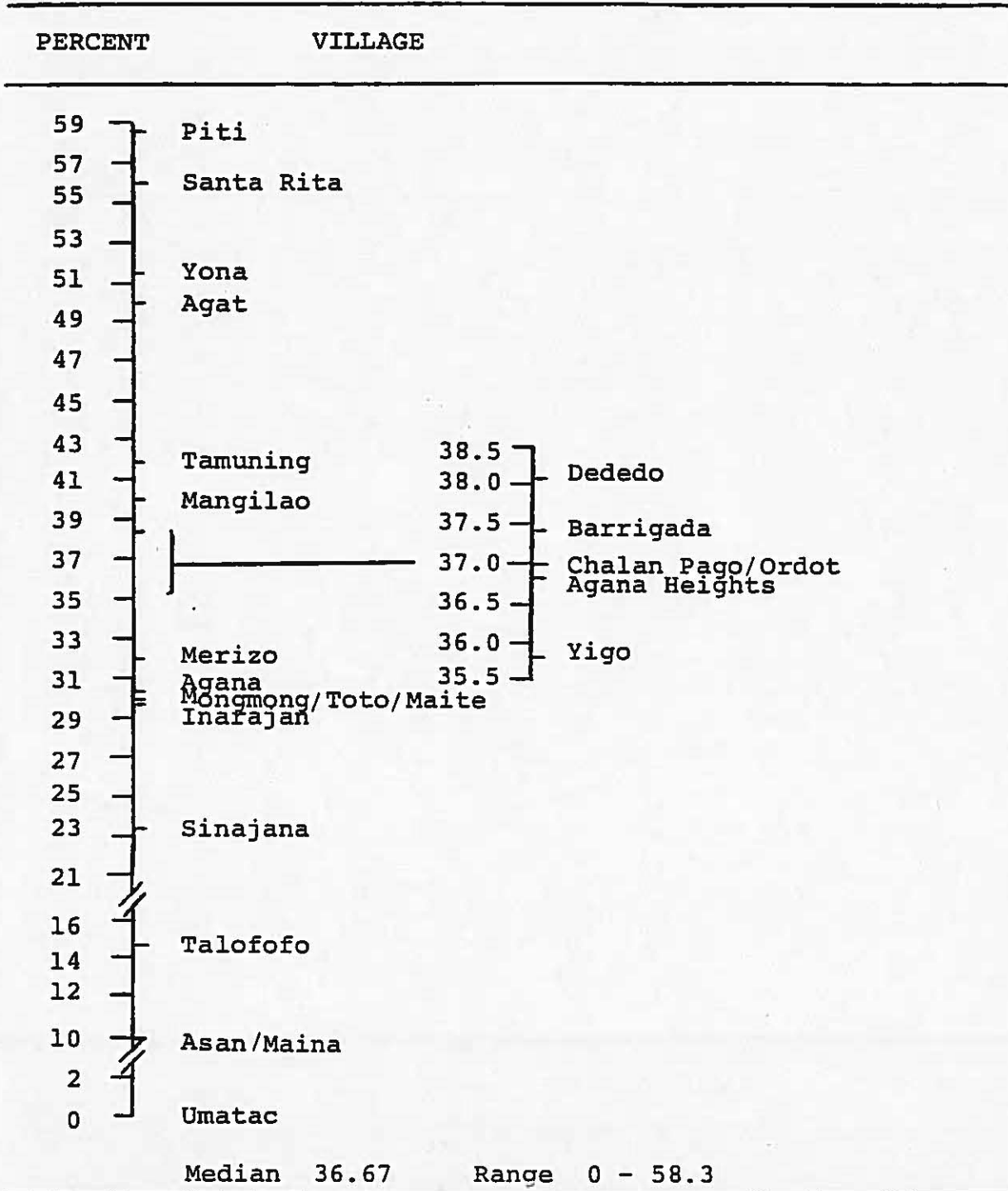


FIGURE 18. Rank Order Listing of Villages Based on Percent of Adults with High School Degrees who had Continued Studies in College/University



As may be observed, the percentages ranged from 37.1 in Mongmong/Toto/Maite to 72.2 in Agana. Both the mean and median for the entire island were 58.0%. Other villages indicating percentage figures somewhat below the islandwide average were Inarajan, Talofoto, Umatac, Piti and Asan/Maina. The three villages, in addition to Agana, that had the larger percentage of high school graduates were located in each of the major island geographical regions. They were Yigo, Merizo and Chalan Pago/Ordot. The nine remaining villages all had percentage figures clustered tightly around the island average.

Shown in Figure 18 is a village rank order listing based on the percentage of individuals with high school diplomas who had continued their formal schooling at the college or university level. The median figure in this case was 36.7%. The range among villages, however, was extreme. While none of the sampled members from Umatac who had completed the twelfth grade had gone on to college, over 58.0% in Piti had done so. Santa Rita, Yona and Agat were also among the villages with the largest percentages of high school graduates who had pursued higher education. Asan/Maina, Talofoto and Sinajana were found to be on the opposite end of the percentage scale along with Umatac.

6.3 Regions

When the villages were combined into geographical regions, there was a definite trend from the north to south. All of the North and North Central villages were above the median, having larger percentages of high school graduates. For the other

regions, respective percentages were 50.0 for the Central and 28.6 for the South and South Central (Table 31).

TABLE 31. Percentage of Villages within a Region where Proportion of Subjects with High School Degrees Exceeded the All-Island Average

Regions	Percent
<u>South</u> Far South and South Central	28.6
<u>Central</u>	50.0
<u>North</u> North Central and Far North	100.0
Median	58.3

When comparing the three major regions on the basis of individuals who had continued their education to the college level, the North region again has the largest percent (75.0%), while the South slightly exceeded the Central region (42.9% to 37.5%) (Table 32).

TABLE 32. Percentage of Villages within a Region Based on Proportion of Subjects with High School Degrees who Continued Formal Education into College

Regions	Percent
<u>South</u> Far South and South Central	42.9
<u>Central</u>	37.5
<u>North</u> North Central and Far North	75.0
Median (overall)	36.9

SECTION SEVEN

INCOME

7.1 Income Received

The next to the final question of the survey asked for income information. The respondents were asked to indicate the approximate annual income for each of the persons in their respective households who was sixteen years or older. Annual income referred to gross (before tax) income. All sources of income were to be combined and reported in the total income figure.

To increase response rate to the income question, the person being interviewed was provided with a flash card* showing various coded categories of annual income and equivalent bi-weekly income figures. The experience of the Community Development Institute personnel as well as other social service researchers has shown that during an interview respondents tend to be more willing to answer personal questions after rapport has been well established. For this reason, the question of income was placed at the end of the interview. A typical response from an interviewee was "I've already told you most everything about my life so I guess I may just as well tell you how much I earn." Using flash cards with coded income categories also was helpful in reducing nonresponses and, it is believed, increased the accuracy of the information reported. Income information was unavailable for only 3.0% (38 out of

*See Appendix D

1,253) individuals interviewed, age 16 or older. This included both the refusals and also those members of the household for which the interviewee was unable to give an income figure. Thus, the refusal rate on the income question was considered to be exceptionally small. Psychologically it seems easier for someone to continue looking at a flash card and respond to the interviewer that his income was a "6" rather than the \$17,731 to \$25,000 category that the code number represented.

The equivalent bi-weekly listing of annual income has been reported by interviewers to be of particular assistance. This was the case, in particular, for those individuals whose concept of income earnings is based on an hourly rate, an eight-hour workday and a pay check every two weeks.

The income categories, exclusive of "no income" ranged from \$1-\$3,000 to the highest category of \$35,000+ per year. These were the same categories used in the Health Needs Assessment of Northern Guam study of 1980. Because of the open-ended income category of \$35,000 or more, median income figures are given in this report rather than arithmetic means. Median figures were calculated using linear interpolations. Reporting of median income figures is generally considered to be more reliable because the median is not affected or influenced by skewness or extreme value in the earned income distribution as is generally the case for the mean.

There were 701 (57.7%) of the 1,215 individuals in the 16 and older category who had income during the 12 month period immediately preceding this survey. The median annual gross

income from all sources reported by these income recipients was \$10,727. Individual annual income ranged from a few hundred dollars to figures in excess of \$35,000. Twenty-four (2.0%) of the 1,215 individuals were in the top (\$35,000 or more per year) category (Table 33).

TABLE 33. Income

Income	f	Percent
No income at all (0)	514	42.30
\$1 - \$3,000	46	3.79
\$3,001 - \$7,830	150	12.35
\$7,831 - \$11,130	176	14.49
\$11,131 - \$14,430	108	8.89
\$14,431 - \$17,730	70	5.76
\$17,731 - \$25,000	82	6.75
\$25,001 - \$35,000	45	3.70
More than \$35,000	<u>24</u>	<u>1.98</u>
TOTAL	1,215*	100.01

Median income of those having an income: \$10,727 (n=701)

Median income of total count (age 16+): \$4,208 (n=1,210)

*Does not include 38 individuals for whom no income information was available.

As should be expected, the median figure of \$10,727 for this 1984 study was higher than the 1980 Federal Bureau of Census finding for Guam. The Census report showed a median income of \$8,510 and a mean figure of \$9,504. Income levels increased during the four-year interval from 1980 to 1984. In

addition, the Federal Census obtained information on all individuals age 15 and older. In this study the younger, high school aged individuals had the lowest average income. Therefore the inclusion of those age 15 in the Census enumeration would further account for a lower median income figure. Thus, it is believed that the income data in this study are valid.

7.2 Age

Nearly three out of four (72.0%) in the 40 to 54 age bracket had income. This was the highest proportion. The median income for this age category was \$12,780, which was also the highest average amount. An equal percentage (47.0%) of the young adults ages 20 and 21 and the oldest group age 65 or older had had income to report. However, as expected, the median income for the older category was \$1,130 greater (at \$8,930) than that of the younger category (Table 34, Figures 19 and 20).

7.3 Gender

While nearly three-fourths (74.0%) of all the males had income to report, less than half (41.0%) of the 599 women had had income during the year prior to the study. The median levels of income for the two gender categories were different, also. The males had a yearly average of \$14,400 as compared to \$9,151 for the females (Table 35). The difference in income of \$5,249 meant that the males on the average had received 57% more income during the year than the females had.

TABLE 34. Number, Percentage, and Median Annual Income of those with income) by Age Categories (N=701)

Age	N	f	%	\$
16-17	84	4	4.8	3,915
18-19	96	34	35.1	6,236
20-21	97	46	46.5	7,800
22-39	415	278	65.0	11,791
40-54	257	195	71.7	12,780
55-64	154	91	57.6	12,100
65+	<u>112</u>	<u>53</u>	<u>46.9</u>	<u>8,930</u>
TOTAL	1,215	701	57.7	10,727

7.4 Ethnicity

Shown in Table 36 is the annual income distribution among the various major ethnic categories represented on Guam. The Filipinos and Other Islanders had median levels of income that fell below the all-island average. These were offset by the Chamorros, Caucasians, Asians and All Others. The range in median ethnic category income varied considerably. The Other Islanders' average was \$9,480, while for the Caucasians it was found to be \$19,093. These differences could be expected. Many of the Other Islanders came to Guam to further their education while the Caucasians migrated to the island to fill professional and other white collar positions. As noted in the Age-Gender-Ethnicity section of this report, the Asians and

FIGURE 19. Median Annual Income for Income Recipients by Age Categories

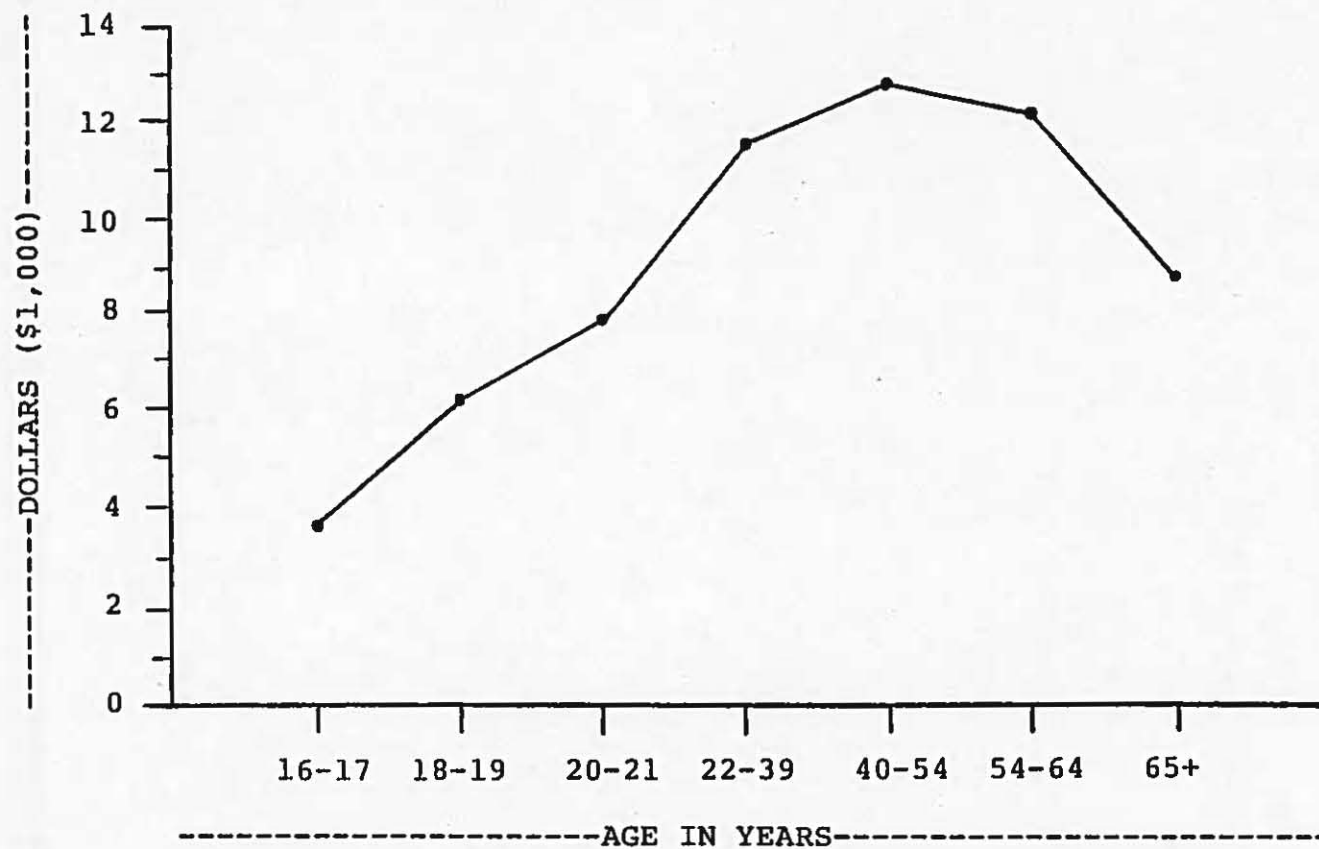


TABLE 35. Analysis of Income by Age and Gender

Age	Male			Female			Total Count			NA/DK	N
	f	%	\$	f	%	\$	f	%	\$		
16-17	1 50	2.00	\$ 5,416	3 34	8.82	\$ 2,250	4 84	4.76	\$ 3,000	2	86
18-19	19 47	40.43	7,428	15 49	30.61	5,013	34 96	35.42	6,220	1	97
20-21	32 57	56.14	7,831	14 40	35.00	6,757	46 97	47.42	7,410	2	99
22-39	173 203	85.22	12,248	105 212	49.53	9,944	278 415	66.99	11,086	13	428
40-54	118 124	95.16	15,298	77 133	57.89	10,051	195 257	75.87	12,781	15	272
55-64	73 83	87.95	13,680	18 71	25.35	9,244	91 154	59.09	12,191	4	158
65+	38 52	73.08	11,130	15 60	25.00	6,105	53 112	47.32	8,581	1	113
TOTAL COUNT	454 616	73.70	\$14,400	247 599	41.24	\$ 9,151	701 1,215	57.70	\$10,727	38	1,253

$$f = \frac{\text{Individuals with Income}}{\text{Total Count} - (\text{NA/DK})}$$

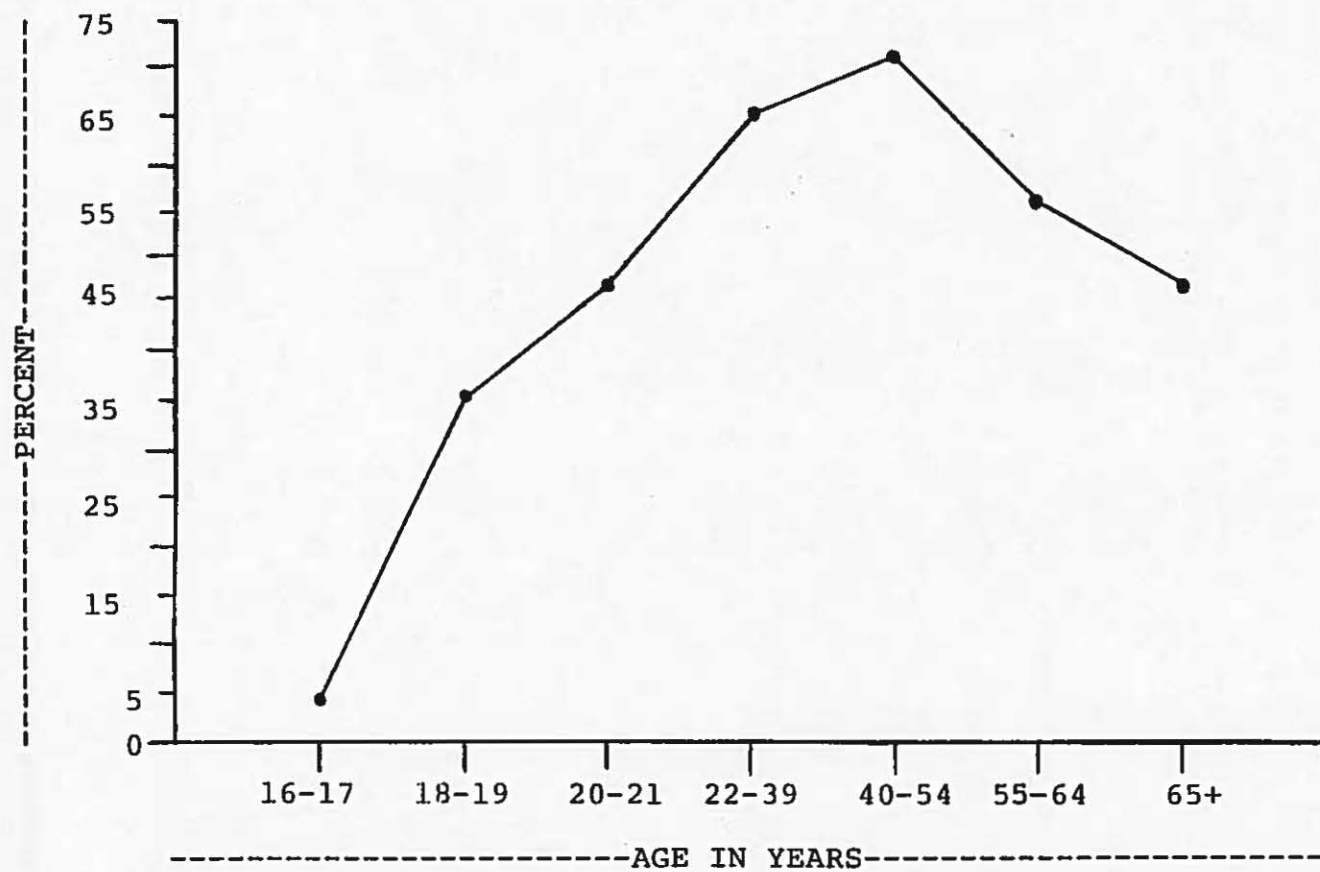
% = Percent with income within category and for total count.

\$ = Median annual income for only those with income.

NA/DK = No income information.

N = Total count including NA/DK.

FIGURE 20. Percentage Distribution of Individuals with Annual Income by Age Categories (N=701)



Caucasians had smaller proportions of their ethnic categories in the young adult and senior citizen age categories. Those age categories of individuals were found to have had lower incomes than those in their middle years. Because of such differences in personal characteristics that are associated with ethnicity in this case, the differences in various median income levels are similar to what would be expected.

These data for the Caucasians do differ from the Federal Bureau of Census information. The Census data of 1980 included over 22,000 military personnel and their dependents while this study did not sample households located on federally held land. A majority of the individuals living in housing on such land are Caucasians and according to the Census report, more are younger individuals under 25 years of age. The military pay for many of these individuals would explain the lower average income level for Caucasians as reported in the Federal Census.

7.5 Ethnicity-Gender

Upon further inspecting Table 36 and Figure 21, it may be observed that Caucasian males had by far the highest average income (\$22,093). It may be of interest to note that the median income of \$13,606 for the Caucasian female was higher than all male and female averages of the various ethnic categories except that of the Caucasian males. The lowest average income was found among the Other Islander females. Many of these individuals are believed to be university students.

Chamorro males ranked second highest among the various male categories on annual income, while the Asian women

TABLE 36. Number, Percentage and Median Annual Income by Ethnicity and Gender

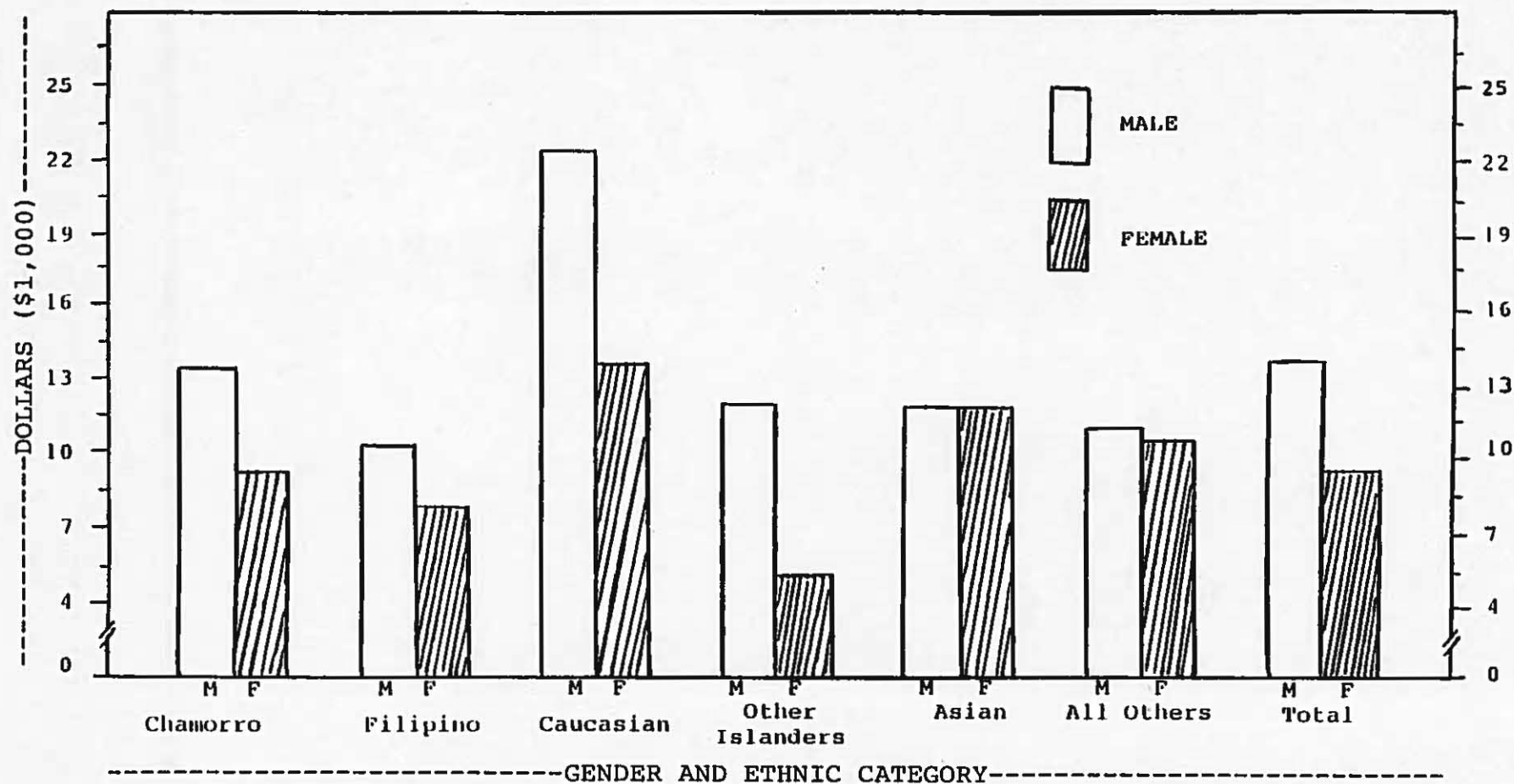
Ethnicity	Male			Female			Total Count		
	f	%	\$	f	%	\$	f	%	\$
Chamorro	228 325	70.2	\$13,231	147 358	41.1	\$ 9,019	375 683	54.9	\$11,074
Filipino	155 200	77.5	10,172	69 170	40.6	8,656	224 370	60.5	10,165
Caucasian	30 32	93.8	22,093	15 25	60.0	13,606	45 57	78.9	19,093
Other Islanders	7 15	46.7	12,781	4 15	26.7	5,500	11 30	36.7	9,480
Asian	14 16	87.5	12,781	3 13	23.1	12,781	17 29	58.6	12,781
All Others	20 28	71.4	11,130	9 18	50.0	10,801	29 46	63.0	10,924
TOTAL	454 616	73.7	\$14,400	247 599	41.2	\$ 9,151	701 1,215	57.7	\$10,727

f = $\frac{\text{Number with Income}}{\text{Total Count} - (\text{NA/DK})}$

% = Percent with income.

\$ = Median income for only those individuals with income.

FIGURE 21. Median Income Distribution by Ethnicity and Gender



reported the second largest average income levels for their gender.

The percentage of income recipients by ethnicity and gender are graphically shown in Figure 22. The corresponding figures appear in Table 36.

As shown in the figure, Caucasians had the highest percentage of income recipients among the various ethnic categories. This held true for both the males and the females. Respective figures were 93.8% and 60.0%. No other group of women was found to have more than half with income. About 41.0% of Chamorro and Filipino women were income recipients.

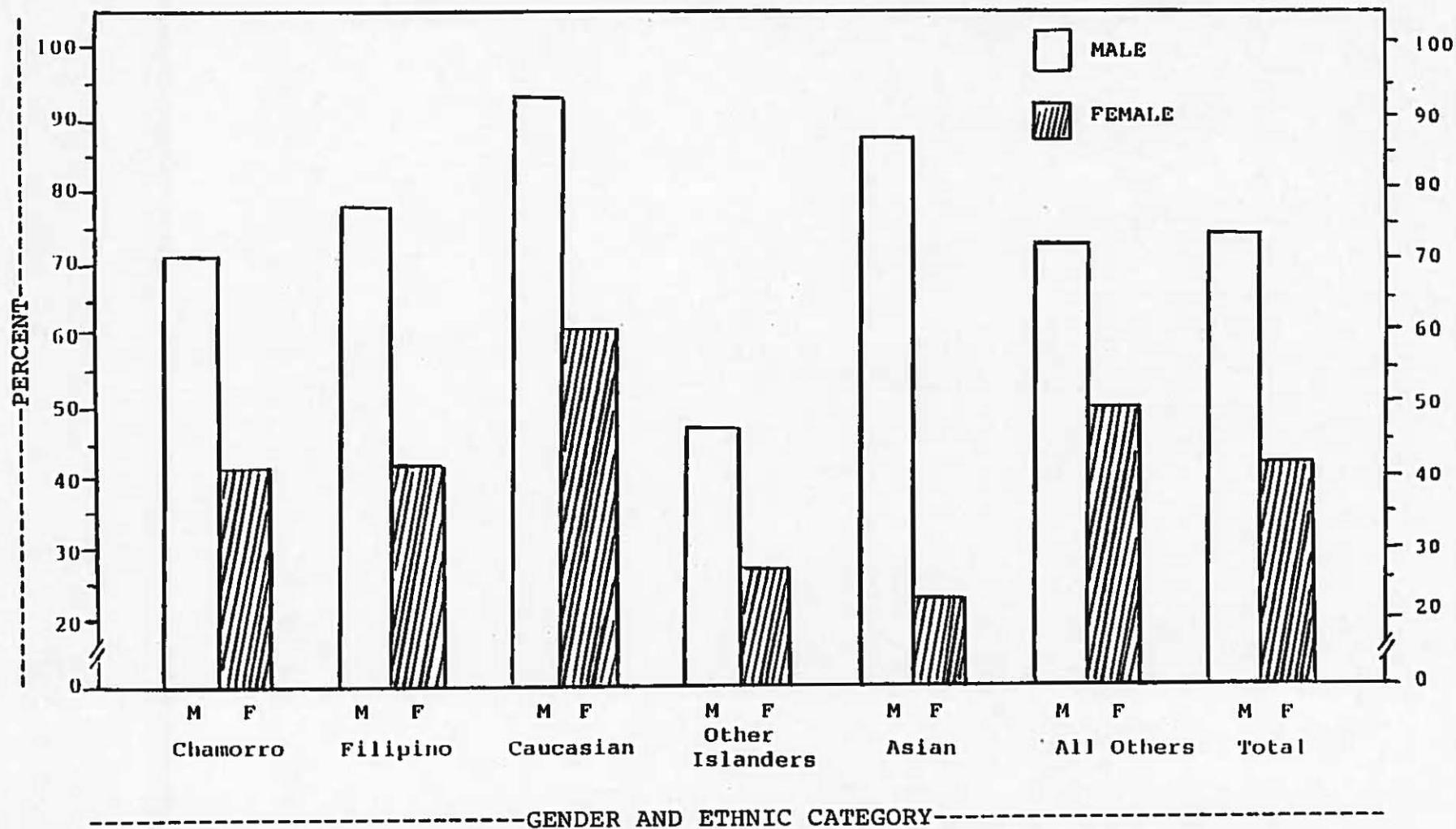
The Asians differed from the Caucasians. Although the males with income ranked second highest (87.5%) the Asian females ranked the lowest of all categories with only 23.1% reporting on annual income.

Seven out of ten Chamorro males reported income, while the percentage figure for the Filipino males was nearly 78. Only 47% of the Other Islander males had an income. It would seem that with a corresponding low percentage of 27 for the females, the Other Islanders did not acknowledge certain financial aid or income for reporting or, perhaps, because a large percentage of their category were young children there was simply a larger dependency ratio among the Other Islanders as compared with the major ethnic groups (Figure 22).

7.6 Age-Gender

Except for the 16 to 17 year old males, a larger percentage of males than females in every age category had received

FIGURE 22. Percentage Distribution of Income Recipients by Ethnicity and Gender



income (Figure 23, Table 35). The difference in categorical percentage became greater as age increased with the exception being those age 65 or older. The greatest difference was found in the 55 to 64 age bracket. In this age group 88.00% of the males had reported income while the figure was only 25.35% for the women. This was a difference of 62.60%. These findings would tend to support the notion that employment opportunities for younger adults, although not necessarily equal, are more similar than in the past.

7.7 Median Income

Regardless of the age category, the males were found to have had the higher average annual income. Those ages 40 to 54 for both the males and the females had the highest averages. However, in this age bracket the males exceeded the females by \$5,247 which was more than 52% income earned.

The data presented in Table 35 show the existence of a real income differential between males and females. A smaller percentage of females than males in most all age categories had an income, and those with income received (on the average) considerably less than their male cohorts (Figure 24).

7.8 Non-income Recipients and Household Size

This part of the income section of this report concerns information relative to distribution of the adults studied who apparently did not have an income. This information is compared among individuals of various sized households.

Upon reviewing Table 37 and Figure 25 it is clear that as the size of the household increased from 1 to 15 persons, the

FIGURE 23. Percentage Distribution of Income Recipients by Age and Gender

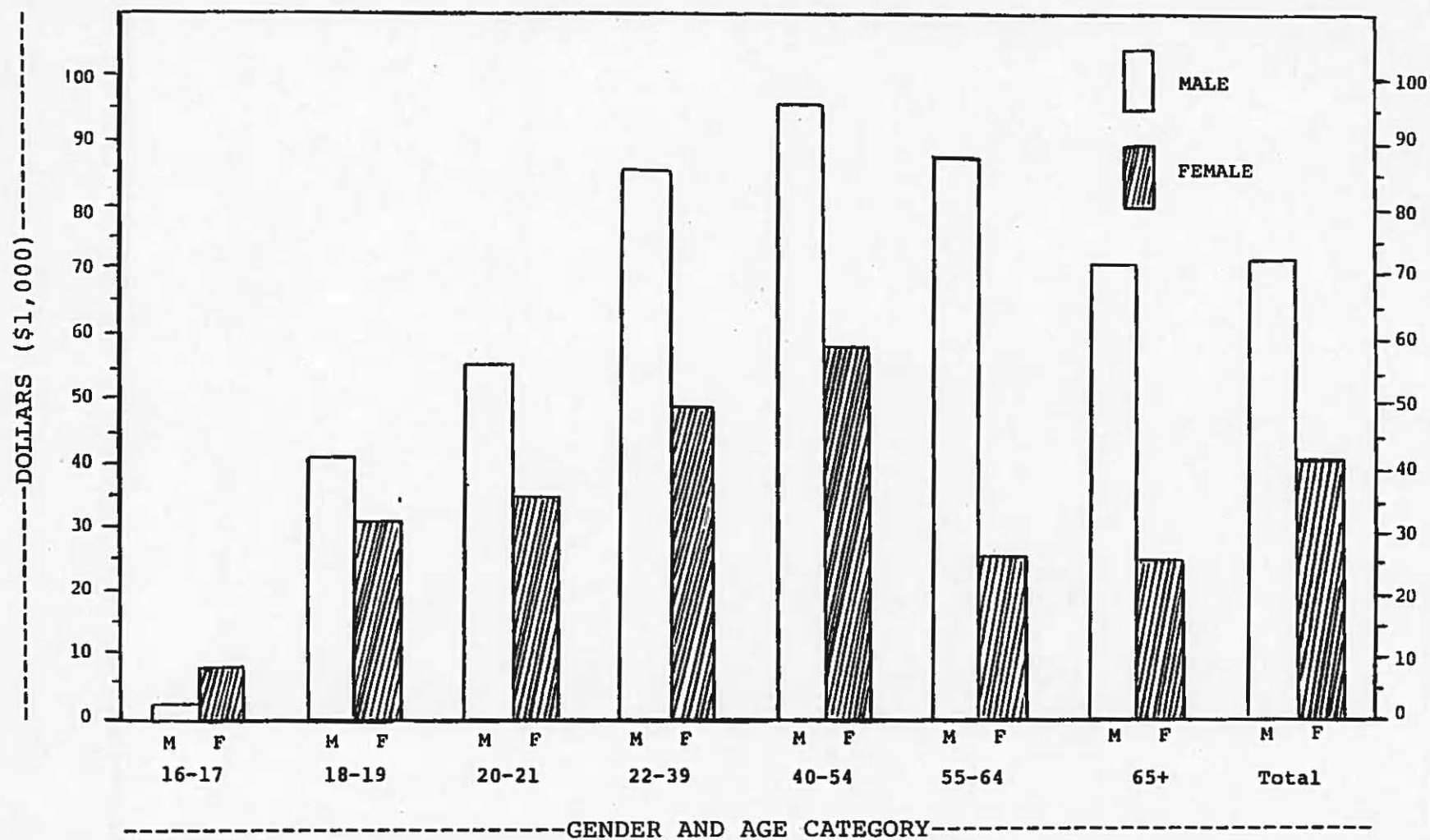
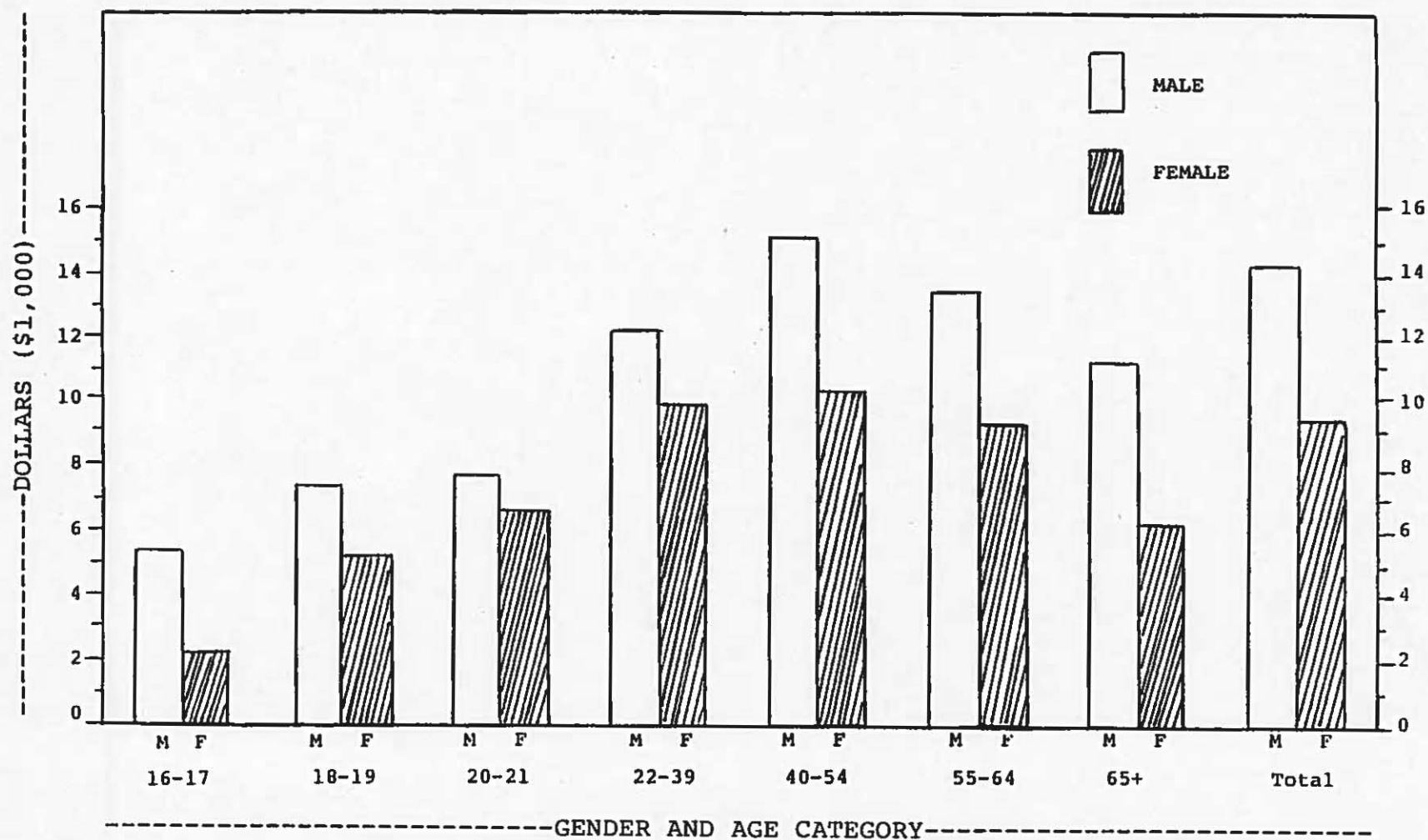


FIGURE 24. Median Income Distribution by Age and Gender



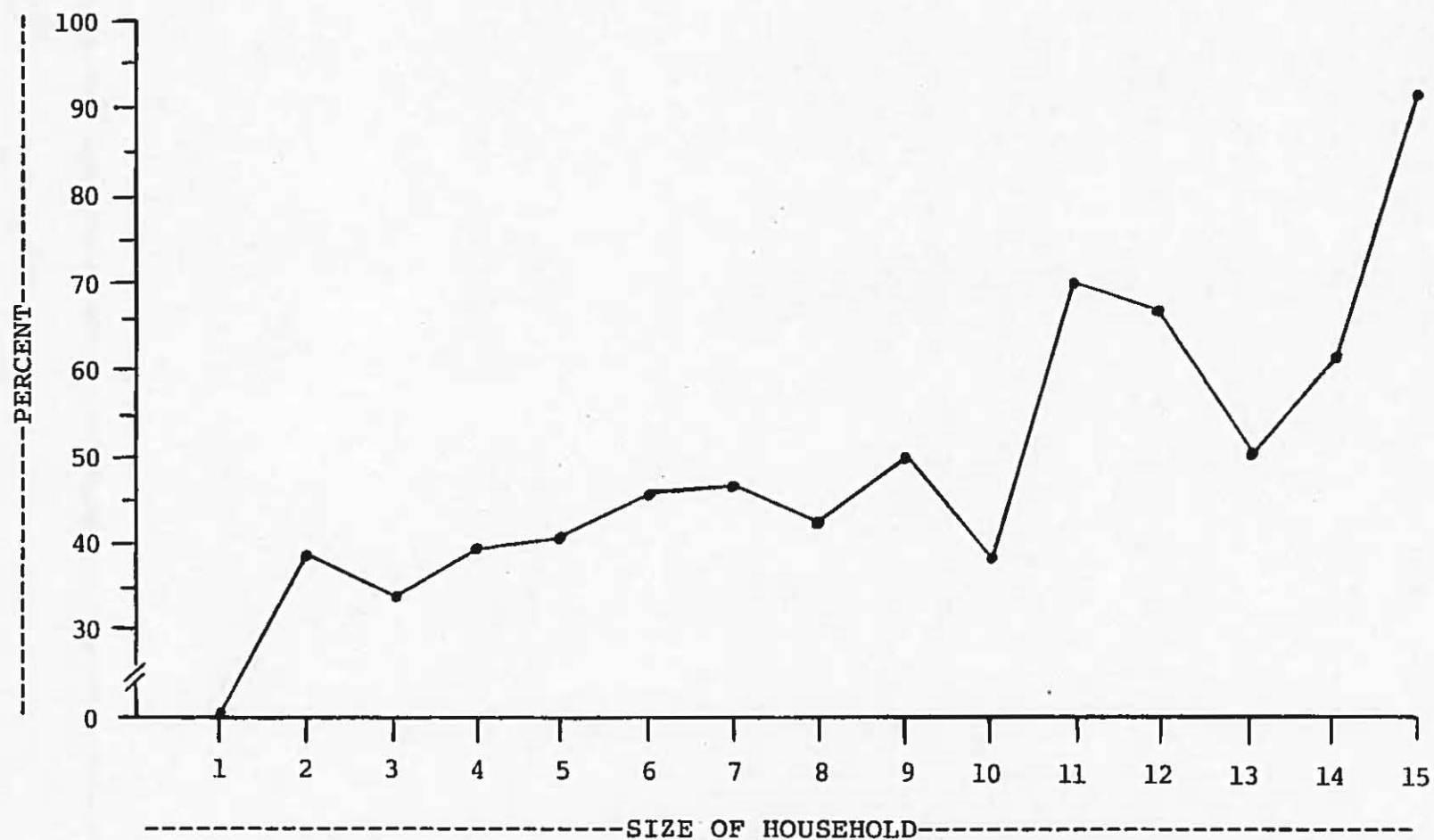
percentage of individuals in those households who were ages 16 or older and did not have an income increased. More specifically (as expected), none of the 12 individuals living in the single occupied household were without income. However, the two largest households with 15 members each had a total of 15 individuals ages 16 or above. Out of these 15 a total of 14 or

TABLE 37. Analysis of Non-income Adults by Household Size

Household Size	Number of Households	Total Count (Persons)	No Income f	Without Income %
1	12	12	-	-
2	53	102	39	38.2
3	60	138	47	34.1
4	79	211	84	39.8
5	66	196	82	41.8
6	43	155	70	45.2
7	38	143	65	45.5
8	22	111	47	42.3
9	9	50	25	50.0
10	9	49	19	38.8
11	4	20	14	70.0
12	1	3	2	66.7
13	1	2	1	50.0
14	1	8	5	62.5
15	2	15	14	93.3
TOTAL	400	1,215	514	42.3*

*Percent of total count without income

FIGURE 25. Percentage of Non-Income Adults by Household Size



93.3% were reported as not having received any income during the prior year.

Out of the 1,215 persons ages 16 or older in this study, 514 (42.3%) did not have an income. It may be of interest to note that all the households ranging in size from 1 to 5 had percentages of non-income recipients below the all-island average, while all other larger households (except those with 10 members) had larger than average percentages of individuals without incomes.

No doubt the reason or reasons for such linear differences are complex. No obvious explanation can be given for the differences noted without further research of the literature or interviews by appropriate professionals in such agencies as the Department of Commerce, the Department of Public Health and Social Services or Guam Health Planning and Development Agency.

7.9 Household Size

An attempt was made to derive an estimate of household income for each of the different sized households. This was done by first determining the number of individuals age 16 or older in each of the various sized households. Then the median income per person in each of the household size categories was calculated. Finally, the average household income was arrived at by multiplying the median individual income by the number of individual income recipients per household size and dividing the product by the number of households in the particular household size category. For example, using the two-person household (Table 38), the median household income figures were

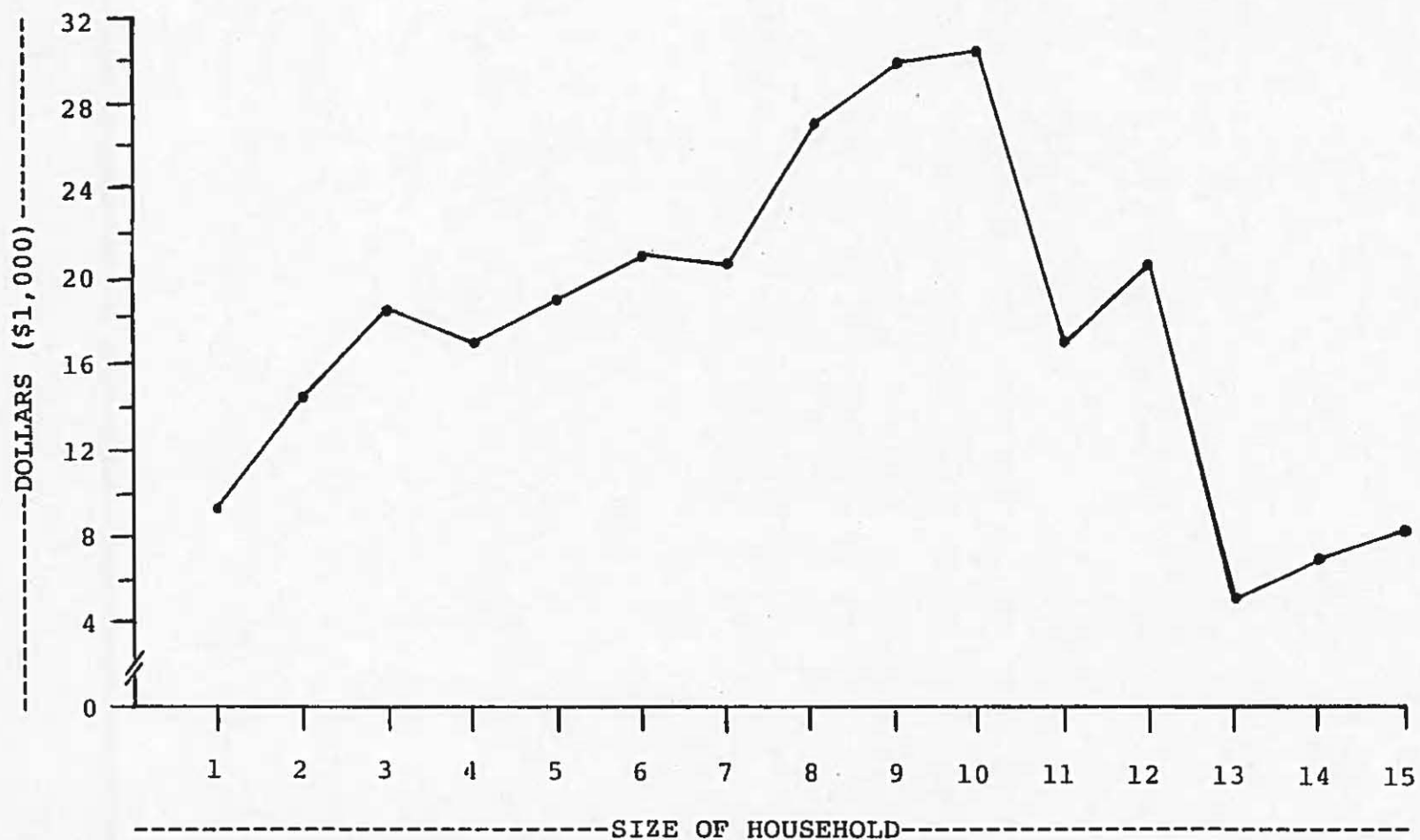
determined as follows: $\text{Hhs } 2 \$ = \frac{(63) (\$12,574)}{(53)} = \$14,946$

As may be observed upon inspecting Table 38 and Figure 26 in greater detail, there was a general increase in household income as the household size increased. This trend continued from the single member households to those with 10 members.

TABLE 38. Analysis of Median Income by Household Size

Household Size	Number of Households	With \$ f	Individual \$	Household \$
1	12	12	\$ 8,931	\$ 8,931
2	53	63	12,574	14,946
3	60	91	11,955	18,132
4	79	127	10,332	16,610
5	66	114	10,947	18,908
6	43	85	11,051	21,845
7	38	78	10,556	21,668
8	22	64	9,383	27,296
9	9	25	10,800	30,000
10	9	30	9,244	30,813
11	4	6	11,130	16,695
12	1	1	21,366	21,366
13	1	1	5,416	5,416
14	1	3	2,250	6,750
15	<u>2</u>	<u>1</u>	<u>16,081</u>	<u>8,041</u>
TOTAL	400	701	\$162,016	\$267,417
Median			\$ 10,727	\$ 17,827

FIGURE 26. Household income by household size



For the largest households with 11 or more members, the average annual household income levels dropped to the lowest figures for households of any size. Part of this difference may have been due to the small number of households involved. However, even if all households with more than 10 members were combined into one group a lower income level would still remain for the largest member households. No logical explanation, however, seems to exist to explain why a marked drop occurred in the average household income for those with more than 10 members.

7.10 Poverty and EFNEP Level Income

Shown in Table 39 are 1984 poverty guideline figures for the states of Alaska and Hawaii. It was assumed that the figures for Guam would be at least as great, if not higher. In addition, the Guam Expanded Food and Nutrition Education Program (EFNEP) income guideline is also presented. As may be noted, the median household income figures for this study were, as expected, above the poverty income lines established for the states of Hawaii and Alaska for households ranging from one to 10 members. For those households with 11 or more members, however, the median household income fell below the poverty guidelines. This would suggest that over 50 percent of the Guam households with 11 or more members have incomes below the poverty line.

Upon comparing the median household income information in Table 38 with the Guam EFNEP qualification guidelines in Table 39, it may be noted that household median income averages for all household sizes fell below EFNEP guideline figures, except

TABLE 39. 1984 Poverty Income and EFNEP Guidelines

Size of Household	Poverty Guidelines		
	Alaska	Hawaii	EFNEP
1	\$ 6,240	\$ 5,730	\$ 9,970
2	8,410	7,730	13,250
3	10,580	9,730	16,520
4	12,750	11,730	19,800
5	14,920	13,730	23,070
6	17,090	15,730	26,340
7	19,260	17,730	29,620
8	21,430	19,730	32,890
9	23,600	21,730	36,160
10	25,770	23,730	39,430
11	27,940	25,730	42,700
12	30,110	27,730	45,970
13	32,280	29,730	49,240
14	34,450	31,730	52,510
15	36,620	33,730	55,780

for those households with two and three members. As noted earlier, two- or three-member households represented 28% of the 400 households sampled in this study. Based on these data, therefore, it would appear that more than 36% of all Guam households would qualify for inclusion in the federally sponsored Expanded Food and Nutrition Education Program. Further analysis of the findings from this study would pinpoint the exact proportion of the island population which would qualify for the various federal help programs.

SECTION EIGHT

SUMMARY OF FINDINGS

8.1 Residential Distribution

The 1,928 individuals studied were members of the 400 households that were selected to represent the entire civilian population of Guam. Using the 1980 Guam Census data as a basis, the GHPDA/CDI health project team defined the total population to be 84,979--residing in a total 23,549 households. Geographically, they were residing in the three major regions as follows: 50% in the North, 30% in the Central, and the remaining 20% in the South.

8.2 Household Size and Composition

The average number of persons per household was in the upper four range which was very similar to the number found in other recent surveys. The number of individuals residing in each household varied from one to as many as fifteen. The largest percentages, however, were in the three to five household members range. While the average size of households varied moderately on a village-by-village basis, the difference was slight with a trend toward larger households in the South when studied on a geographical region basis. The differences were believed to be more closely related to ethnicity than to the rural-urban factor.

The ethnic origin tended to correspond with household size. Those who were native to the island (Chamorros) and

those who had migrated the shortest distance (Other Islanders) had the largest households. Consistent with this hypothesis was the inverse relationship noted between average household size and the distance the various ethnic categories had migrated in order to reside on Guam.

8.3 Population Structure

On the average, the people of Guam are young. The median age of slightly over 22 in this study was equal to the average age found by the Federal Census enumerators several years earlier. Fourteen percent were 55 years or older. The sex-ratio (S-R) of 104.5 in this study tended to affirm the younger-population notion. This figure, as expected, was somewhat lower than the 109.2 S-R on the island in 1980 when the total population (including civilian and military persons) were enumerated. The disproportionate number of males in the Armed Forces clearly accounted for the difference in the two ratios.

Those of Chamorro ancestry not only comprised the largest ethnic category in the study but also represented a majority of the total 1,928 individuals. Filipinos made up the next largest category. Nearly nine out of every ten individuals in this health survey identified themselves as being either Chamorro or Filipino. None of the remaining major groupings or subpopulations made up more than 3.5% of the sample. The sex-ratio (S-R) of the various ethnic groups was found to support another migration hypothesis which suggests that males tend to be more mobile than females. In this study the sex-ratio ranged from 99.0 for the Chamorros (which suggests males

leave the island) to a high of 126.7 for the Caucasians, who had migrated the greatest distance.

8.4 Marriage

While the Federal Census reports marital status for all persons 15 years or older, the GHPDA/CDI survey planning team designated age 16 as the youngest age category to study. Only 2.0% of those who were married fell in the 16 to 21 age bracket. Approximately 58.0% of the 1,253 individuals age 16 and older were married. Of the 34.1% who had never married, 60.4% were under age 22. Over 86.0% of the elderly age 55 to 64 were married, while two-thirds of the oldest senior citizens (who were at least 65) were married, also. Thirty percent of this category were widowed.

8.5 Education

The number of years of school completed varied depending on one's age and geographical location of residence. Those in their early thirties had achieved an education level equivalent to approximately one year of college. It appeared that those who were younger had not had sufficient years to conclude their formal education, while the older persons probably did not have higher education opportunities. The median of 10.8 years of education was for all those age 16 and older.

A definite trend or direction was found in the average education level of the subjects and the geographical region in which they lived. The percentage of high school graduates and the percentage of those who had gone on to college increased when comparing the regions from South to North.

8.6 Financial Status

The final characteristic studied focused on the economic level of the subjects. It was believed to be an important factor related to one's level of health, also. There were 701 or 57.7% of the 1,215 individuals age 16 or older who had had income during the year immediately preceding the survey. Their median annual gross income was \$10,727.

The 40 to 54 age category had the highest proportion (72.0%) of income recipients. This category of individuals also enjoyed the most income. The average yearly income earned was \$12,780.

As expected, by far more males than females had incomes. The amount of income was also greater. Both relationships prevailed throughout the age range. Generally, males received 57% more income than their counterparts. This was equivalent to \$5,249 on a 12-month basis.

Depending on one's ethnic identity, his chances of having an income (as well as the amount of that income) varied. Since ethnicity correlated with distance migrated, those who moved the greatest distance to the island tended to likewise have the higher incomes. This relationship held true only for males.

As household size increased the percentage of individuals in the household age 16 or older who were without income also increased. Total income per household, however, was found to increase as size of households increased from 1 to 10. The reverse trend tended to exist for those with 11 or more living in a single household.

While the median household income levels were above the projected poverty guidelines for the island, they were well within the guidelines of the federally sponsored Expanded Food and Nutrition Education Program. This would suggest that more than half the island population is eligible for this particular program. A more detailed analysis of the data collected in this islandwide survey would show more exact percentages of persons eligible for the various social services and assistance programs.

APPENDICES

APPENDIX A
DEMOGRAPHIC TERMS, DEFINITIONS
AND EXPLANATIONS

DEMOGRAPHIC TERMS, DEFINITIONS AND EXPLANATIONS

The term gender and sex are used interchangeably throughout the report and refer to male and female.

Other Islanders refers to those originating from the islands, exclusive of Saipan, formerly known by their political identity as the Trust Territory of the Pacific Islands.

f is used in tables to refer to the frequency or count of individuals, etc.

% is used in the tables and text and, of course, refers to percent. Percentage totals may not equal 100.00 due to normal mathematical rounding error.

Education means number of years of formal schooling completed. Highest grade completed.

Adults occasionally is used and refers to those age 16 and older. The characteristics of income, education, and marital status are analyzed for individuals of this age category. This differs from the Federal Census which includes those age 15 and older for certain characteristics and age 16 and over for others.

Ethnicity is based on the interviewee's perception of himself and each individual member of the household. This differs from the Federal Census where all members of a household are designated the same ethnicity as the head of the household.

Age refers to a person's age at his last birthday.

Income includes regular earnings for work and/or all other sources. The income question was dependent on one's memory and not records. Therefore, an under-reporting could be expected especially in those cases involving a variety of types and sources.

Marital Status Although civil/religious marriages and common-law marriages are treated separately in the tables, on occasion "married" is used in the text and includes both forms.

Median figures are generally reported since as a statistic they are not affected by extreme values in a distribution as are mean figures.

TABLE 40. Other Combination Category--Household Ethnicity*

Household Size	f	Ethnic Composition
2	1	1-Chamorro/ 1-African
	1	1-Chamorro/ 1-Chinese
	1	1-Chamorro/ 1-Filipino
	1	1-Filipino/ 1-Japanese
	3	1-Caucasian/ 1-Chamorro
3	1	2-Chamorro/ 1-Filipino
	1	1-Chamorro/ 2-Filipino
	1	1-Chamorro/ 1-Korean/ 1-(Chamorro/Korean)
	1	2-Chamorro/ 1-Saipanese
	1	2-Caucasian/ 1-Chamorro
	4	1-Caucasian/ 2-Chamorro
	1	1-Caucasian/ 1-Filipino/ 1-(Caucasian/Filipino)
	1	1-Caucasian/ 1-Iranian/ 1-(Caucasian/Iranian)
	1	2-Caucasian/ 1-Korean
	1	1-Caucasian/ 1-Mexican/ 1-(Caucasian/Mexican)
	1	1-Caucasian/ 1-Palauan/ 1-(Caucasian/Palauan)
	1	2-Caucasian/ 1-Yapese
	1	2-Black/ 1-Vietnamese
	1	1-Japanese/ 2-Palauan
4	1	1-Chamorro/ 3-(Chamorro/Filipino)
	4	3-Chamorro/ 1-Filipino
	2	1-Chamorro/ 3-Filipino
	1	1-Chamorro/ 2-Filipino/ 1(Chamorro/Filipino)
	1	2-Chamorro/ 2-(Yapese/Hawaiian)
	3	1-Caucasian/ 1-Chamorro/ 2-(Caucasian/Chamorro)
	1	2-Caucasian/ 1-Chamorro/ 1-Filipino
	1	1-Caucasian/ 1-Chamorro/ 1-(Chamorro/French)
	1	2-Black/ 2-Chamorro
	1	1-Chinese/ 1-Japanese/ 2-(Chinese/Japanese)
5	1	1-Chamorro/ 4-(Chamorro/Canadian)
	4	4-Chamorro/ 1-Filipino
	1	1-Chamorro/ 1-Filipino/ 3-(Chamorro/Filipino)
	2	4-Chamorro/ 1-Japanese
	1	4-Chamorro/ 1-Marshalese
	1	1-Filipino/ 1-French/ 1-(Caucasian/Hawaiian/ Chinese)/ 2-(Caucasian/Filipino)
	1	5-(Filipino/Japanese)
	1	1-Caucasian/ 4-Chamorro
	1	1-Caucasian/ 1-Chamorro/ 3-(Chamorro/Caucasian)
	1	1-Caucasian/ 1-Chamorro/ 2-(Caucasian/Filipino)/ 1-(Caucasian/Chamorro)

TABLE 40. Other Combination Category--Household Ethnicity*
(Continued)

Household Size	f	Ethnic Composition
6	2	5-Chamorro/ 1-Filipino
	1	2-Chamorro/ 4-Filipino
	1	5-Chamorro/ 1-German
	1	1-Chamorro/ 1-Japanese/ 4-(Chamorro/Japanese)
	1	5-Chamorro/ 1-Rotanese
	1	2-Filipino/ 2-German/ 2-(German/Filipino)
	1	5-Caucasian/ 1-Chamorro
	2	1-Caucasian/ 5-Chamorro
	1	2-Caucasian/ 1-Chamorro/ 3-Filipino
	1	5-Saipanese/ 1-Trukese
7	2	6-Chamorro/ 1-Filipino
	3	1-Chamorro/ 1-Filipino/ 5-(Chamorro/Filipino)
	1	6-Chamorro/ 1-Hawaiian
	1	1-Chamorro/ 1-Japanese/ 5-(Chamorro/Japanese)
	1	1-Chamorro/ 6-Saipanese
	1	6-Chamorro/ 1-(?)
	2	1-Caucasian/ 6-Chamorro
8	1	7-Chamorro/ 1-Filipino
	2	1-Chamorro/ 7-Filipino
	1	1-Chamorro/ 1-Samoan/ 6-(Chamorro/Samoan)
	1	7-Chamorro/ 1-Trukese
9	1	8-Chamorro/ 1-(Chamorro/Japanese)
	1	6-Chamorro/ 3-Saipanese
10	1	9-Chamorro/ 1-Filipino
	1	9-Chamorro/ 1-Chinese
	1	6-Chamorro/ 4-Trukese
11	1	10-Filipino/ 1-Trust Territory
15	1	14-Chamorro/ 1-Filipino
	1	13-Chamorro/ 2-(Japanese/Hawaiian)

*Addendum to Table 6, Page 23.

APPENDIX B
SAMPLE AND METHODOLOGY

DETERMINING SAMPLE SIZE

Using a Survey to Collect Data
Using Printed Instruments
Information-Collecting Techniques
Guidelines to Determine Survey Use.
Designing the Items
Planning for Item Construction
Item Sequencing
Designing Response Modes.
Modes of Response.
Establishing Appropriate Scales
Coding Survey Items.
Forced-Response Codes
Open-Response Codes
Electronic Data Processing
Conducting the Survey
Sampling Considerations
Communicating with the Target Population
Protection of Human Subjects
Inclusionary Language
One Planning Technique
Adapting Other Designs.
Other Effective Methods
Analyzing the Data
Descriptive Techniques
Inferential Statistical Tests
Implications of Analysis
Writing the Research Report
Planning the Report
Parts of the Research Report

Designing Sensible Surveys

Donald C. Orlich

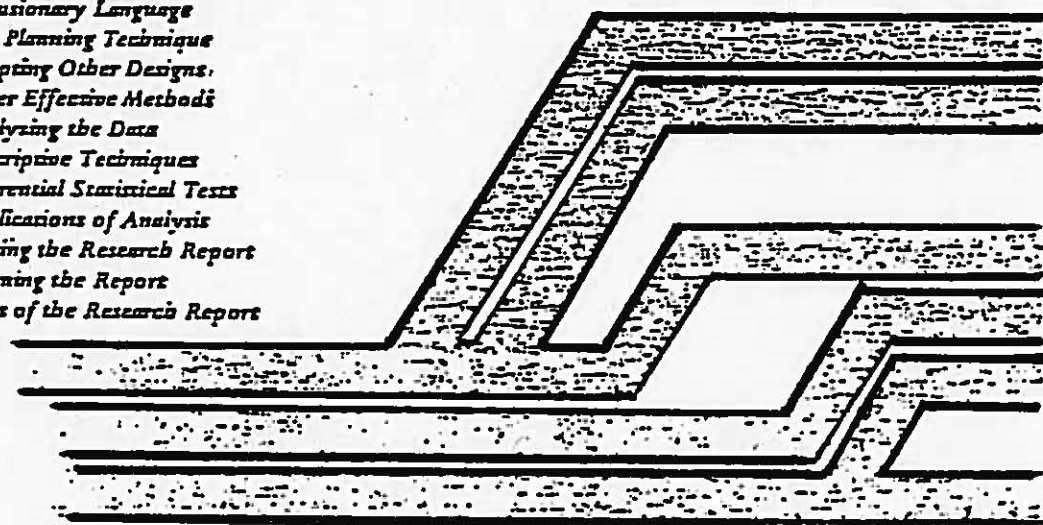


Table 5-1. Estimated Population and Sample Sizes

Population Size	Sample Size	Population Size	Sample Size
100	79	5,000	357
200	132	6,000	361
300	163	8,000	367
400	196	10,000	370
500	217	15,000	375
600	234	20,000	377
800	260	30,000	379
1,000	278	50,000	381
2,000	322	75,000	382
3,000	341	100,000	383

Source: The National Education Association. Table 5-1 is reproduced with the written permission of the National Education Association.

DETERMINING SAMPLE SIZE (continued)

Suggested Sample Sizes for Selected Population Sizes
In a Simple Random Sample

Total Number of Households in the Population*	Number of Households Needed in the Sample	Total Number of Households in the Population	Number of Households Needed in the Sample
100	80	6,000	375
120	92	7,000	378
140	104	8,000	381
160	114	9,000	383
180	124	10,000	385
200	133	More than 10,000	400
220	142		
240	150		
260	158		
280	165		
300	171		
320	178		
340	184		
360	189		
380	195		
400	200		
420	205		
440	210		
460	214		
480	218		
500	222		
600	240		
700	255		
800	267		
900	277		
1,000	286		
1,250	303		
1,500	316		
1,750	326		
2,000	333		
2,500	345		
3,000	353		
3,500	359		
4,000	364		
4,500	367		
5,000	370		

* Make sure that you have added together all the households (rural and town) in the population before you determine the sample size.

TABLE 41. Confidence Limits for Sample Proportions (Total Sample Size = 400)

Sample Proportion %	95 Percent		99 Percent	
	Lower Limit %	Upper Limit %	Lower Limit %	Upper Limit %
5	3.1	7.6	2.6	8.5
10	7.2	13.4	6.5	14.5
15	11.7	18.9	10.7	20.1
20	16.2	24.3	15.1	25.6
30	25.6	34.8	24.3	36.2
40	35.2	45.0	33.7	46.5
50	45.0	55.0	43.5	56.5
60	55.0	64.8	53.5	66.3
70	65.2	74.4	63.8	75.7
80	75.7	83.8	74.4	84.9
85	81.1	88.3	79.9	89.3
90	86.6	92.8	85.5	93.5
95	92.4	96.9	91.5	97.4

NOTE: Interpretation of Table 41. In this study, approximately 50% of the households surveyed were located in the North Region of the island. At the 95% level of confidence, it may be concluded that the true proportion of houses in the North would fall somewhere in the 45% to 55% range.

DETAILED METHODOLOGY

Sample Design

The health study sample geographically represents the entire island to accommodate islandwide ethnicity and rural-urban characteristics. The central and northern regions of the island are more developed, multi-ethnic and contain urban-like villages. The southern part of Guam, by contrast, remains more culturally homogenous with villages "rural" in character. Most medical diagnostic and treatment personnel and facilities are found in central Guam. Thus, the geographically proportionate sample reflects a representative distribution of Guam's rural-urban and ethnic-cultural composition.

To achieve such sample characteristics, a geographically stratified, two-step, proportionate random cluster sample design was adopted for the study. Permanent housing units located throughout the island (excluding those on military installations, other federal housing compounds, temporary alien labor quarters, resort hotels, and those facilities for the institutionalized) are defined as representing the civilian population.

The 1980 Guam Census Report showed 28,225 housing units of which 4,676 (16.5%) were located on land claimed by the federal government. The balance of 23,549 housing units thus represents the population from which the survey sample was drawn.

For enumeration purposes in 1980, the U. S. Department of Commerce, Bureau of the Census, considered the entire island of Guam as 19 minor civil divisions (MCD's). The MCD's (Figure 27) are election "districts" and commonly known as villages. Also in 1980, the Bureau identified as census designated places (CDP's) 34 "more highly settled" areas--including those identified as cities in 1970. The entire MCD of Agana was designated as one CDP. Three other MCD's were subdivided into two or three CDP's which, however, were inclusive of the MCD's. These MCD's were Asan/Maina, Chalan Pago/Ordot, and Mongmong/Toto/Maite. The remaining 15 MCD's all contained one or more CDP's and a residual or less densely settled area (MCD-CDP's). Table 42 shows that eight of the 34 CDP's designated in the 1980 Census were official U. S. military or other federal housing areas and, therefore, were excluded from the total sampling area. The geographical subdivisions remaining for our sample included 26 CDP's and 15 MCD's/CDP's, for a total of 41. The distribution of the agreed upon 400 housing samples is also shown in Table 42.

Although all highways, most streets and many roads are officially named, signs are absent in a number of instances. In addition, certain roads, trails and drives are without uniform identification markers, particularly on unsurveyed tracts of rural land located beyond the more densely populated village CDP's. In view of these conditions, aerial photography housing maps of the island were utilized to determine the specific sample units for the study. A total of 146 section maps were

required to cover all areas of the island that contain residential housing. Each section map contained 36 grid-block squares. The number of houses in a grid-block varied depending on its location. Grid-blocks in the CDP's were, of course, more densely populated than those in the lesser settled areas of the MCD's. The CDP grid-blocks in northern and central MCD's contained as many as 25-30 housing units, while selected residential area grids in the southern part of the island had a few or in several cases only one.

Sample Unit

Representative sampling among MCD's could be achieved by randomly selecting grid-blocks in proportion to the number of households located in each MCD. A more precise representation could be obtained by proportionately sampling grid-blocks within the given MCD subdivision (CDP's and MCD minus CDP's). Therefore, the Sample Unit in this study was a randomly selected grid-block.

The second level or step in the sampling procedure was a purposive designation of an initial contact house (Figure 28) in each randomly selected grid-square or "housing cluster".

In order to ensure a final minimum sample size of 400 surveys, a "back-up" sampling strategy was utilized in the event where all households in the sample unit (map grid) were contacted. In such instances alternate grid-blocks were to be utilized. A systematic pattern of alternating from the immediate left of the original sample grid to the right was set in order to maintain the proper sample representation within and among the MCD's.

The random selection of 400 map block-grids pinpointed starting places for systematic sampling of one-in-fifty-nine or 1.7 percent of the total study population of 23,549 households.

TABLE 42. Sample Frame: Guam

Geographical Subdivision (MCD/CDP)	1 Population	2 Housing Units	3 Population/ Housing (C1/C2)	4 Housing Sample *
TOTAL	(105,979)	(28,225)	(3.75)	(400)
Agana (MCD/CDP)	896	384	2.30	7
Agana Heights (CDP)	2,970	900	3.30	15
Agana Heights (MCD/CDP)	314	71	4.40	1
Agat (CDP)	2,908	706	4.10	12
Agat (MCD/CDP)	1,091	284	3.80	5
Asan (MCD/CDP)	726	210	3.46	4
Maina (CDP)	891	231	3.86	4
Nimitz Hill Annex (CDP)	417	148	2.80	NS**
Naval Air Station (CPD)	1,650	352	4.69	NS
Barrigada Heights (CDP)	1,127	260	4.30	4
Barrigada (CDP)	3,127	787	3.97	13
Barrigada (MCD?CDP)	1,852	531	3.49	9
Chalan Pago (MCD/CDP)	1,921	472	4.07	8
Ordot (CDP)	1,199	266	4.50	5
Dededo (CDP)	2,524	641	3.90	11
Finegayan Station (CDP)	3,538	874	4.05	NS
Dededo (MCD/CDP)	17,582	4,019	4.40	67
Inarajan (CDP)	918	205	4.48	3
Inarajan Dist.(MCD/CDP)	1,141	250	4.56	4
Mangilao (CDP)	4,029	1,312	3.07	22
Latte Heights (CDP)	1,056	268	3.90	5
Marbo Annex (CDP)	856	253	3.40	NS
Mangilao (MCD/CDP)	899	234	3.80	4
Merizo (CDP)	1,500	356	4.20	6
Merizo (MCD/CDP)	163	42	3.90	1
Mongmong (MCD)	2,058	656	3.10	11
Toto (CDP)	2,358	498	4.70	8
Maite (CDP)	419	201	2.10	3
Agana Station (CDP)	410	135	3.04	NS
Piti (CDP)	737	226	3.30	4
Piti (CDP/CDP)	2,129	277	7.68	5
Santa Rita (CDP)	1,264	291	4.30	5
Santa Rosa (CDP)	860	209	4.10	4
Apra Harbor (CDP)	5,633	1,432	3.90	NS
Santa Rita (MCD/CDP)	1,426	321	4.40	5
Sinajana (CDP)	1,879	464	4.05	8
Sinajana (MCD/CDP)	606	155	3.90	3
Talofofo (CDP)	1,470	291	5.05	5
Talofofo (MCD/CDP)	536	154	3.50	3
Tamuning (CDP)	8,862	3,047	2.90	52

TABLE 42. Continued

Geographical Subdivision (MCD/CDP)	1 Population	2 Housing Units	3 Population/ Housing (C1/C2)	4 Housing Sample *
TOTAL	(105,979)	(28,225)	(3.75)	(400)
Tamuning (MCD/CDP)	4,718	1,741	2.70	29
Umatac (CDP)	487	96	5.07	2
Umatac (MCD/CDP)	245	51	4.80	1
Yigo (CDP)	3,392	964	3.50	16
Marbo Annex (CDP)	184	86	2.10	NS
Andersen AFB (CDP)	4,892	1,396	3.50	NS
Yigo (MCD/CDP)	1,891	452	4.20	8
Yona (CDP)	1,948	394	4.90	7
Yona (MCD/CDP)	2,280	632	3.60	11

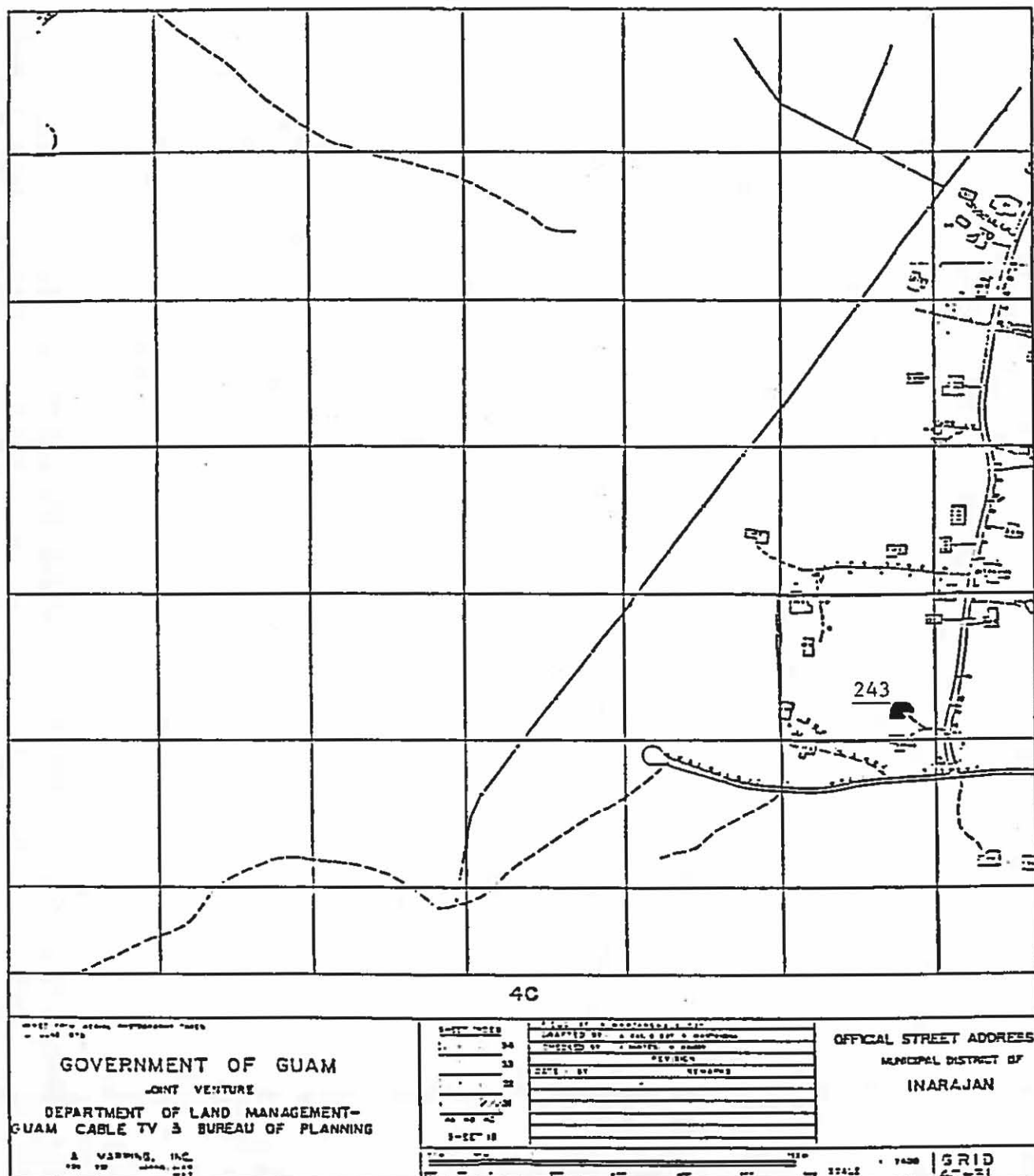
*.0169858 X 23,549 households = 400 sample residences.

**NS = not sampled federal housing such as military bases.

Sources: U.S. Bureau of the Census. US Census of the Population: 1980. Vol.1, Characteristics of the Population, Part 54, Guam, PC80-1-A54 Chapter A, Number of Inhabitants. US Government Printing Office, Washington, DC, 1982.

Guam Department of Commerce, 1982. Preliminary Population and Housing Counts by Subdivision, Guam 1980 Census. Unpublished Data Sheet.

FIGURE 28. Sample Unit: Grid-Block Cluster of Households



GHPDA-UOG INTERAGENCY AGREEMENT W32100001

HEALTH BEHAVIOR PATTERNS SURVEY

Report 01

December 15, 1983

1. Due to the implementation of a new accounting system by the Government of Guam, effective with the beginning of FY'84, a financial account for this project was not established until mid-November 1983. This technically delayed the project start-up date by six weeks. This delay is considered to have been beyond the control of both agencies (GHPDA and UOG).
2. Telephone contact between GHPDA and UOG has been maintained and informal status reports given. Cooperation has been very good.
- 3a. Research Sample Design. Completed. Copy to be presented to GHPDA along with other requirements of Phase II (Second Installment).
- 3b. Drawing of Sample Units. Completed. Copy of islandwide sample distribution to be presented to GHPDA along with other requirements of Phase II (Second Installment).
- 3c. Survey Instrument, initial draft copy attached and ready for submission to GHPDA during first sit down reporting meeting scheduled for Wednesday, December 21, 1983. Recommend that the first joint follow-up work session on survey instrument development be held one week later on Wednesday, December 28, 1983.
4. The project design calls for field interviews to begin in January, 1984. Schedule calls for the interviews to begin during the second weekend of January.

CODING, DATA ENTRY AND ANALYSIS

Computerization of Data
(June 22, 1984)

1. A technical complication developed in the planned procedures to key data in through the UOG Computer Center's Interactive Computing and Control Facility (ICCF). The size of data file members that can be utilized by the ICCF is very limited (5000 record lines). Miscommunication with the Computer Center led CDI staff to plan for only two (2) data file members that would contain the entire data set. However, because the data set is extremely large (approximately 36,632 record lines), the data files that had been keyed in were already too large. This required creation of an additional service of programming operations to rectify.
2. Working with Rudy Villagomez, Programmer Analyst at the UOG Computer Center, procedures were developed to: (a) divide the large ICCF data files into smaller usable segments; (b) these segments can be resorted as originally planned from the order pattern of keypunching (all household members for each data record line before entering of the next data record line) to the order pattern necessary for data analyses (all data record lines for each person and subsequent persons); (c) the resorted segments are then placed out on DISC storage, which permits the use of a SAS program to read, MERGE (a SAS Proc), and output all segments as a simple SAS Data set on a permanent computer TAPE file.
3. Data analyses will be processed using SAS software programs reading (input) the data from this tape.

HEALTH STATUS OF THE POPULATION OF GUAM SURVEY
November 8, 1984

Interviewer's Narrative Report and Coder's Comments:

<u>SUBJECT NO.</u>	<u>COMMENT/SPECIFY</u>
17801	Had to retire because of his heart disease (originally had 365 days at home in bed last 12 months); Q45 covered by military and medicare (doesn't use the medicare), coded 12-Military.
38102	Subject is diabetic and so she eats once an hour (about 13 "snacks" per day). Figured: 24 hours/day - 8 hours sleep 16 hours - 3 hours/3 meals 13 Coded Q25 as 8 (Maximum number for 1 column).
17302	Covered by BC/BS, FHP and Metropolitan. Coded 06 BC/BS for Q45a.
17304	Same as the above.
374 (all)	Household of six with #1 category income, no public assistance, and some with BC/BS insurance. The head of the household (husband) just died and apparently was the family's wage earner.
38910/12	Q9. Both subjects while they were in to see doctor about their colds, the doctor gave them their "baby shots" (measles, mumps, rubella, etc.).
37402/05	Q8 shows HMSA insurance, Q45 shows no insurance. At the time she had the baby in Q8, she was living and working in Hawaii and was covered by HMSA. Currently lives on Guam, no insurance.
37003/06 and 37005/06	Q20, uses FHP but Q45, no insurance. Q8 and Q12, one doctor delivered, another doctor for prenatal visits. Q14 has FHP insurance but went to Dr. Labalan.

SUBJECT NO.COMMENTS/SPECIFY

	Verifier (Mary Vacher) asked interviewer if she knew more about the above or why. Interviewer remembered that those were the answers and couldn't add any more.
25701/03	Q2d/e/f. Coded 9's because these two people never went to school.
39002	Q2d/e. Coded 9's because he went to Brodie Memorial and they "don't have grades." He is not attending at the present.
	Subject was referred to as a "slow learner" and "disabled." He went to Brodie Memorial. He puts in 8 hours a day doing housework. (Interviewer has not coded him in Q7. Subject looked retarded to the interviewer. Interviewer also got the impression subject is not allowed to drive or to learn to drive. Subject doesn't drive.)
39001/01/03/04	FHP and Medicaid (coded 01-FHP in Q45)
31302/03/04	Q48c. Coded as "9" because all part of a family business. The joint family income is coded "8" with person #01 the father.
39203	Q2g. Suggested "mongolian" be added. This is the real origin of the Chamorro people.

HEALTH STATUS OF THE POPULATION OF GUAM
RUN LIST

<u>SUBJECT NO.</u>	<u>RECORD CODE</u>	<u>COMMENT/SPECIFY</u>
<u>Q2. Relationship to head of the household:</u>		
39904	25-Other	Respondent gave S39904 as his son-in-law and single. (When asked about it, #04 is single and like a son-in-law).
<u>Q2d. Ref. 66 years and older--Marital Status:</u>		
40001	12-High School	Graduated from high school and had 4 years as apprentice.
<u>Q2f. Place in which attended highest grade they finish:</u>		
05902	29-Other	Samoa
06702	29-Other	Germany
06703	29-Other	Germany
28301	29-Other	Africa
39502	29-Other	Sweden
<u>Q2g. Ethnic group:</u>		
05106	10-T.T.	Rotanese
20302	10-T.T.	Trukese
20303	10-T.T.	Trukese
20304	10-T.T.	Trukese
20305	10-T.T.	Trukese
17401	10-T.T.	Palauan
17402	10-T.T.	Palauan
17403	10-T.T.	Palauan
28301	12-Other/Single	African
37502	12-Other/Single	Mexican
37503	14-Other/Comb.	Mexican/Chamorro
06702	12-Other/Single	German
06703	12- "	German
06704	14-Other/Comb.	German/Black
06706	14- "	German/Filipino/Black
(cont.)		

<u>SUBJECT NO.</u>	<u>RECORD CODE</u>	<u>COMMENT/SPECIFY</u>
05902		
05903	14-Other/Comb.	Chamorro/Samoan
05904	14- "	Chamorro/Samoan
05905	14- "	Chamorro/Samoan
05906	14- "	Chamorro/Samoan
05907	14- "	Chamorro/Samoan
05908	14- "	Chamorro/Samoan
17803	14-Other/Comb.	Caucasian/Palauan
38701	14-Other/Comb.	Japanese/Chamorro
39303	14-Other/Comb.	Caucasian/Chamorro
39304	14- "	Caucasian/Chamorro
17503	14-Other/Comb.	Caucasian/Chamorro
17504	14- "	Caucasian/Chamorro
17303	14-Other/Comb.	Yapese/Hawaiian
17304	14- "	Yapese/Hawaiian/Chamorro
19103	14-Other/Comb.	Chamorro/Japanese
19104	14- "	Chamorro/Japanese
19105	14- "	Chamorro/Japanese
19106	14- "	Chamorro/Japanese
19107	14- "	Chamorro/Japanese
39503	14-Other/Comb.	Chamorro/Caucasian
39504	14- "	Chamorro/Caucasian
38914	14-Other/Comb.	Chamorro/Japanese/Hawaiian
38915	14- "	Chamorro/Japanese/Hawaiian
19503	14-Other/Comb.	Caucasian/Filipino
18003	14-Other/Comb.	Chamorro/Caucasian
18004	14- "	Chamorro/Caucasian
18005	14- "	Chamorro/Caucasian
06002	14-Other/Comb.	Chamorro/Canadian
06003	14- "	Chamorro/Canadian
06004	14- "	Chamorro/Canadian
06005	14- "	Chamorro/Canadian
08803	14-Other/Comb.	Filipino/Caucasian
08804	14- "	Filipino/Caucasian
08805	14- "	Filipino/Caucasian
27701	14-Other/Comb.	Filipino/Japanese
(cont.)		

<u>SUBJECT NO.</u>	<u>RECORD CODE</u>	<u>COMMENT/SPECIFY</u>
26403	14-Other/Comb.	Filipino/Italian
26404	14- "	Chamorro/French

Q4b. In bed at home during the last 2 weeks:

36901	000-Other	Tooth extraction kept S36901 in bed.
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Q7a. Health conditions during the past 12 months:

26203	1700-General	Injury (not specified).
26003	0000-Other	Jaw defect.
19103	0000-Other	Ingrown toenails.
11306	1800-General	Crippled since disabilities/impairment birth, uses walker.
21303	1903-Birth Defect	Clubfoot.
13005	0000-Other	Hearing problem--since birth.
40003	1705-Cuts	Abscess on gum where he had cut it.
39202	1100-General	Bone stuck in throat.
39101	0000-Other	Dizziness (blacked out once), not related to drugs or alcohol.
29004	0800-General	Shaken up (car accident).
13004	1800-General	School suggest got hearing problem.

Q8a. Hospital stays during the past 12 months (place of hospital):

31702	04-Off island	Korea
21102	04-Off island	Philippines
37402	04-Off island	Hawaii
37405	04-Off island	Hawaii

Q8c. Illness or injury during hospital stays during the past 12 months:

26203	1700-General	Injury (not specified).
28702	0301-Diabetes	"Coded".
	(Not Coded)	(0202-hypertension).
	(Not Coded)	(1802-blind/diabetic).

<u>SUBJECT NO.</u>	<u>RECORD CODE</u>	<u>COMMENT/SPECIFY</u>
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Q8d. Doctor's name during the past 12 months of hospitalization:

13601	1055	Dr. Guzman
	(Not Coded)	(Dr. Geling)
21102	9999-Off island	Dr. Ventura (gynecologist)
37402	9999- "	Dr. Nakagawa
37405	9999- "	Dr. Nakagawa
31702	0000-Off island	Doctor from Korea

Q8e. Modes of hospitalization payments during the past 12 months:

19407	17-Other	M.I.U. (interviewer feels it's Yap Government coverage).
19411	17- "	M.I.U. (same as above).
17401	13-Commercial	I.N.A. (North American Insurance)
11302	17-Other	Public Health CCS (Crippled Children Services)

Q9b. Conditions for diagnosis and treatment during the past 12 months:

31701	0000-Other	Positive P.P.D. reactor.
19103	0000-Other	Ingrown toenails.
39202	1100-General	Bone stuck in throat.
39101	0000-Other	Dizziness not related to alcohol or drugs.
25004	0800	Shaken up (car accident)

Q12a. Name of doctor for good health doctors visits during the past 12 months:

02703	0600-FHP	Dr. McDonald
02704	0600-FHP	Dr. McDonald
02705	0600-FHP	Dr. McDonald

<u>SUBJECT NO.</u>	<u>RECORD CODE</u>	<u>COMMENT/SPECIFY</u>
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Q9a. Name of doctor during the past 12 months for diagnosis and treatment:

39401/02	1600-Pub.Health	Dr. Parents (Mangilao)
01604	4700-Nav.Hosp.	Dr. Espirito
02002	4700-Nav.Hosp.	Dr. Smith
26002	3700-Other	Dr. Liu (China Acupuncture Clinic)
26003	3700-Other	Same as above
10002	1600-DPHSS	Dr. Torres (Tamuning-Pubic Health)
40002	2000-SDA	Dr. Whitman

Q9c. During the past 12 months for diagnosis and treatment, name of doctor at another location:

39101	0000-No Pref/ No Choice	Dr. Chang (Acupuncture)
02201	1600-DPHSS	Dr. Parent (Mangilao)

Q20a. Name of regular doctor:

39401	1600-DPHSS	Dr. Parents
39402	1600-DPHSS	Dr. Parents

Q20b. Usual place for medical attention:

13903	4700-Nav.Hosp.	Dr. Fry
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Q12c. Reason(s) for good health doctors visits during the past 12 months:

13004	7-Prenatal	Reason for visit; school suggest thought person had hearing problem.
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Q14b. Reason(s) for dentist visits during the past 12 months:

20204	08-Other	Injuries (lost tooth).
20101	08-Other	"Toothache. Only cut nerve surgery," had to do with nerve, not an extraction.
40003	08-Other	Cut gum and had an abscess.

SUBJECT NO.	RECORD CODE	COMMENT/SPECIFY
<u>Q14i. Dental insurance during the past 12 months:</u>		
02802	06-Other	UIU
02803	06- "	UIU
29302	06- "	UIU
29303	06- "	UIU
29304	06- "	UIU
04001	06- "	Prudential
04002	06- "	Prudential
17302	06- "	Metropolitan
05701	06- "	BC (John Hancock)
05702	06- "	BC (John Hancock)
05703	06- "	BC (John Hancock)
16301	06- "	Staywell
31301	06- "	Nambo
21102	06- "	Nambo
00801	06- "	Lincoln
12603	06- "	UIU
07903	06- "	John Hancock
07904	06- "	John Hancock
07905	06- "	John Hancock
01401	06- "	Blue Cross
01402	06- "	Blue Cross
01403	06- "	Blue Cross
01404	06- "	Blue Cross
38501	06- "	UIU
13705	02-GMHP	Subject was covered under 02-GMHP during his visit to the dentist, but <u>presently no dental insurance.</u>

Q15a. Health conditions for off-island treatment:

11306	1800-General	Crippled since birth. Uses walker (Disabilities/ impairments)
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Q15c. Off-island services:

35401	09-Other	Stomach ulcer surgery.
31702	09-Other	
21202	09-Other	Consulted hilog and gynecologist and spent 2 days in hospital to have D&C (uterus cleaned).

<u>SUBJECT NO.</u>	<u>RECORD CODE</u>	<u>COMMENT/SPECIFY</u>
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Q16a. Reasons for not seeing a doctor when needed:

09503	7	Didn't feel illness serious.
09504	4	Didn't feel doctor could do anything.
09505	4	Same as above.

Q20b. Usual place for medical attention:

19411	9999	Subject was only here temporarily and has gone back to Yap. She was only here for medical treatment.
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Q22a. Exercise habits:

06001	20-Other	Snorkeling
06002	20-Other	Snorkeling
40003	20-Other	Tahitian dancing

Q23c. Usual social situations for alcohol consumption habits:

28701	3-Coded (Not Coded)	Fiesta or party. (2-small group of friends or family.
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Q33ix. Health programs:

23902	01-Other(yes)	Drug abuse.
39701	01-Other(yes)	Mind control & helping others.
25302	01-Other(yes)	Problem teenagers (drug control).

Q33a. Place for health programs to be held at:

29405	7-Other	Hospital and school.
07101	5-Worksite	Other choice not coded-#7 Home
17301	7-Other	Home
38601	7-Other	Fire Station

Q35. Sources from whom information is most helpful:

19502 (cont.)	6-Coded (7-Not Coded)	A nurse or medical aide. (A medical doctor).
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<u>SUBJECT NO.</u>	<u>RECORD CODE</u>	<u>COMMENT/SPECIFY</u>
20302	7-Coded (3-Not Coded)	A medical doctor. (A friend who is not a relative).
26802	6-Coded (8-Not Coded)	A nurse or medical aide. (Books, magazines, newspapers, pamphlets, etc.).
39701	7-Coded (8-Not Coded)	A medical doctor. (Books, magazines, newspapers, pamphlets, etc.).
13401	8-Coded	Books, magazines, newspapers, pamphlets, etc.
38502	7-Not Coded 0-No Answer	(A medical doctor). Respondent answered "no" to all the listed sources; she was trained by her parents (who are now dead) and has 16 years of experience taking care of people (young and old) and has also learned from "old folks."
39901	7-Coded (Not Coded)	Doctor. (Common sense).
38902	8-Coded (7-Not Coded)	Books, magazines, newspapers, etc. (A medical doctor).
36102	6-Coded (7-Not Coded)	A nurse or medical aide. (A medical doctor).
24002	7-Coded (8-Not Coded)	A medical doctor. (Books, magazines, newspapers, pamphlets, etc.).
29405	7-Coded (6-Not Coded)	A medical doctor. (A nurse or medical aide. That respondent was merely chosen as spokesman for family of Yapese and chose nurse or medical aide as their source. I (interviewer) believe just for choice. However, they have an uncle who is a doctor and consult with him often for family's medical needs).

Q42. Place (Off-island) before moving to Guam:

17801	23-T.T.	Ponape
19102	29-Other	Panama
05302	29-Other	Canada

<u>SUBJECT NO.</u>	<u>RECORD CODE</u>	<u>COMMENT/SPECIFY</u>
<u>Q44. Place born:</u>		
05902	29-Other	American Samoa
06702	29-Other	Germany
39502	29-Other	Sweden
<u>Q45a. Health insurance plan:</u>		
14801	10-Other	Subject (either GMHP or FHP) respondent didn't know which and that person has permanently left the island.
14801	10-Other	Marmon--Off-island plan.
17801	12-Military	BC/BS, FHP and Metropolitan.
17302	06-BC/BS	Cause of retirement.
17303	06-BC/BS	BC/BS, FHP and Metropolitan.
39001	01-FHP	FHP and Medicaid
39002	01-FHP	FHP and Medicaid
39003	01-FHP	FHP and Medicaid
39004	01-FHP	FHP and Medicaid
39204	12-Military	Military and Travelers Insur.
39101	07-Medicaid	Currently no insurance, but they (household #391) had insurance from FHP. Last used was 9/1982 when son was born.
39102	07-Medicaid	Same as above.
39103	07-Medicaid	Same as above.
39104	07-Medicaid	Same as above.
39105	07-Medicaid	Same as above.
39106	07-Medicaid	Same as above.
39107	07-Medicaid	Same as above.
39108	07-Medicaid	Same as above.
39109	07-Medicaid	Same as above.
39110	07-Medicaid	Same as above.
39111	07-Medicaid	Same as above.
19401	10-Other	M.I.U.
19402	10-Other	M.I.U.
19403	10-Other	M.I.U.
19404	10-Other	M.I.U.
19405	10-Other	M.I.U.
19406	10-Other	M.I.U.
19407	10-Other	M.I.U.
19408	10-Other	M.I.U.
19409	10-Other	M.I.U.
19410	10-Other	M.I.U.
19411	10-Other	M.I.U.
06703		
17401	11-Commercial	INA-North American Insurance
17402	11-Commercial	INA-North American Insurance
17403	11-Commercial	INA-North American Insurance
29301	11-Commercial	UIU-Health Plan Insurance

<u>SUBJECT NO.</u>	<u>RECORD CODE</u>	<u>COMMENT/SPECIFY</u>
29302	11-Commercial	UIU-Health Plan Insurance
29303	11-Commercial	UIU-Health Plan Insurance
29304	11-Commercial	UIU-Health Plan Insurance
29305	11-Commercial	UIU-Health Plan Insurance
23201	09-Medicare	
23202	09-Medicare	

Q47e. Other: Public assistance:

28502	1-Yes	Social Security Disability
04102	1-Yes	W.I.C.
39810	1-Yes	Farmers Home Assistance

Q48a/b/c. Employment status, primary occupation, average number of hours worked per week, and income before taxes:

38503	39999	Respondent's son is in National Guard and gets called in only 6 or 7 weeks. He works about 4 days from 7 a.m. to 5 p.m.
39101	59994	"Disabled" around May 1983. Used to be heavy equipment operator for Government of Guam.

Q49. Who's responsible for maintaining and protecting your good health:

20001	16-Other	Myself and occupation.
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Q50a. Name of doctor for diagnosis and treatment during the last 2 weeks:

03402	2000-SDA	Dr. Newbold
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College of Agriculture and Life Sciences
Community Development Institute

November 9, 1984

SUBJECT: Changes to be made on GHPDA Data Set (Run List)

<u>Subject #</u>	<u>Card</u>	<u>Var Name</u>	<u>Column (s)</u>	<u>From</u>	<u>To</u>	<u>Comment/Specify</u>
31702	31	I8D	21-24	0000	9999	Code (9999) for off- Island
02703	34	I12A	12-15	0600	0000	0600-FHP coded for Dr. McDonald, but Dr. McDonald is not known at FHP Clinic
02704	34	I12A	12-15	0600	0000	
13004	34	I12C	18	7	3	Code (3) for School Physical

APPENDIX C
INTERVIEW SCHEDULE
(QUESTIONNAIRE)

HEALTH SURVEY
VARIABLE DEFINITIONS FOR ANSWERS TO SURVEY

I. TITLE: Demographic variables

- I2A - Ages of all members of household
- I2B - Sex of all individuals of each household
- I2D - Highest grade attended in school
- I2E - Was this grade completed?
- I2F - Country or Island where this grade was finished
- I2G - Ethnic group
- I45 - Any health insurance?
- I45A - Who is insured and which insurance plan?
- I47A - Do you receive welfare (OAA, AB, APTD)?
- I47B - Food stamps?
- I47C - Medicaid?
- I47D - GHURA Housing Assistance/Low income family housing subsidy?
- I47E - Other, specify:_____

II. TITLE: Health Conditions

- I7A1-I7A3 - During the past 12 months (not including the last 2 weeks) has anyone in this household had any of the following health problems? If yes, who, and what are the conditions?
- I3C - During the last 2 weeks, for what condition was the person in the hospital?
- I4B - During the last 2 weeks, what was the primary causal illness or injury that kept the person in bed?
- I5B - During the last 2 weeks, what was the primary causal illness or injury that the person had?
- I8C - During the past 12 months, for what illness or injury was the person hospitalized?

III. TITLE: DRS and sources of care:

- I3F - Name of doctor of the person in the hospital for last 2 weeks
- I4F - Name of doctor of the person in bed at home for sickness for the last 2 weeks
- I5F - Name of the doctor of the person restricted from activities fro the last 2 weeks
- I6A - The name of the doctor who was visited.
- I50A - Which doctor did this person visit? (with regards to diagnosis and treatment over the past 2 weeks)

Health Survey
Variable Definitions for answers to survey
Page 2

III. TITLE: DRS and sources of care (con't)

- I50C - Did the person visit another doctor at another location? (with regards to diagnosis and treatment over the past 2 weeks)
- I8D - Name of the doctor of the person who was in the hospital for the past 12 months
- I9C - Name of any other doctor this person may have visited
- I12A - Who was the doctor visited for immunization, x-rays, or advise?
- I12D - Did the person visit another doctor at another location?

IV. TITLE: Dental visits

- I14A - Who went to see the dentist? Who was the dentist?
- I14D - Did this person visit another dentist at another location?
- I14B1-I14B3 - What were the reasons for the dental visit?
- I14I - By which insurance is this person covered for dental visits?

V. TITLE: Good health doctor visits reasons

- I6C - What was the reason for the visit to a doctor when under good health?
- I12C1-I12C3 - What was the reason for the visits to a doctor with no injury at the time and in good health?

VI. TITLE: Hospital stays

- I3B - How many days during the last 2 weeks was the person in the hospital?
- I8B - How many days during the past 12 months was the person in the hospital?

VII. TITLE: Work days missed

- I4L - During the last 2 weeks, how many days did illness or injury keep the person from going to work for which pay is received?
- I5 - During the last 2 weeks, how many days did illness or injury (with regards to restricted activities) keep the person from going to work for which pay is received? (Record # of days or "99" for N/A)

Health Survey
Variable Definitions for answers to survey
Page 3

VII. TITLE: Work days missed (con't)

- I10B - Of the total # of days in bed at home, how many days did illness or injury (with regards to being in bed at home for the last 12 months) keep the person from going to work for which pay is received? (Record # of days or "99" for N/A)
- I11B - How many days did illness or injury (with regards to restricted activities over the past 12 months) keep the person from going to work for which pay is received? (Record the # of days)

VIII. TITLE: School days missed

- I4M - During the last 2 weeks, how many days did illness or injury (with regards to being in bed at home over the past 2 weeks) keep the person from going to school? (record # of days, or "99" for N/A)
- I5J - During the last 2 weeks, how many days did this illness or injury (with regards to restricted activities over the past 2 weeks) keep the person from going to school? (record # of days or "99" for N/A)
- I10C - Of the total # of days in bed at home over the past 12 months, just mentioned, how many days did illness or injury keep the person from going to school? (record # of days)
- I11C - Of the total # of days of the restricted activities over the past 12 months just mentioned, how many days did illness or injury keep the person from going to school? (record # of days)

IX. TITLE: Individual 12 month income

- I48C - During the past 12 months, approximately what was the person's income before taxes?

X. TITLE: Recognition & retention of condition

- I3D - When did the person first notice or get this condition which required a hospital stay over the past 2 weeks?
- I3E - Does the person still have this condition at this time?
- I4C - When did the person first notice or get this condition which required to be in bed at home over the last 2 weeks?
- I4D - Does the person still have this condition at this time?
- I5C - When did the person first notice or get this condition with regards to restricted activities over the last 2 weeks?
- I5D - Does the person still have this condition at this time?

Health Survey
Variable Definitions for answers to survey
Page 4

XI. TITLE: Hospital payments

- I3L - How was this hospitalization paid for (with regards to the last 2 weeks)?
- I8E - How was this hospitalization paid for (with regards to the past 12 months)?

XII. TITLE: yes/no answers

- I3 - During the last 2 weeks, did any member of this household stay in a hospital because of illness or injury?
- I4 - During the last 2 weeks, did any member of this household stay in bed at home because of illness or injury?
- I4E - Was a doctor consulted, either by visit or phone during the last 2 weeks for the person's condition?
- I5 - During the last 2 weeks did any member of this household cut down or restrict their usual activities for any given length of time because of illness or injury?
- I5E - Was a doctor consulted either by a visit or phone during the last 2 weeks for the person's condition?
- I6 - Not counting the visits to a doctor by the person's mentioned above, during the last 2 weeks did anyone in this household who was in good health and no injury at the time visit a doctor for immunization, x-rays, exams, tests, etc?
- I6D - Did the person get medical advice over the telephone during this same period?
- I50 - During the past 2 weeks, did anyone in this household visit a doctor for the diagnosis and treatment of an illness or injury?
- I7 - During the past 12 months has anyone in this household had any of the following health conditions?
- I8 - During the past 12 months did anyone in this household stay in a hospital because of illness or injury?
- I9 - During the past 12 months did anyone in this household visit a doctor for the diagnosis and treatment of an illness or injury?
- I10 - During the past 12 months, did anyone in this household stay in bed at home because of illness or injury?
- I11 - During the past 12 months, did anyone in this household cut down or restrict their usual activity for any given length of time because of illness or injury?
- I12 - Not counting the visits to a doctor by the person(s) mentioned, during the past 12 months, did anyone in this household who was in good health and with no injury at the time visit a doctor for immunization, x-rays, or advise?

Health Survey
Variable Definitions for answers to survey
Page 5

XII. TITLE: yes/no answers (con't)

- I13 - During the past 12 months, did anyone in this household with a long-time impairment or disability visit a health facility for therapy, habilitation or rehabilitation?
- I14 - During the past 12 months, did anyone in the household visit a dentist for any reason?
- I14H - Is the person covered by dental insurance? (with regards to dental visits over the past 12 months)
- I16 - During the past 12 months was there any time that a household member needed to see a doctor but for some reason did not?
- I19 - During the past 12 months has any member of this household ever decided not to go to a doctor or health facility on Guam because transportation was not readily available?
- I20 - Does any member of this household have a regular doctor?
- I28 - Does any member of this household usually wear a seatbelt when driving or riding as a passenger in a car?
- I29 - Does anyone in this household ever use medication or drugs which affects their mood or helps them relax?
- I30 - In the last 2 weeks, has any member of this household been greatly upset, troubled, or depressed for more than a few days due to problems in the family, divorce, separation, illness, death in the immediate family, preassure associated with work or school, loss of a job, or financial concerns?
- I30B - Was the person unable to do his/her usual work or daily activities because of this problem?
- I21 - Is there any member of this household who regularly smokes tobacco now?
- I21D - Has this person ever been advised by a doctor to stop smoking?
- I22 - Does any member of this household exercise at least 3 times per week?
- I22C - Does this person usually sweat during and/or after exercising?
- I23 - Does any member of this household usually drink alcoholic beverages, such as beer, wine, or mixed drinks?
- I23E - Has a physician ever advised this person that drinking alcohol is injurious to their health?
- I23F - Has this person ever tried to stop drinking alcohol?

House Number: _____

Questionnaire I.D. # _____

Interviewer's Number: _____

Village Area: _____

Date: _____

Coder's Name: _____

A SURVEY TO DETERMINE THE HEALTH STATUS
OF THE POPULATION OF GUAM

ADMINISTERED BY THE
COMMUNITY DEVELOPMENT INSTITUTE
COLLEGE OF AGRICULTURE AND LIFE SCIENCES
COOPERATIVE EXTENSION SERVICES
UNIVERSITY OF GUAM

for

GUAM HEALTH PLANNING AND DEVELOPMENT AGENCY
GOVERNMENT OF GUAM

FUNDED IN PARTS
GHPDA - DESS MONEY

**NARRATIVE REPORT AND
INTERVIEWER'S ASSESSMENT
SHEET**

				(2-4)	
House Code					
Person (5-6)		Card (7-8)		Village (9-10)	
0	0	1	0		
				(11-12)	
Interviewer Code					

(NOTE: To be completed by interviewer after the Interview has been conducted, and all questions are answered. Complete this page in your home or our office.)

Interview Completed during visit number 1 2 3 4

Narrative Report: (Include comments on accuracy of responses, interviewer interference, etc.)

Comments or Problems that you encountered that you feel would be helpful to us.

Concerning the interview on the whole:

1. Satisfactory _____
2. Unsatisfactory (explain) _____
3. Refused (explain) _____
4. Not Available (explain) _____
5. Other (explain) _____

--

Length of Interview _____
(Hours:Minutes)

INTERVIEWER SIGNATURE

DATE

Household Interview Number
(Pre-Assigned)

House
(2-4)

--	--	--

Time Interview Began _____

Person
(5-6)

Card
(7-8)

Village
(9-10)

Card Identification

0	0	1	1		
---	---	---	---	--	--

Village Address _____
(House number and street)

Interviewer (24-25)

--	--

(village)

(26-27)

--	--

Type of Dwelling Place: (See Card Y for code)

Map of House Location

(If more space is needed, use back of sheet)
--

NOTE: Interview must be an adult member of the household.
(Preference: Head of Household or Spouse)

Date:

Month
(28-29)

Day
(30-31)

Year
(32-33)

--	--	--	--	--	--

How many persons have lived in or moved to this household since February 1, 1983?
(Identify individuals who regularly eat and sleep in this household. Do not include individuals off-island attending school, family in military stations off-island).

(34) (35)

--	--

Are any of these temporarily living in this household? Code actual number (col. 23-24).

(36) (37)

--	--

WHAT IS YOUR NAME, PLEASE?

(38) (39)

Name of Respondents (contact persons)

--	--

In case we need to get in touch with you for clarification of your questionnaire, we would like your mailing address and a phone number.

Mailing Address:

Phone Number:

Home:

Work:

Other:

HOUSEHOLD INFORMATION

1. To begin with we would like you to tell us the first names of all the members of this household who usually live, eat, and sleep here. Begin with the head of the household listing all adults, children, and infants.
2. What is the relationship of all others to ____ (head of household)? (See CARD A for code)
- (a) What are the ages of all members of this household?
(Record actual age after last birthday)
- (b) Their Sex?
Record (1) = Male
(2) = Female
- (c) For those 16 years and older, what is their marital status at the present time? (Show CARD B to Respondent)
Record (1) = single (never married)
(2) = married only once
(3) = married more than once
(4) = common-law
(5) = widowed
(6) = separated
(7) = divorced
- (d) For those 16 years and older, what is the highest grade ____ attended in school? (See CARD C for code)
- (e) Did they finish that grade?
Record (1) = Yes
(2) = No (Skip to Question 2(g))
- (f) (If Yes to 2(e)) Where did they finish that grade?
Record ____ (See CARD Q for code)
Country or Island
- (g) What ethnic group does each member of this household identify with? (CARD D, Ethnicity)
- Record (01) = Black (08) = Korean
(02) = Caucasian (09) = Saipanese
(03) = Chamorro (10) = T.T. Islander
(04) = Chinese Specify: _____
(05) = Filipino Island Group
(06) = Indian (11) = Vietnamese
(07) = Japanese (12) = Other (Specify: _____)

[illegible]

FORMERLY CARD 12

PROBE: Are there any persons who usually lived, ate, and slept here during the past year but are now away for some reason. If YES, what is this person's name? Then ask Question 2 through 2(g).
If NO, turn page and continue with Question 3.

First I am going to ask you a series of questions regarding your health care experiences during the last 2 weeks outlined on the calendar I have just given you.

- Record (1) - Yes
(2) - No (skip to Question 4)

- Record (1) - Guam Memorial Hospital
(2) - Navy Regional Medical Center
(3) - Old GHM
(4) - Off-Island (Specify: _____)
(5) - GHM and off-island
(6) - HERE and off-island

- (c) During the last 2 weeks, for what condition was _____
in the hospital? (SHOW RESPONDENT CARD E HEALTH
CONDITIONS LISTING if they need help with recall!)

- (d) When did _____ first notice or get this condition?
Record (00) = less than 1 month
(actual number 01 to 12 months)
(13) = more than 12 months
(14) = unknown, don't know, or NO ANSWER

- (e) Does _____ still have this condition at this time?
Record (1) = Yes
(2) = No

- (f) Who was _____'s doctor while in the hospital? (Show respondent CARD F Doctor and Health Facility listing if they need help with recall!)

[illegible]

- (g) Was another doctor consulted, either by a visit or phone for _____'s condition while _____ was in the hospital during the last 2 weeks?
Record (1) = Yes
(2) = No (skip to Question 3(1))

- (h) Who was the other doctor? (See CARD F for code)

- (1) Was a doctor consulted for any other condition
while in the hospital during the last 2 weeks?
Record (1) = Yes
(2) = No (skip to Question 3(1))

- (j) What other condition did _____ have? (CARD E, HEALTH CONDITIONS LISTING)

- (k) Who was this doctor? (see CARD F for code)

- (1) How was this hospitalization paid for? (see CARD G. Modes of Hospitalization Payment)

PROBE: Did any other member of this household stay in a hospital during the last 2 weeks due to illness or injury? If YES, repeat Questions 3(a), 3(b), etc... If NO, continue with Question 4.

[illegible][illegible]

- (2) = No (Skip to Question 6)

- (h) (If Question 5(f) was answered) During the last 2 weeks, all totaled how many times did consult a doctor (or have someone consult a doctor for him?)
Record number of times

[illegible]

- (1) During the last 2 weeks, how many days did this illness or injury keep ____ from going to work for which pay is received?
Record number of days or 99 for those who are not working.
- (2) During the last 2 weeks, how many days did this illness or injury keep ____ from going to school?
Record number of days or 99 for those who are not going to school.

PROBE: Did any other member of this household during the last 2 weeks cut down or restrict their usual activities due to illness or injury?
If YES, repeat Question 5(a), 5(b), etc...
If NO, continue with Question 6.

[illegible]

- Record (1) - 3pg

(2) - No (Skip to Question 7)

- (b) How many times during these last 2 weeks, did
 _____ go to this doctor's office or clinic?
 Record number of times

- (d) Did _____ get medical advice over the telephone during this same period? .
Record (1) - Yes
(2) - No

PROBE: Was any other person from this household who was in GOOD HEALTH and had NO INJURY AT THE TIME visited a doctor's office or clinic in the last 2 weeks?
If YES, repeat Questions 6(a), 6(b), etc...
If NO, continue with Question 7.

Now I am going to ask you about your health care experience during the past 12 months or last year.

7. During the past 12 months (not including the last 2 weeks), has anyone in this household had any of the following Health Conditions? (See CARD E for conditions)
Record (1) = Yes
(2) = No (Skip to Question 8)

- (a) If YES, who is this and what is/are the condition(s)?
(b) When was/were this/these condition(s) first diagnosed for ____? (See CARD Z)

* REFER TO PAGE 26 FOR QUESTION 50.

[illegible][illegible]

8. During the past 12 months (not including the 2 weeks
we asked about earlier), did anyone in this household
stay in a hospital because of illness or injury?
Record (1) = Yes
(2) = No (Skip to Question 9)

- [illegible]

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- (2) = No (Skip to Question 9(h))

(14) = unknown, don't know, or NO ANSWER

[illegible]

157

**RESTRICTED ACTIVITIES
PAST 12 MONTHS**

- (a) If YES, who was this and HOW MANY DAYS during the past 12 months did ____ stay in bed at home because of illness or injury?
Record number of days
- (b) Of the total number of days in bed at home just mentioned, how many days did illness or injury keep ____ from going to work for which pay is received?
Record number of days
- (c) Of the total number of days in bed at home just mentioned, how many days did illness or injury keep ____ from going to school?
Record number of days

11. During the past 12 months, did anyone in this household cut down or restrict their usual activities for any given length of time because of illness or injury? (Do not count the 2 weeks mentioned earlier and also those days during the past 12 months _____ was hospitalized or stayed in bed at home due to illness or injury.)

Record (1) = Yes
(2) = No (Skip to Question 12)

- [illegible]

- PROBE:** Did any other member of this household cut down or restrict their usual activities during the past 12 months?
If YES, repeat Questions 11(a), 11(b), and 11(c).
If NO, continue with Question 12.

[illegible]

THErapy REHABILITATION
PAST 12 MONTHS

13. During the past 12 months did anyone in this household with a long-time impairment or disability (hearing, speech, physical) visit a health facility for THERAPY, HABILITATION OR REHABILITATION?

Record (1) = Yes

(2) = No (Skip to Question 14)

- (a) If YES, who was this, and where did ____ go for this treatment? (Use CARD F for code)

- (b) How many times did ____ go there?
Record number of times

- (c) Did ____ go any place else for therapy or rehabilitation? If YES, where? (Use CARD F for code)
If NO, record 99, and continue with Question 14.

- (d) If YES to previous question, how many times did ____ go there?
Record number of times

- (e) Did ____ go anyplace else for therapy or rehabilitation at a different place? If YES, where? (Use CARD F for code). If NO, record 99, turn page and continue with Question 14.

NAME	IDENTIFICATION CODE										13	a					b			
	House			Person			Card		Village			11	12	13	14	15	16	17	18	
	2	3	4	5	6	7	8	9	10											
						3	5													

c				d			e			
19	20	21	22	23	24	25	26	27	28	29

PROBE: Did any other person from this household with long-term impairment or disability (hearing, speech, physical) visit a health facility for therapy during the past 12 months?
If YES, repeat Questions 13(a), 13(b), etc...
If NO, continue with Question 14.

14. During the past 12 months, did anyone in the household visit a DENTIST for any reason?

Record (1) - Yes

(2) = No (Skip to Question 15)

- (a) If YES, who went and which dentist did _____ visit?
(See CARD F for code)

- (b) What was/were the reason(s) for the visit(s)?
(CARD J DENTAL CONDITIONS)

- (c) How many times did _____ visit this dentist?
Record number of times

- (d) Did _____ visit another dentist at another location?
If YES, who was this dentist? (See CARD F for code).
If NO, record 99 and skip to Question 14(h).

- (e) How many times did _____ visit this dentist?
Record number of times

- (f) Did _____ visit a different dentist at different location from those mentioned above?

- (g) How many times did _____ visit this dentist?
Record number of times

- (h) Is _____ covered by Dental Insurance?
Record (1) = Yes
(2) = No (Skip to Question 15)

- (1) By which insurance is _____ covered? (CARD K, Dental Insurance)

IDENTIFICATION CODE																DENTIST VISIT PAST 12 MONTHS																					
NAME	House				Per-son				Card				Vil-lage				14	a				b				c				b				c			
	2	3	4		5	6	7	8	9	0	1	2	3	4	5	6		11	12	13	14	15	16	17	18	19	20	21	22	23	24						
							3	6																													

[illegible]

PROBE: Did any other person from this household visit a DENTIST during the past 12 months for any reason?
If YES, repeat Questions 14(a), 14(b), etc...
If NO, continue with Question 15.

OFF-ISLAND TREATMENT

- Record (1) - Yes
(2) - No (Skip to Question 16)

- (b) Where did _____ go OFF-ISLAND

<u>City</u>	<u>State/Country</u>
-------------	----------------------

- (c) Which of the following services did _____ receive while OFF-ISLAND? (CARD L, OFF-ISLAND Services)
- Record (1) - Physical Rehabilitation Services
(2) - Chemotherapy
(3) - Radiation Therapy
(4) - Nuclear Medicine Diagnosis and Treatment
(5) - Open Heart Surgery
(6) - Organ Transplant
(7) - Eye Surgery
(8) - Correction of Congenital Abnormality
(9) - Other (Specify: _____)

- (d) Was _____ referred by a physician or health facility on Guam to seek medical attention OFF-ISLAND because these services were not available on Guam?
Record (1) = Yes
(2) = No

- (e) Were the services _____ received OFF-ISLAND paid for in part or whole by insurance?
Record (1) = Paid in full by insurance
(2) = Paid in part by insurance
(3) = Not paid by insurance

[illegible]

PROBE: Has any other member of this household travelled OFF-ISLAND specifically for the diagnosis and/or treatment of a medical condition?
If YES, repeat Questions 15(a), 15(b), etc...
If NO, continue with Question 16.

REGULAR DOCTOR

- Record (1) - Yes

(2) = No (Skip to Question 17)

- (a) If YES to previous question, who was this and what was the main reason that _____ did not see a doctor when they needed to? (See CARD H for code)

- Record (1) = own car or truck

- (1) - Own car or truck
(2) - relative's car or truck
(3) - non-relatives car or truck
(4) - Social Service agency car, truck or van
(5) - Taxi
(6) - Bus
(7) - Walk
(8) - Ambulance
(9) - Other (Specify: _____)

- Record (1) = very difficult

- (1) = very difficult
(2) = somewhat difficult
(3) = not difficult
(4) = refusal, or NO ANSWER

- Record (1) = Yes

- (2) - No
(3) - Other (Specify: _____)

- Record (1) = Yes

(2) = No (Skip to Question 20(b))

[illegible]

- (a) If YES to previous question, who is this? And what is this doctor's name? (See CARD F for code) If doctor is not on the list, ask Question 20(b).

- (b) Where does usually go to receive medical attention
(See CARD # for code)

- Record (1) = Yes
(2) = No (Skip to Question 22)

- Record (1) - cigarettes, filtered
(2) - cigarettes, unfiltered
(3) - cigars
(4) - pipes
(5) - Other (Specify:)

- (b) How long has _____ been smoking?
Record number of years

- (c) On the average, how many
(i) cigarettes
(ii) cigars
(iii) pipefuls
does _____ smoke per day?
Record number of each

- (d) Has _____ ever been advised by a doctor to stop smoking?
Record (1) = Yes
(2) = No

22. Does any member of this household exercise at least 3 times per week?
Record (1) = Yes
(2) = No (Skip to Question 23)

- (a) If YES to previous question, who is this and which of the following exercises does ____ perform on a regular basis? (CARD M, Exercise List)

- (b) How much time does _____ usually spend exercising per session?
- Record (1) = 1 to 15 minutes
(2) = 16 to 30 minutes
(3) = 31 minutes to 1 hour
(4) = more than 1 hour

[illegible][illegible]

- (c) Does _____ usually sweat during and/or after exercising?
(In other words, is _____'s exercising strenuous enough
to cause sweating?)
Record (1) = Yes
(2) = No

23. Does any member of this household usually drink alcoholic beverages, such as beer, wine, or mixed drinks?
Record (1) = Yes (If one drink per month or more)
(2) = No (If a non-drinker or if drinks only occasionally, skip to Question 24)

Record

- (1) = 1/month
- (2) = 2-3/month
- (3) = 1/week
- (4) = 2-3/week
- (5) = 4-6/week
- (6) = 1/day
- (7) = 2-3/day
- (8) = greater than 3/day

(c) In what social situations does _____ usually drink alcoholic beverages?
Record (1) = alone
(2) = small group of friends or family
(3) = at a fiesta or party
(4) = Other (Specify: _____)

(d) What time of day does _____ usually drink?
Record (1) = morning
(2) = afternoon
(3) = evening
(4) = all day long
(5) = Other (Specify: _____)

[illegible]

(g) How many times has _____ tried to stop drinking alcohol?
Record number of times

165

EATING HABITS

24. How many meals does _____ usually eat per day?
Record number of meals _____

(a) If less than three meals/day which meal does _____ usually skip?

Record (1) = breakfast

(2) - lunch

(3) - dinner

(4) = Other (Specify: _____)

- (b) If there is a second meal missed, which is it?
(SAME CODE).
If there is NO second meal missed, record 9 and
continue.

25. How often per day does _____ usually eat in between meals?

Record number of times

26. How many times a week does _____ eat a meal away from home?

Record (0) = seldom, never

(1) - 1 to 3 times

(2) = 4 to 6 times

(3) - 7 or more times

- (a) Which meal does _____ usually eat away from home?

Record (1) = breakfast

(2) - lunch

(3) - dinner

- (b) If there is a second meal eaten away from home, which is it? (SAME CODE). If there is NO second meal eaten away from home, record 9 and continue.

27. How often does _____ use soy sauce, finadene, Ajinomoto (USC) or a salt shaker at the table?

Record (0) = Rarely, never

(1) = Occasionally

(2) - Often

(3) - Always, everyday

[illegible]

♦♦ FORMERLY CARD 53 PAGE 19 ♦♦

28. Does any member of this household usually wear a seat belt when driving or riding as a passenger in a car?
Record (1) = Yes, who is this?
(2) = No (Skip to Question 29)

29. Does anyone in this household ever use medication or drugs which affects their mood or helps them relax?
Record (1) - Yes
(2) - No (Skip to Question 30)

- (a) Who is this and how often is this?
 Record (0) = Never/rarely
 (1) = Occasionally/sometimes
 (2) = Frequently

30. In the last 2 weeks, has any member of this household been greatly upset, troubled, or depressed for more than a few days due to problems in the family, divorce or separation, illness or death in the immediate family, pressure associated with work or school, loss of a job, or financial concerns?
- Record (1) = Yes
(2) = No (Skip to Question 31)

- (a) Can you tell us why _____ was troubled, upset, or depressed?
- (b) Was _____ unable to do his/her usual work or daily activities because of this problem?
- Record (1) = Yes
(2) = No

31. Has anyone in this household ever received training in first aid?
Record (1) = Yes, who is this?
(2) = NO (Skip to Question 32)

32. Has anyone in this household ever received training in cardi-pulmonary resuscitation (CPR)?
Record (1) = Yes, who is this?
(2) = No (Skip to Question 33)

SAFETY HABITS

DEPRESSION

FIRST AID/CPR

[illegible]

QUESTIONS 33-44 ARE FOR THE RESPONDENT ONLY!

33. If the following programs were offered, which ones would you like to attend? (CARD N, Health Programs listing).

Record (1) = Yes

(2) = No to the following programs

- (i) = stop smoking
- (ii) = weight reduction
- (iii) = stress management
- (iv) = parenting
- (v) = nutrition
- (vi) = exercise
- (vii) = first aid/CPR
- (viii) = food preparation and handling
- (ix) = Other (Specify: _____)

(a) Where would you prefer that the program be held?

Record (1) = Village Community Center

(2) = Public Health District Centers
(North, Central, South)

(3) = Hospital

(4) = School

(5) = Worksite

(6) = No difference

(7) = Other (Specify: _____)

(b) What day would you prefer that program be held?

Record (1) = Week-days

(2) = Saturday

(3) = Sunday

(4) = No Difference

(5) = Weekends

(c) What time would you prefer that the program be held?

Record (1) = Between 8 a.m. and 12 p.m.

(2) = Between 12 p.m. and 5 p.m.

(3) = Between 5 p.m. and 7 p.m.

(4) = 7 p.m. or later

(5) = No difference

(d) Would you be willing to pay a nominal fee to attend these programs?

Record (1) = Yes

(2) = No

NAME	IDENTIFICATION CODE										HEALTH PROGRAMS													
	House			Per-son			Card		Vil-lage		33i	33ii	33iii	33iv	33v	33vi	33vii	33viii	33ix	33x	33xi	33xii	33xiii	33xiv
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
						6	0																	

HEALTH INFORMATION

34a	b	c	d	e	f	g	h	i	35
25	26	27	28	29	30	31	32	33	34

34. When you have some kind of illness or health problem, how frequently do you get information about what is wrong with you (a diagnosis) from: (CARD O, 1 = very often; 2 = sometimes; 3 = rarely; 4 = never)

(a) A member of this household?

(b) A relative not living in this household?

(c) A friend who is not a relative?

(d) A priest or a clergyman?

(e) A Suruhana(o), Hilog, or other traditional healer?

(f) A nurse or medical aide?

(g) A medical doctor?

(h) Books, magazines, newspapers, pamphlets, etc.

(i) TV or radio programs/announcements?

35. Which of these sources from whom you have gotten information do you feel has been the most helpful to you? Which one? _____

34(a)-34(i)

36. The next few questions refer to your own feelings and opinions about health services here on Guam. In the past, to what extent were you satisfied with... (CARD P, 1 = very satisfied; 2 = satisfied; 3 = somewhat satisfied; 4 = somewhat dissatisfied; 5 = dissatisfied; 6 = very dissatisfied.)

- (a) The information health professionals have given you about your health conditions?
- (b) The information health professionals have given you about treatment.
- (c) The overall quality of health care you have received?
- (d) The quality of health care you have received from doctors (M.D.'s)?
- (e) The quality of health care you have received from nurses?
- (f) The quality of health care you have received from medical aides and technicians?
- (g) The out-of-pocket costs (other than health insurance) you have had to pay?
- (h) The time it takes to travel to a doctor's office or your health facility?
- (i) The time it takes to complete a visit at a doctor's office or health facility from arriving until leaving?
- (j) The days of the week that your usual source of health care is opened?
- (k) The time of day that your usual health service is open?

SATISFACTION

SANITATION ATTITUDE

NAME	IDENTIFICATION CODE										35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	
	House	Per-son	Card	Vil-lage																						
	1	2	3	4	5	6	7	8	9	10																
						6	0																			

The following statements have to do with SANITATION ATTITUDE. Please respond with TRUE or FALSE.

- Record (1) = True
(2) = False
(9) = Don't know

37. Chicken Kalaguin leftovers can be kept safely for up to 12 hours without refrigeration if they are kept out of the sun and covered so flies can't get in.
38. It is alright for babies to play with small puppies because people don't get dog diseases.
39. It is normal and beneficial for children to eat small amounts of dirt, it helps them develop immunity to many diseases.
40. Cold water is just as good as hot water for laundering diapers, etc..., if a good all-temperature detergent is used.

41. How long have you lived continuously at this residence?
DO NOT include time away for more than a year such as
 college, military, change of address, etc...
 Record (0) = less than one year
 (number of years)

(a) HOW LONG did _____ live there before moving to this residence?
Record (0) = less than one year
(number of years)

(a) to another residence in the same village?
(b) to a residence in a different village?
What village? _____
(c) Off-Island?
Where? _____ (See CARD Q for code)

(THIS LAST SET OF QUESTIONS IS ONCE AGAIN FOR THE WHOLE HOUSEHOLD)

(a) IF YES, who is this, and by which insurance plan are they covered. (Show CARD 9 to Respondent)

[illegible][illegible]

49. For our last question, we would like to know who you feel is responsible for maintaining and protecting your good health? (CARD BB)

Record (01) = Myself
(02) = Family
(03) = Doctor
(04) = Government (Local and Federal)
(05) = Myself and Family
(06) = Myself and Doctor
(07) = Myself and Government
(08) = Family and Doctor
(09) = Family and Government
(10) = Doctor and Government
(11) = Myself, Family and Doctor
(12) = Myself, Family and Government
(13) = Family, Doctor and Government
(14) = Myself, Doctor and Government
(15) = All of the above

*THIS IS THE END OF THE SURVEY. WE REALLY APPRECIATE YOU
TAKING TIME OUT TO PARTICIPATE. THANK YOU VERY MUCH!

Time interview ended: _____

50. During the last 2 weeks, (not counting the visits to a doctor asked about earlier), did anyone visit a DOCTOR for the diagnosis and treatment of an illness or injury?

Record (1) = yes

(2) = no (Skip to Question 6)

- (a) If YES, who went and which doctor did ____ visit?
(Use CARD F for code)
- (b) For which condition(s) did ____ visit a doctor's office for?
(See CARD E for code)
- (c) Did ____ visit another doctor at another location?
If YES, who was this? (Use CARD F for code)
If NO, record 99 and skip to Question 50(g).
- (d) If YES to previous question, how many times did ____ visit this doctor?
Record number of times.
- (e) Did ____ visit a different doctor not mentioned above at a different location?
If YES, who was this? (Use CARD F for code).
If NO, record 99 and skip to Question 50(g).
- (f) If YES to previous question, how many times did ____ visit this doctor?
Record number of times.
- (g) How many times all totaled did ____ visit a doctor during the past 2 weeks?
Record number of times.

APPENDIX D

A SURVEY TO DETERMINE THE HEALTH STATUS
OF THE POPULATION OF GUAM

INTERVIEW SCHEDULE
CODE CARDS

CARD A - Question 2
Relationship

- 01 - Head of Household
- 02 - Spouse
- 03 - Son
- 04 - Daughter
- 05 - Nephew
- 06 - Niece
- 07 - Father
- 08 - Mother
- 09 - Brother
- 10 - Sister
- 11 - Cousin
- 12 - Father-in-law
- 13 - Mother-in-law
- 14 - Son-in-law
- 15 - Daughter-in-law
- 16 - Brother-in-law
- 17 - Sister-in-law
- 18 - Grandson
- 19 - Granddaughter
- 20 - Uncle
- 21 - Aunt
- 22 - Other Kin
- 23 - Tenants/Boarders, Paying
Guests
- 24 - Friend
- 25 - Other (Specify: _____)

CARD B - Question 2c
Marital Status

- 1 - Single (Never Married)
- 2 - Married only once
- 3 - Married more than once
- 4 - Common-law
- 5 - Widowed
- 6 - Separated
- 7 - Divorced

CARD C - Question 2d
Education

Highest Grade Completed

- (1) Elementary - K 1 2 3 4 5 6 7 8
- (2) High School - 9 10 11 12
- (3) College - 1 2 3 4 5 or more years

CARD D - Question 2g
Ethnicity

- 01 - Black
02 - Caucasian
03 - Chamorro
04 - Chinese
05 - Filipino
06 - Indian
07 - Japanese
08 - Korean
09 - Saipanese
10 - T.T. Islander (Specify: _____)
Island Group
11 - Vietnamese
12 - Other Single (Specify: _____)
13 - Chamorro/Filipino
14 - Other Combination (Specify: _____)

CARD E - Questions 3c, 3j, 4b, 4i, 5b, 7, 9b, 50b
 Health Conditions - please be specific!

- | | |
|---|--|
| <p>01 - TUMOR, GROWTH,
 NEOPLASM, CANCER
 01-Leukemia
 02-Hodgkin's Disease
 03-Lymphoma
 04-Sarcoma
 05-Benign growth</p> | <p>05 - RESPIRATORY TRACT
 DISORDERS
 01-Asthma
 02-Emphysema
 03-Tuberculosis (TB)
 04-Bronchitis
 05-Pneumonia</p> |
| <p>02 - HEART and BLOOD VESSEL
 DISORDERS, STROKE
 01-Hypertension (high
 blood pressure)
 02-Hypotension (low
 blood pressure)
 03-Heart disease
 04-Rheumatic
 05-Varicose veins
 06-Hemorrhoid</p> | <p>06 - GENITO-URINARY TRACT
 DISORDERS
 01-Kidney disease,
 kidneystones
 02-Bladder disease
 03-Problems of ureters
 or uretha
 04-Prostate problems
 05-Problems of female
 reproductive system
 06-Menopause
 07-Kidney transplant</p> |
| <p>03 - METABOLIC and
 ENDOCRINE DISEASES
 01-Diabetes
 02-Thyroid problems
 03-Obesity (overweight)
 04-Nutritional
 deficiencies
 05-Cholesterol problems</p> | <p>07 - NEUROLOGICAL DISORDERS
 01-ALS (Lytic)
 02-Parkinson's disease
 (Bodig)
 03-Epilepsy
 04-Multiple Sclerosis
 05-Retardation
 06-Migraine headaches
 07-Hydrocephalus</p> |
| <p>04 - DIGESTIVE TRACT
 DISORDERS
 00-Jaundice
 01-Ulcers of mouth,
 esophagus, stomach,
 or duodenum
 02-Colitis
 03-Diverticulitis
 04-Spastic colon
 05-Liver disease,
 Cirrhosis
 06-Gallbladder disease,
 gallstones
 07-Problems of pancreas
 08-Hernia rupture
 09-Diarrhea, vomiting,
 stomachaches, cramps
 10-Dehydration
 11-Appendicitis</p> | <p>08 - MENTAL DISORDERS
 01-Chronic or severe
 depression, manic
 depression
 02-Schizophrenia
 03-Paranoia
 04-Stress-anxiety
 05-Nervous breakdown</p> |

CARD E - Continued

Health Conditions - please be specific!

- | | |
|--|---|
| <p>09 - MUSCULAR/SKELETAL DISORDERS</p> <ul style="list-style-type: none"> 00-General body aches 01-Arthritis 02-Rheumatism 03-Gout 04-Sciatica 05-Bursitis 06-Joint and bone pains 07-Back pains 08-Lumbago 09-Pinches nerve <p>10 - SKIN DISORDERS</p> <ul style="list-style-type: none"> 01-Boils, carbuncles 02-Eczema 03-Psoriasis 04-Skin ulcer 05-Itching 06-Rash 07-Flaking, dry skin 08-Acne, pimples 09-Herpes <p>11 - HEAD/EAR/NOSE/THROAT DISORDERS</p> <ul style="list-style-type: none"> 00-General symptoms 01-Chronic headaches 02-Sinus problems 03-Ear infections 04-Tonsillitis 05-Strep throat 06-Laryngitis 07-Mouth ulcers 08-Chancres 09-Herpes <p>12 - ALLERGIC DISORDERS</p> <ul style="list-style-type: none"> 01-Skin allergies 02-Respiratory system (hay fever) 03-Food allergies | <p>13 - EYE or VISUAL DISORDERS</p> <ul style="list-style-type: none"> 00-General symptoms 01-Cataracts 02-Glaucoma 03-Retinitis 04-Retinitis 05-Visually handicapped, blind 06-Various eye troubles, pink eye 07-Injury <p>14 - INFECTIOUS DISEASES</p> <ul style="list-style-type: none"> 01-Influenza of respiratory or gastrointestinal tract 02-Chicken pox 03-Measles 04-Mumps 05-Whooping cough 06-Salmonella 07-Food poisoning 08-Hepatitis 09-Cholera 10-Common Cold 11-Meningitis 12-Athletes foot <p>15 - PREGNANCY</p> <ul style="list-style-type: none"> 01-Normal pregnancy 02-Problems with pregnancy 03-Normal delivery 04-Abnormal delivery <p>16 - ALCOHOL/DRUG RELATED PROBLEMS</p> <ul style="list-style-type: none"> 01-Disorientation 02-Hyperactivity 03-Dizziness 04-Loss of consciousness 05-Convulsion |
|--|---|

CARD E - ContinuedHealth Conditions - please be specific!

- 17 - INJURIES/ACCIDENTS
 - 01-Broken bones
 - 02-Laceration requiring stitches
 - 03-Dislocations
 - 04-Sprains
 - 05-Cuts
 - 06-Bruises
 - 07-Internal injuries
 - 08-Burns
 - 09-Animal bites
 - 10-Abrasions
- 18 - DISABILITIES/
IMPAIRMENTS
 - 01-Disabled by stroke
 - 02-Loss of sight
 - 03-Loss of hearing
 - 04-Loss of speech (due to cancer surgery)
 - 05-Loss of arms, legs, or hand (due to accident or amputation)
 - 06-Partially paralyzed
 - 07-Fully paralyzed
- 19 - BIRTH
 - 01-Normal
 - 02-Postnatal distress
 - 03-Birth defects
 - 04-Miscarriage
- 00 - OTHER
 - 00-Other

CARD F - Questions 3f,h,k; 4f,j; 5f; 8d; 9a,e; 12d,f; 13c,e;
14d; 20a,b; 50a,c

Doctors and Health Facilities on Guam

- | | |
|---|--|
| <p>00 - NO PREFERENCE/NO CHOICE
00-Dr. Chang, Acupunc-
ture (Agana)</p> <p>01 - ASAN FAMILY CLINIC
(ASAN)
01-Dr. Acosta</p> <p>02 - CARLOS HEIGHTS CLINIC
(TUMON, TAMUNING)
02-Dr. Santos (Tumon,
Tamuning)
03-Dr. M. Kallingal
(Harmon, Dededo)
04-Dr. S. Kallingal
(Tumon, Tamuning)</p> <p>03 - CRUZ PHARMACY
(TAMUNING)
05-Dr. Olivia Cruz</p> <p>04 - DR. CURRY'S OFFICE
(GCIC, AGANA)
06-Dr. Curry</p> <p>05 - DEDEDO MEDICAL CENTER
(DEDEDO)
07-Dr. Atendido
08-Dr. Carrera</p> <p>06 - FAMILY HEALTH PLAN
FHP, (TAMUNING)
00-Dr. McDonald
09-Dr. Aquino
10-Dr. Binkley
11-Dr. Burkhard*
12-Dr. Camacho
13-Dr. Cariaga
14-Dr. Eigner*
15-Dr. Fishman**
16-Dr. Freeman
17-Dr. Dorneveerd
18-Dr. Huitema
19-Dr. Larive*
20-Dr. Lombard</p> | <p>06 - FAMILY HEALTH PLAN, FHP
(TAMUNING)--continued
21-Dr. Martinez
22-Dr. Michels
23-Dr. Murphy
24-Dr. Oliver
25-Dr. Rozychi
26-Dr. Ryan*
27-Dr. Silan**
28-Dr. Smith
29-Dr. Stadler
30-Dr. Wanlass
31-Dr. Wenner</p> <p>07 - DR. GARRETT'S OFFICE
(GCIC, AGANA)
32-Dr. Garrett</p> <p>08 - GOOD SAMARITAN CLINIC
AND SURGICENTER (CH
SAN ANTONIO, TAMUNING)
33-Dr. Bollinger
34-Dr. Hayes*
35-Dr. Matthews**
36-Dr. Macaraeg
37-Dr. Soriano
38-Dr. Teiche
39-Dr. Werthman</p> <p>09 - GUAM MEDICAL CLINIC (CH
SAN ANTONIO, TAMUNING)
40-Dr. Sirilan</p> <p>10 - GUAM MEMORIAL HOSPITAL,
GMH (TAMUNING)</p> <p>11 - GUAM POLY CLINIC (TAMUNING)
41-Dr. Chiu
42-Dr. Griley
43-Dr. Hong</p> |
|---|--|

CARD F - ContinuedDoctors and Health Facilities on Guam

- | | |
|--|---|
| <p>12 - I.T.C. CLINIC #
(TAMUNING)
44-Dr. Arguelles
45-Dr. Basilio
46-Dr. P. Boonprakong
47-Dr. V. Boonprakong
48-Dr. Platt
49-Dr. Sison</p> <p>13 - I.T.C. CLINIC #2
(TAMUNING)
50-Dr. Chen</p> <p>14 - FAMILY CLINIC (I.T.C.,
(TAMUNING)
51-Dr. Duenas
52-Dr. Ericson
53-Dr. Perez
54-Dr. Taitano</p> <p>15 - MARIANAS MEDICAL CLINIC
(TAMUNING)
55-Dr. Guzman</p> <p>16 - PUBLIC HEALTH and SOCIAL
SERVICE
00-Dr. Parents
(Mangilao)</p> <p>17 - DR. SABLAN'S CLINIC
(MONGMONG/TOTO/MAITE)
56-Dr. Sablan</p> <p>18 - DR. SAGISI and DR.
BATOYAN'S CLINIC (GOOD
SAMARITAN CLINIC, CH
SAN ANTONIO, TAMUNING)
57-Dr. Batoyan
58-Dr. Sagisi</p> <p>19 - ST. ANTHONY'S CLINIC
(TAMUNING)
59-Dr. Concepcion
60-Dr. Salvador</p> | <p>20 - SEVENTH DAY ADVENTIST
CLINIC (TAMUNING)
00-Dr. Werthman
61-Dr. Boyle
62-Dr. Holm
63-Dr. Hanson
64-Dr. Gerling
65-Dr. B. Steinman
66-Dr. W. D. Steinman
67-Dr. Rick
68-Dr. White
00-Dr. Newbold</p> <p>21 - TAMUNING MEDICAL CLINIC
(TAMUNING)
69-Dr. Chang</p> <p>22 - DR. TOLENTINO'S OFFICE
(I.T.C., TAMUNING)
70-Dr. Tolentino</p> <p>23 - DEDEDO DENTAL CLINIC
(DEDEDO)
71-Dr. Walker</p> <p>24 - FHP DENTAL CLINIC
(TAMUNING)
72-Dr. Chun
73-Dr. Goldstein
74-Dr. Ives
75-Dr. Soriano
76-Dr. Walpole</p> <p>25 - ST. ANTHONY'S DENTAL
CLINIC (CH SAN ANTONIO,
TAMUNING)***
77-Dr. Yumang</p> <p>26 - G.I.T.C. DENTAL CLINIC
(TAMUNING)
78-Dr. Labalan</p> <p>27 - GUAM POLY DENTAL CLINIC
(TAMUNING)
79-Dr. Silos</p> <p>28 - DR. MADARANG'S CLINIC
(HARMON, DEDEDO)
80-Dr. Madarang</p> |
|--|---|

CARD F - Continued

Doctors and Health Facilities on Guam

- | | |
|---|--|
| 29 - MARIANAS DENTAL CLINIC
(TAMUNING)
81-Dr. Veloria | 39 - EAST WEST ORIENTAL CLINIC
(MONGMONG/TOTO)
00-Dr. Chang H. Chung |
| 30 - ORDOT DENTAL CLINIC
(ORDOT/CHALAN PAGO)
82-Dr. Klein
83-Dr. Nelson | 40 - DR. T. J. MASKELL'S
CHIROPRACTOR CLINIC (TUMON,
TAMUNING)
00-Dr. T. J. Maskell |
| 31 - ORTHODONTICS CLINIC (CH
SAN ANTONIO, TAMUNING)
84-Dr. Camacho
85-Dr. Hoffman | 41 - GUAM CHIROPRACTOR CLINIC
(GCIC, AGANA) |
| 32 - PUBLIC HEALTH and
SOCIAL SERVICES
(MANGILAO)
86-Dr. Adamson
87-Dr. Mayberry
88-Dr. Sterritt | 42 - DEPT. OF MENTAL HEALTH and
SUBSTANCE ABUSE (OLD GMH
BLDG., TAMUNING) |
| 33 - DR. REYNOLDS & ASSOC.
(GCIC, AGANA)
89-Dr. Fleischer
90-Dr. Post
91-Dr. Reynolds
92-Dr. Romero
93-Dr. Yasuhiro | 43 - PSYCHOLOGICAL SERVICES
01-Dr. E. Fuerst
02-Dr. E. Woodyard (Agana)
03-Behavioral Clinic
(Tamuning) |
| 34 - SEVENTH DAY ADVENTIST
DENTAL CLINIC (YPAO,
TAMUNING)
94-Dr. Agnetta
95-Dr. Guth
96-Dr. Lee
97-Dr. McFarlane | 44 - SURUHANA/SURUHANNO
45 - HILOG
46 - TRADITIONAL HEALTH HEALER
50 - NURSE PRACTITIONER
51 - UOG CLINIC (MANGILAO) |
| 35 - DR. TROYER'S CLINIC
98-Dr. Troyer | 60 - ZEE'S COMPLEX/CENTURY PLAZA
(TAMUNING)
80-Dr. Wy Chen, GP
81-Dr. Acosta, Optical |
| 36 - DR. VAN DER PYLE'S
CLINIC (GCIC, AGANA)
99-Dr. Van der Pyle | 47 - NAVAL HOSPITAL (AGANA HTS)
00-Dr. Espirito
00-Dr. Smith |
| 37 - CHINA ACUPUNCTURE
CLINIC (TAMUNING)
00-Dr. Liu | 48 - <u>ANDERSEN CLINIC (YIGO)</u>
*Dr. no longer practicing on
island, went off-island.
**Dr. presently located:
-0615, ITC (Tamuning)
-0627, Asia Plaza (Tamuning)
-0835, Micronesia Eye Center
(Tamuning). |
| 38 - GUAM ACUPUNCTURE CLINIC | ***Clinic 25 corrected from Good
Samaritan Dental Clinic to St.
Anthony's Dental Clinic. |

CARD G - Questions 3l and 8e
Modes of Hospitalization Payments

- 01 - FHP
- 02 - GMHP
- 03 - HML
- 04 - STAYWELL
- 05 - HMSA
- 06 - BLUE CROSS/BLUE SHIELD
- 07 - MEDICAID
- 08 - MEDICARE: HOSPITAL ONLY
- 09 - MEDICARE: HOSPITAL, PHYSICIAN VISIT
(Specify Carrier: _____)
- 10 - MILITARY/CHAMPUS
- 11 - V.A.
- 12 - HOSPITAL ABATEMENT (Welfare, Public Health etc...)
- 13 - COMMERCIAL (Specify: _____)
- 14 - SELF-PAID, excluding co-payments and deductibles
- 15 - NEVER RECEIVED A BILL
- 16 - UNABLE TO PAY PART OR ALL OF BILL, exclude co-payments
and deductible
- 17 - OTHER (Specify: _____)
- 18 - Federal (e.g. GEHA)

CARD H - Questions 4g, 5g, and 16a
Reasons Why Doctor Was Not Consulted

- 01 - Could not get appointment
- 02 - No money or insurance for doctor visit
- 03 - No transportation
- 04 - Felt the doctor could not do anything
- 05 - Felt I could treat myself
- 06 - Didn't want to bother the doctor
- 07 - Didn't feel that illness/injury was that serious
- 08 - Fear or discomfort in doctors visits
- 09 - No illness or injury at the time
- 10 - Others (Specify: _____)

CARD I - Questions 6c, and 12 c
Good Health/No injury Doctor's Visit

- 1 - Prescription/Refill
- 2 - Annual Health Exam
- 3 - Employment or School Physical
- 4 - Immunization Update
- 5 - General Check-up
- 6 - Eye Exam
- 7 - Prenatal/Post
- 8 - Other

CARD J - Question 14b
Dental Conditions

- 1 - Checkup and/or Cleaning
- 2 - Filling
- 3 - Extractions
- 4 - Fitting for Tooth Replacement, Crown Cap
or False Teeth
- 5 - Orthodontist
- 6 - Gum Disease
- 7 - Others (Specify:_____)

CARD K - Question 14i
Dental Insurance

- 1 - PUBLIC HEALTH
- 2 - GMHP
- 3 - FHP
- 4 - HML
- 5 - Military
- 6 - Other
- 7 - Federal

CARD L - Question 15cOFF-ISLAND Service

- 1 - Physical Rehabilitation Services
- 2 - Chemotherapy
- 3 - Radiation Therapy
- 4 - Nuclear Medicine Diagnosis and Treatment
- 5 - Open Heart Surgery
- 6 - Organ Transplant
- 7 - Eye Surgery
- 8 - Correcting of Congenital Abnormality
- 9 - Other (Specify: _____)

CARD M - Question 22aExercise List

- 01 - Jogging/running
- 02 - Swimming
- 03 - Tennis
- 04 - Baseball/softball
- 05 - Basketball
- 06 - Weight lifting
- 07 - Working Around the Yard
- 08 - Doing Housework
- 09 - Racquetball
- 10 - Walking (over 1 mile)
- 11 - Aerobics/20 minute workout/heavy workout
- 12 - Bowling
- 13 - Golf
- 14 - Stretching/light workout
- 15 - Football
- 16 - Volleyball
- 17 - Biking
- 18 - Surfing
- 19 - Soccer
- 20 - Other

CARD N - Question 33Health Programs

- 01 - Stop Smoking
- 02 - Weight Reduction
- 03 - Stress Management
- 04 - Parenting
- 05 - Nutrition
- 06 - Exercise
- 07 - First-Aid and/or CPR
(Cardiopulmonary Resuscitation)
- 08 - Food Preparation and Handling
- 09 - Other (Specify: _____)

CARD O - Question 34Possible Sources of Health
Information or Advise

Responses:

- 1 - Very Often
- 2 - Sometimes
- 3 - Rarely (may be once or twice)
- 4 - Never

CARD P - Question 36

This refers to feelings and opinions
about health services on Guam

- 1 - Very satisfied
- 2 - Satisfied
- 3 - Somewhat satisfied
- 4 - Somewhat dissatisfied
- 5 - Dissatisfied
- 6 - Very dissatisfied
- 9 - No experience

CARD Q - Questions 42, and 43c
Off-Island and Village Codes

00 - Guam

VILLAGE:

- 01 - Agana
- 02 - Agana Heights
- 03 - Agat
- 04 - Asan-Maina
- 05 - Barrigada
- 06 - Chalan-Pago-Ordot
- 07 - Dededo
- 08 - Inarajan
- 09 - Mangilao
- 10 - Merizo
- 11 - Mongmong-Toto-Maite
- 12 - Piti
- 13 - Santa Rita
- 14 - Sinajana
- 15 - Talofofo
- 16 - Tamuning
- 17 - Umatac
- 18 - Yigo
- 19 - Yona

OFF-ISLAND:

- 20 - Saipan
- 21 - Rota
- 22 - Tinian
- 23 - Trust Territory District
Which? _____
- 24 - Mainland U.S., Alaska, Hawaii

 City

 State
- 25 - Philippines (Luzon, Visayas, etc...)
Which? _____
- 26 - Japan
- 27 - Korea
- 28 - Taiwan
- 29 - Others (Specify: _____)

CARD R - Question 43

This Refers to Moving from PRESENT RESIDENCES

1	2	3	4	5
HIGHLY LIKELY	LIKELY	NO PLANS	NOT LIKELY	HIGHLY UNLIKELY

CARD S - Question 45a
Health Insurance Plans

- 01 - FHP
- 02 - GMHP
- 03 - HML
- 04 - STAYWELL
- 05 - HMSA
- 06 - BLUE CROSS/BLUE SHIELD
- 07 - MEDICAID
- 08 - MEDICARE: HOSPITAL ONLY
- 09 - MEDICARE: HOSPITAL, PHYSICIAN VISIT
 (Specify Carrier: _____)
- 10 - OTHER (Specify: _____)
- 11 - COMMERCIAL (Specify: _____)
- 12 - MILITARY DEPENDENTS
- 13 - NO INSURANCE

CARD T - Question 46
Out-of-Pocket Health Cost

In the past 12 months (1 year), about how much money has your household directly paid in out-of-pocket costs for health needs (medicine, services, dental, etc. - anything not covered by your health insurance) NOT COUNTING HEALTH INSURANCE PREMIUMS?

JUST GIVE THE CODE FOR THE APPROXIMATE CATEGORY:

<u>Code</u>	<u>Amount</u>
-------------	---------------

- | | |
|---|------------------------------------|
| 0 | - none |
| 1 | - \$1 to \$50 |
| 2 | - \$51 to \$150 |
| 3 | - \$151 to \$300 |
| 4 | - \$301 to \$500 |
| 5 | - \$501 to \$1,000 |
| 6 | - \$1,001 to \$2,000 |
| 7 | - \$2,001 to \$4,000 |
| 8 | - \$4,001 or more (Specify: _____) |

CARD U - Question 47
Public Assistance

Who in your household, if anyone, receives any of the following social benefits?

State YES or NO to the following:

- (a) Welfare (OAA, AB, APTD)
- (b) Food Stamps
- (c) Medicaid
- (d) GHURA Housing Assistance/Low Income Family Housing Subsidy
- (e) Other (Specify: _____)

CARD V - Question 48
Employment Status

- 1 - Working full-time
- 2 - Retired and working full-time
- 3 - Working part-time
- 4 - Retired and working part-time
- 5 - Unemployed or not working
- 6 - Retired and not working

CARD W - Question 48a
Occupation

Please state the appropriate record number.

- (0) Professional/Technical Usually requires a college degree or some other extra education. e.g. Teacher, Engineer, Nurse, X-Ray Technician, Computer Programmer.
- (1) Managerial e.g. Self-employed businessman, Office Supervisor, Clerk Supervisor III or IV, Administrative Secretary.
- (2) Clerical/Sales e.g. File Clerk, Clerk Typist I or II, Key punch Operator, Counter or Sales Clerk, Social Worker I or II, Secretary.
- (3) Craftsman/Foreman Usually requires some training beyond high school. e.g. Electrician, Carpenter, Drillpress Operator, Policeman, Fireman, Mechanic.
- (4) Services e.g. Waiter, Bartender, School Aide, Security Guard.
- (5) Manual Labor e.g. Construction, Truck Driver, Maintenance, Grounds Keeper.
- (6) Agricultural/Fishing
- (7) Homemaker (This occupation does not have a monetary income.)
- (8) Student (This occupation does not have a monetary income-exclude scholarships, loan and financial aid.)

CARD X - Question 48cIncome

Please state the appropriate number for each person in this household 16 years or older

Annual IncomeBi-Weekly

0 - no income	no income
1 - \$1 to \$3,000	\$1 to \$115
2 - \$3,001 - \$7,830	\$116 - \$301
3 - \$7,831 - \$11,130	\$302 - \$428
4 - \$11,131 - \$14,430	\$429 - \$555
5 - \$14,431 - \$17,730	\$556 - \$682
6 - \$17,731 - \$25,000	\$683 - \$962
7 - \$25,001 - \$35,000	\$963 - \$1,346
8 - \$35,000 or more	\$1,347 or more

CARD YType of Dwelling Place

- 01 - All concrete
- 02 - Concrete walls, tin roof
- 03 - Wood walls, tin roof
- 04 - Tin walls, tin roof
- 05 - Wood/tin, tin roof
- 06 - Mobile home
- 07 - Apartment
- 08 - Modular
- 09 - All wood

CARD Z - QUESTION 7bSaw a doctor and diagnosed:

- 00 less than 1 month
- 01-12 actual number of months
- 13 over 12 months
- 16 doesn't know when within 12 months

Saw a doctor but not diagnosed:

- 20 less than 1 month
- 21-32 actual number of months (1-12)
- 33 over 12 months
- 36 doesn't know when within 12 months

No doctor but self-diagnosed:

- 40 less than 1 month
- 41-52 actual number of months (1-12)
- 53 over 12 months
- 56 don't know when within 12 months

- 60 unknown, don't know or no answer

CARD AA - QUESTION 30a
Reason for depression, etc.

- 01 family problems
- 02 death/illness immediate family
- 03 death/illness relative/friends
- 04 divorce/separation (his/her own)
- 05 loss of job or job problems
- 06 moving
- 07 homesick
- 08 financial
- 09 medication side affect

CARD BB - QUESTION 49

- (01) = Myself
- (02) = Family
- (03) = Doctor
- (04) = Government (Local and Federal)
- (05) = Myself and Family
- (06) = Myself and Doctor
- (07) = Myself and Government
- (08) = Family and Doctor
- (09) = Family and Government
- (10) = Doctor and Government
- (11) = Myself, Family and Doctor
- (12) = Myself, Family and Government
- (13) = Family, Doctor and Government
- (14) = Myself, Doctor and Government
- (15) = All of the above

APPENDIX E
REFERENCES CITED

REFERENCES

- (1) Kasperbauer, Lawrence F. Health Needs Assessment of Northern Guam. Community Development Report No. 9, College of Agriculture and Life Sciences, University of Guam (1980).
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- (3) U.S. Bureau of the Census. U.S. Census of the Population: 1980. Vol. 1, Characteristics of the Population, Part 54, Guam, PC80-1-B-54, Chapter B, General Population Characteristics. U.S. Government Printing Office, Washington, D. C.
- (4) 1984-87 Guam Cooperative Extension Service Plan of Work. College of Agriculture and Life Sciences, University of Guam (1984).

APPENDIX F
PROJECT PLANNING TEAM

GHPDA/CDI PROJECT TEAM

A number of individuals played an active part in the planning and implementation of the islandwide health behavior survey project. The extent of involvement varied. However, all played significant roles.

GHPDA Personnel

Ms. Priscilla Maanao, former Administrator
Mr. Michael Duenas, Acting Administrator
Mr. Jose Mendiola, Deputy Administrator
Ms. Gloria Long, former Planner
Ms. Ulla-Katrina Craig, Planner
Ms. Cynthia Naval, Planner

CDI Personnel

Dr. Lawrence F. Kasperbauer, Project Leader/Director, CDI
Mr. Leonardo M. Rapadas, Data Collection Computer Entry Supervisor
Dr. Randall Workman, Sociology Extension Specialist

Special recognition and gratitude is due and extended to the team's support staff at GHPDA and CDI. Special thanks are in order for Ms. Anita Manglona for her meticulous management of personnel action paperwork and payroll matters for interviewers and data coders, in addition to her efforts in data preparation and entry (among other valuable tasks). Dangkulona Si Yuus Maase Ms. Arsenia Procalla for long hours of general assistance as CDI secretary throughout the project and, in particular, for drawing the numerous figures and typing this report. A special thanks is also in order for Extension Specialists Richard Prelosky, Laura Allman, Roberta Flores, and all others who helped in some way to complete the final revision and typing of this report.

The College and Extension administrators are gratefully acknowledged for their support of the project and their understanding of the complex processes involved in carrying out a study of this nature and magnitude.