

Chapter Four

INTRA PROJECT LEBANON

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Chapter Four

INTRA PROJECT LEBANON

The Analysis of the survey findings

Background

This report describes how community health centers target older persons in relation to selected established risk factors for Non Communicable Diseases namely smoking cessation, physical activity, diet, nutrition, high alcohol consumption and obesity control.

The report is based on the analysis of the information obtained from Questionnaires A and B used in the INTRA study and approved by HQ/Geneva.

Questionnaire A is intended to persons above age 50 years attending community health centers whereas Questionnaire B is intended to the subgroup of those patients that suffer from hypertension

The report is based on the information provided from the completion of 911 interviews of persons aged 50 years and above who are attending community health centers and other health facilities identified by sampling.

This report also analyzes the information obtained from the use of Questionnaire B approved by Geneva. Questionnaire B targets the older persons attending community health centers who suffer from Hypertension.

The submission of the report is based on information obtained from the completion of 350 interviews of persons aged 50 years and above, suffering from Hypertension, who are attending community health centers and other health facilities identified by sampling.

Discussion

The interviews were conducted in the health centers across Lebanon.

Seventy three centers were visited. These centers provide primary health care services to the population. The centers are either managed by the public sector, i.e. by the Ministry of Health or by the Ministry of Social Affairs, or are managed by the voluntary Non Governmental organizations, in cooperation with the Government. There are no private for profit health centers in the group.

These health centers are spread all over the country's administrative districts. Lebanon is divided into six mohafazats (Regions) and 26 qadas (districts). There was at least one health center from each qada except for the qada of Bcherre in the Mohaffazat of North Lebanon.

The suburbs of Beirut are technically in the qada of Baabda in Mount Lebanon and its relevant data should have been included under the Baabda qada.

The total number of active health centers and dispensaries in the Lebanon amount to 740. Thus the 73 centers selected represent approximately a 10% sample. These centers are all either public or managed by NGOs. The private clinics are not included, nor are the clinics that are a component of the hospitals.

The rate of interviewees per 100,000 population varied between 7 in the qada of Tyre and 141 in the qada of Baalbeck. **Overall this rate was 29 per 100,000 population.** One should note again that one qada of 17,000 population was not sampled. (Table 1)

The percentage of health centers that were targeted for the interviews ranged from a low of 1.85% in the qada of Tyre to a high of 27.5% in the qada of Minieh in North Lebanon. The overall average was around 10%.

A total of 911 individuals, above the age of 50 years, were interviewed, out of a population of 3.2 millions (according to the information provided by the household survey conducted by the Ministry of Social Affairs in 1996). The percentage of the Lebanese population above the age of 50 years is 17.9%.

The total population above the age of 50 years would be expected to be 572,800 persons. The rate of population interviewed in this study is about 160 per 100,000 above the age of 50 years.

Table 1- Distribution of respondents to Questionnaire A by administrative district in Lebanon

Mohaffazat			Population	Households	Interviewed	Health	% Health
Qada					/100000	Centers	centers
No of persons					Population	Clinics	in study
Interviewed							
Beirut		124	407402	99123	30.4	44	20.5
9	Zarif	15					
	Hamad	15					
	St Joseph	7					
	Hariri	22					
	Red Cross	4					
	Musseitbeh						
	MOSA	9					
	Hotel Dieu	20					
	Tamlis	20					
	Sabra (Camp)	12					
Mount Lebanon							
Suburbs of Beirut		18					
	Burj Barajneh Municipality	11					
Baabda		61	371881	79472	16.4	36	
6	ST Therese	17			21.2		
	Caritas	1					16.7
	Eldise	16					
	Hayat Hosp	4					
	Furn Chebak	20					
Aley		36	99947	23151	36.0	29	10.3
3	Amrousieh	4					
	Devpt Chouf	22					
	Aramoun	10					
Chouf		11	120472	26122	9.1	34	5.9
2	Jahlia	7					
	Chouf	4					
Kesrouane		77	123599	31226	62.3	27	14.8
4	Bteghrin	20					
	Zouk Municipality	20					
	Mar Boutros	23					
	Red Cross	14					
Jbeil		19	62407	13270	30.4	22	4.5
1	Amchit	19					

Metn	43		367151	88296	11.7	56	5.4
	Jisr Al bacha						
3	Caritas	3					
	Mar Mansour	6					
	Metn	34					
South Lebanon							
Jezzine	15		14626	4196	102.6	10	10
1	Red Cross	15					
Saida	42		138350	28123	30.4	56	7.1
4	Hariri	14					
	Caritas	8					
	Natacha Saad	4					
	Saida MOH	16					
Nabatieh	27		92363	19715	29.2	30	6.7
2	Taadod	11					
	Harees	16					
Marjeyoun	46		40879	9078	112.5	21	19.0
4	Marjayoun Hosp	21					
	Abbasieh	14					
	Khiam	10					
	Machgara Red Cross	1					
Tyre	9		130082	25673	6.9	54	1.9
1	Amel	9					
Bint Jbeil	56		52710	10896	106.2	25	24
6	Ainata	2					
	Khirbet Sellom	15					
	Bint Jbeil	6					
	Aita Chaab	3					
	Aitaroun	14					
	Red Cross						
	Aintaroun	16					
Hasbaya	12		19459	4555	61.7	10	10
1	MOH	12					
Beqa'a							
West Beqaa	64		55692	11196	114.9	19	21.1
4	Ragib Harb	20					
	Imam Sadr	6					
	Jib Jennin	19					
	Mashghara	19					
Zahleh	21		124336	26613	16.9	26	7.7
2	Thaalabia	13					
	MOH	8					
Baalbeck	16		157050	29841	10.2	53	5.7
3	Sheit	10					

	SDC Baalbeck	3					
	Red Cross	3					
Hermel	18		38974	6752	46.2	10	30
3	SDC	7					
	Red Cross	8					
	Islamic	3					
Rachaya Al Wadi	14		23839	4792	58.7	11	9.1
1	Red Cross	14					
The North							
Akkar	33		198174	33316	16.7	42	4.8
2	Qubeiyat	13					
	Kanj	20					
Tripoli	35		227858	43724	15.4	57	3.5
2	SDC Tripoli	20					
	Najdeh	15					
Zogharta	35		48974	10739	71.5	14	14.3
2	Rene Muawwad	15					
	Malta	20					
Koura	7		47541	10890	14.7	16	6.3
1	Koura	7					
Batroun	49		34816	7588	140.7	21	14.3
	3 St Remmoun	6					
	Batroun	41					
	Halta	2					
Minnieh	23		96416	16947	23.9	11	27.3
3	SDC Tripoli	3					
	SDC Minnieh	14					
	Beddawi (Camp)	6					
Totals	911	901	3094998	665294	29.4	734	9.9
Bcharre			16831	3612	0	6	
Totals with Bcharre	911		3111829	668906	29.3	740	

Source: MOSA 1996¹

It should be noted that the nation-wide survey, conducted across Lebanon in 1998 and released in 2001, has indicated that only 8.2% of the total number of ambulatory visits were made to clinics managed by

¹ Demographic characteristics and socio-economic situation in the qadas of Lebanon, October 2001, prepared by the Ministry of Social Affairs in collaboration with the Lebanese University and the United Nations Development Program UNDP

the public sector, and another 12.1% to the clinics run by the NGOs, while about 78% sought their ambulatory care in the private sector clinics² (Table 2)

Table 2- Proportional distribution of clients seeking outpatient care in Lebanon by the ownership of the outpatient facility

	Not applicable	Public	Private	NGO	Missing	Number med cons
Private clinic		2.9	96.1	1		5509
Hospital clinic		12.1	82.8	5.2		1894
Dispensary/HC		17.2	26.8	55.9	0.1	1779
Hospital		39.8	51	8.9	0.3	257
Home/School	100					205
Traditional healer			100			19
Missing			100			5
Total	2.1	8.2	77.5	12.1	0	9668

Medical consultations by type and sector of health facilities

Source: National Household Health Expenditures and utilization Survey 1999, Volume 3, Table 6.6

Relatively few studies have been conducted on the older population in Lebanon. Most were small scale^{3, 4, 5, 6}. A major study on the demographic, socio-economic, social and health aspects of the Elderly in Lebanon was conducted by Sibai (September 1998)⁷ at the request of the Ministry of Social Affairs of Lebanon. This study relied heavily on secondary in-depth analysis of the data of the “Population and Housing Survey (PHS) conducted by the Ministry in 1996. The sample of this survey was a national probability sample covering each of the country’s six muhafazats and 26 qadas and consisted of around 70,000 households (10% of the total population). Sibai abstracted the records of all individuals who were 60 years or older at the time of the survey.

² National Household Health Expenditures and Utilization survey 1999, Volume 3, October 2001, a survey conducted by the Ministry of Public Health, in collaboration with the Central Administration of Statistics, the World Health Organization and the World Bank

³ Sibai A. M. (1993). The elderly in Lebanon : health and social welfare ; *ESC WA Publications*.(Cited in Sibai 1998)

⁴ Sibai A. M. (1996). *Wartime determinants of cardiovascular and all-cause mortality among middle-aged and older populations in Beirut*. London School of Hygiene and Tropical Medicine. PhD Thesis, 1996. .(Cited in Sibai 1998)

⁵ Boulghourjian C. M. (1997). *Psychosocial, Health and Economic Aspects of an Elderly Armenian Population in Lebanon* (MS Thesis), American University of Beirut, Faculty of Health Sciences. .(Cited in Sibai 1998)

⁶ Beydoun H. & El Rashidi N. (1998). *Determinants of Mental Health among institutionalized elderly people in Beirut* ; American University of Beirut, Faculty of Health Sciences. .(Cited in Sibai 1998)

⁷ “The Elderly in Lebanon: Their demographic, socio-economic, social and health aspects”, Abla Sibai PhD, September 1998, Monograph

We shall also draw comparative data and information from the National Household Health expenditures and Utilization Survey (NHHES) that we noted earlier and that had been released in December 2001. This study used a national sample of some 6,500 households (or 33,000 individuals),

In summary therefore, we have to view the information provided by this survey as yet another study on the health situation of a sample of the population above the age of 50 years, who have attended some of the dispensaries and health centers across Lebanon over the period September 2002 through January 2003.

Findings

Profile of the respondents

I- Age and Gender

Almost half of the respondents are below the age of 65 years, i.e. between the age of 50-64 years. This is often considered “Middle age” rather than old age, in many countries. The proportion of the respondents above the age of 80 years is a little less than 7%.

Women constituted 60% overall of the entire group of respondents. While women made up close to 68% of the “50-54 years group”, the proportion of women tended to decrease with advancing age until it became 44% in the “85+ years age group”, which is quite unusual, since in most countries women tend to represent a larger percentage of the older population, particularly the “older old”.

We have calculated, for comparison, the gender ratio between men and women (Men/Women ratio) (Table 3). In this study, the overall M/F ratio was 0.68 for the overall study population (i.e. age brackets 50+ years), with a ratio of 1.29 in the 85+ years age bracket. This is compared with the gender ratio derived from the distribution of the older population (60+ years) in the Population Health Survey of 1996, where the overall gender ratio was 0.97, yet with a decrease from a ratio of 1, as age progressed to 0.85 in the 80+ years age bracket (Table 4).

Table 3- Distribution of respondents in INTRA project by gender and age (brackets)

Age/Gender	Women	Men	Totals	Percent Women	Percent age group	Gender Ratio M/F
50-54	80	38	118	67.8	13.0	0.48
55-59	79	39	118	66.9	13.0	0.49
60-64	112	72	184	60.9	20.2	0.64
65-69	106	82	188	56.4	20.6	0.77
70-74	69	63	132	52.3	14.5	0.91
75-79	66	44	110	60	12.1	0.67
80-84	23	22	45	51.1	4.9	0.96
85+	7	9	16	43.8	1.8	1.29
Totals	542	369	911	59.5	100	0.68

The respondents in our PHC center survey tended to have proportionately fewer members in the lower age groups. If we were to compare the percent of our respondents in the “50-64 years” bracket (46.2%), with the actual proportion of this age group in the entire Lebanese population (Table 4a), where the proportion of that age bracket is 62%, one deducts that our sample is skewed to the older age brackets.

Table 4a- Distribution of Lebanese population as per NHHEUS 1999 national study by gender and age (brackets)

Age bracket (years)	Men	Women	Totals	Percent Inter-group
50-54	3.9	4	4	22.5
55-59	3.6	3.7	3.6	20.2
60-64	3.4	3.4	3.4	19.1
65-69	2.8	2.7	2.7	15.2
70-74	2	2	2	11.2
75-79	0.9	1	0.9	5.1
80+	1.1	1.3	1.2	6.7
Totals	17.7	18.1	17.8	100

Table 4b- Distribution of the older population (60+ years) by age and gender, PHS 1996

Age bracket (years)	Men	Women	Totals	Gender Ratio M/F
60-64	33.2	33.1	33.2	0.96
65-69	27.3	26.3	26.8	1
70-74	19.8	19	19.4	1.01
75-79	9	9.3	9.2	0.93
80+	10.6	12.1	11.4	0.85
Totals	99.9	99.8	100	0.97

One should indicate in this respect that the Lebanese population has witnessed a clear demographic transition over the past few decades. The proportion of the older population (defined as over 60 years) has increased from a value of 7.7%⁸ in 1970 to 8.3% in 1984⁹.

Respondents from the more “urban” administrative areas tended to have a greater proportion in the “50-64 years” age group, and a lower proportion in the “80+years” age group, when compared to the more rural qadas. Beirut, and its suburbs, or the “Greater Beirut” area tended to have 58% in the 50-64 years age group as compared to a national average of 46% only. The urban qadas of Nabatieh, Tyre and to a lesser extent Koura and Minnieh had the “young olds” more represented proportionately to the “older olds” (Table 5a)

Table 5a- INTRA study- Distribution of the respondents by administrative division and age (in brackets)

Age/Gender	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Totals
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⁸ Ministry of Planning, 1970

⁹ Beirut 1984: A population and Health Survey- Zurayk and Armenian, Editors

Beirut	19	26	29	18	18	9	5	0	124
Mount Lebanon									
Suburbs of Beirut	3	1	4	1	1	2	1	1	14
Baabda	5	6	13	14	10	12	3	2	65
Aley	5	1	7	4	8	4	6	1	36
Chouf	3	1	1	2	3	1	0	0	11
Kesrouane	7	16	17	20	12	4	0	1	77
Jbeil	1	1	7	6	3	0	1	0	19
Metn	6	8	5	13	3	7	1	0	43
South Lebanon									
Jezzine	1	1	3	3	4	2	0	1	15
Saida	8	8	11	6	4	4	0	1	42
Nabatieh	3	2	4	5	6	5	2	0	27
Marjeyoun	5	4	5	5	6	3	4	0	32
Tyre	7	4	5	0	4	3	0	0	23
Bint Jbeil	4	5	8	18	3	12	5	1	56
Hasbaya	1	0	0	5	3	2	1	0	12
Beqa'a									
West Beqaa	11	5	15	13	6	8	2	4	64
Zahleh	4	2	0	7	4	3	0	1	21
Baalbeck	3	3	4	1	1	1	2	1	16
Hermel	2	2	5	2	3	2	1	1	18
Rachaya Al Wadi	4	0	3	1	4	1	0	1	14
The North									
Akkar	4	2	5	9	7	4	2	0	33
Tripoli	3	7	7	8	5	4	1	0	35
Zogharta	3	5	10	9	3	2	3	0	35
Koura	1	1	1	2	2	0	0	0	7
Batroun	4	4	7	8	7	14	5	0	49
Minnieh	1	3	8	8	2	1	0	0	23
Totals	118	118	184	188	132	110	45	16	911
Percent	13.0	13.0	20.2	20.6	14.5	12.1	4.9	1.8	100

According to Sibai (1998), the older population in Lebanon is not uniformly distributed across the administrative areas. In her study, the largest proportion of the old population resided in Mount Lebanon (38.6%) and the smallest in South Lebanon (7.3%). These figures represent proportionate percentages and reflect the concentration of the old population. Sibai further notes that 82.3% of the elderly group resides in urban areas (Table 5b)

Table 5b- Sibai study PHS 1996- Proportional distribution of the older population (60+ years) by administrative division and nature of residence

	Percent within the older population	% old with in total pop
Beirut	17.4	13.7
Mount Lebanon	38.6	10.8
North Lebanon	18.5	8.8
Douth Lebanon	7.3	8.3
Nabatieh	7.1	11
Beka'a	11.1	8.9
Totals	100	10.3
Urban	82.3	10.5
Rural	17.7	9.4
Totals	100	10.3

II- Marital status

About two thirds of the entire group of respondents were still married; another quarter of the clients were widowed 26.6%. As expected, the proportion of widowed gradually and continuously increased from 11% in the 50-54 years age bracket, to 50% in the 85+ age group, with a corresponding decrease in the “Married” group (Table 6a)

Table 6a- INTRA study- Distribution of the respondents by marital status and age (in brackets)

Marital Status	Single	Married	Separated Divorced	Widowed	Totals	% widowed
50-54	11	92	2	13	118	11.0
55-59	10	86	3	19	118	16.1
60-64	12	133	1	38	184	20.7
65-69	14	124	4	46	188	24.5
70-74	6	72	3	51	132	38.6
75-79	8	55	2	45	110	40.9
80-84	4	18	1	22	45	48.9
85+	0	8	0	8	16	50.0
Totals	65	588	16	242	911	26.6
Percent	7.1	64.5	1.8	26.6	100	26.6

“The presence of a spouse is one of the most important sources of social support that determines the well being of an old person” (Sibai). It is well known that marriage has a protective effect and that it tends to increase longevity and improve health status¹⁰. The improvement of health status associated with marriage has been studied and documented since the 1800s. If one were to compare the data from the national PHS survey of 1996 with our current study, one would notice that the overall proportion of

¹⁰ Goldman, 1995

singles was 7.1% in this current study versus 3.2% in the PHS 1996 study. The percentage of widowed compares 26.6% with 8.6% in the 1996 study (Table 6b). This could be due to the fact that the current study includes a substantial proportion of men and women between the ages of 50-59 years who were not included in the 1996 national study.

Table 6b- Sibai study PHS 1996- Proportional distribution of the older population (60+ years) by marital status and age (in Brackets)

Men	60-64 years	65-69 yrs	70-74 yrs	75-79 yrs	80+ yrs	Totals
Single	3.5	3.2	2.8	0.3	0.2	3.2
Married	91.3	89.9	86.1	81.8	67.7	86.5
Widowed	3.1	5.3	9.6	12.8	28.9	8.6
Other	2.1	1.6	1.5	5.1	3.2	1.7
Totals	100	100	100	100	100	100

Women	60-64 years	65-69 yrs	70-74 yrs	75-79 yrs	80+ yrs	Totals
Single	7.1	7.5	6.3	6.3	5.7	6.8
Married	63.2	51.6	40.5	30.7	16.8	47.2
Widowed	28.4	39.6	52.2	62.4	77	45
Other	1.3	1.3	1	0.6	0.5	1
Totals	100	100	100	100	100	100

III- Living situation

All the respondents have been living either alone (13%), with their spouses (20%), or with their spouse and children and grand-children. Only 4.7% were living with relatives and non-family members. There was no reported of clients living in geriatric institutions amongst the respondents who were seeking care at the health center (Table 7).

With advancing age, the proportion of respondents living alone decreased, as well as that those living with their spouses, while the proportion living with children and grand children increased. It has also been reported (Sibai 1998) that with ageing and increasing morbidity, the older population tends to reside with their children

Table 7- INTRA study- Distribution of the respondents by living situation and age (in brackets)

Live - In	Alone	Spouse	Child+ G-child	Spouse+ Children	Relatives Parents	Totals
50-54	6	12	15	77	8	118
55-59	9	16	20	66	7	118
60-64	19	37	29	92	7	184
65-69	32	44	31	76	5	188
70-74	23	28	35	39	7	132
75-79	18	29	35	23	5	110
80-84	8	11	15	7	4	45
85+	4	5	4	3	0	16
Totals	119	182	184	383	43	911
Percent	13.1	20.0	20.2	42.0	4.7	100

IV- Education

The overall educational level of the entire group of respondents is shown in table 8a below. Surprisingly almost half 49% of the group had no formal education whatsoever, while only 15% had more than a mere 10 years or higher of education. This is unusual for a country like Lebanon.

Upon looking at distribution across the administrative areas, the urban-rural shift is evident. While the urban areas such as Greater Beirut, Greater Saida and Greater Tripoli have a lower proportion in the “no education” age, more rural areas have a far greater proportion of the no formal education group such as the Chouf, Jbeil, Nabatieh, Bint Jbeil, Zahleh, Hermel.

Likewise, and as expected, the proportion of respondents that have achieved more than 10 years of education was found to be higher in the urban conglomerations.

Table 8a- INTRA study- Distribution of the respondents by educational level and administrative district

Education	None	< 3 yrs	3-5 yrs	6-10 yrs	> 10 yrs	Totals	% No ed	% 10+ yrs
Beirut	41	10	22	20	31	124	33.1	25.0
Mount Lebanon								
Suburbs of Beirut	3	3	2	3	3	14	21.4	21.4
Baabda	28	7	8	13	9	65	43.1	13.8
Aley	14	5	3	7	7	36	38.9	19.4
Chouf	8	0	0	2	1	11	72.7	9.1
Kesrouane	39	9	4	8	17	77	50.6	22.1
Jbeil	12	0	2	2	3	19	63.2	15.8
Metn	16	5	5	7	10	43	37.2	23.3
South Lebanon								
Jezzine	5	2	0	4	4	15	33.3	26.7
Saida	17	2	10	6	7	42	40.5	16.7
Nabatieh	21	1	2	3	0	27	77.8	0
Marjeyoun	16	3	8	3	2	32	50	6.3
Tyre	9	1	1	7	5	23	39.1	21.7
Bint Jbeil	38	4	2	7	5	56	67.9	8.9
Hasbaya	5	1	5	1	0	12	41.7	0
Beqa'a								
West Beqaa	52	1	4	6	1	64	81.3	1.6
Zahleh	17	1	1	1	1	21	81.0	4.8
Baalbeck	9	1	3	0	3	16	56.3	18.8
Hermel	12	1	1	3	1	18	66.7	5.6
Rachaya Al Wadi	8	2	2	2	0	14	57.1	0

The North

Akkar	20	0	4	8	1	33	60.6	3.0
Tripoli	17	3	4	3	8	35	48.6	22.9
Zogharta	12	8	1	7	7	35	34.3	20.0
Koura	2	2	0	0	3	7	28.6	42.9
Batroun	16	5	10	13	5	49	32.7	10.2
Minnieh	7	8	6	2	0	23	30.4	0
Totals	444	85	110	138	134	911	48.7	14.7
Percent	48.7	9.3	12.1	15.1	14.7	100	48.7	14.7

The educational level varied also with gender and age in the national study of 1998 (Sibai). In general, women and the older group were more disadvantaged as far as educational level is concerned. Illiteracy was very high amongst women (59.6%) particularly those aged 75 years or more (71.0%). Few of the population had reached university level.(Table 8b)

Table 8b- Sibai study PHS 1996- Proportional distribution of the older population (60+ years) by educational level and age (in Brackets)

	Illiterate	Informal Primary 3-6 yrs	Intermediate Secondary 7-12 yrs	University Higher study 12+ yrs
Men 60-74 years	29.2	49.9	14.8	6
Women 60-74 years	56.5	30.8	11.4	1.3
Men 75+ years	40.5	44.3	10.6	4.5
Women 75+ years	71	22.3	6.1	0.6
Men Total	31.4	48.8	14	5.7
Women Total	59.6	29	10.3	1.1

The pattern of education in the INTRA study is unlike the pattern described in the national sample conducted by the NHHEUS in 1999. The proportional distribution of illiterate in the population above the age of 50 years is detailed in Table 8 c below for both men and women. Whereas the overall proportion of illiterate has been found to be 49% in the INTRA study of 2002, this proportion has not been reported in the NHHEUS study even for advancing age. Only amongst women aged 60 years and above do we find comparable rates.

Similarly the proportion of respondents who had completed 10 years or more of formal education in the INTRA study was only 15%. This is also in contrast with the findings of the NHHEUS study if one were to add up the categories of those who have completed secondary, university and higher studies. The cut off point of 10 years is equivalent to the intermediate cycle of education.

Table 8c- NHHEUS study 1999- Proportional distribution of the older population (50+ years) by educational level and age (in Brackets)

Educational level %	Illiterate	Read/Write Preliminary	Intermediate Secondary	University Higher Studies	Totals
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Men								
50-54	6.5	14.2	31	15.9	14.8	13	4.3	99.7
55-59	11.6	20.3	29.3	17.4	10.1	8.5	2.8	100
60-64	18.8	24.8	29.3	11.6	8.2	2.8	0.9	96.4
65-69	24.4	26.9	24	10.4	8.8	4.5	0.7	99.7
70+ years	28.1	35.5	18.9	6.7	6.7	3.1	1	100
Women								
50-54	29.7	13.3	24.8	16.8	10.2	4.7	0.5	100
55-59	33.8	15.3	23	17	7.9	2.2	0.5	99.7
60-64	46	16.2	19.4	10.2	5.9	2.2		99.9
65-69	54	18.3	17.6	5.9	2.8	1.1	0.2	99.9
70+ years	61.3	17.6	11.3	6.1	3	0.6	0.1	100
Men and Women								
50-54	18.7	13.7	27.7	16.3	12.4	8.8	2.3	99.9
55-59	22.8	17.8	26.1	17.2	9	5.4	1.7	100
60-64	32.8	20.4	24.2	10.9	7.1	4.2	0.4	100
65-69	39.5	22.5	20.7	8.1	5.8	2.8	0.4	99.8
70+ years	44.5	26.7	15.1	6.4	4.9	1.9	0.6	100.1

V- Employment

More than three quarters (77.9%) of the interviewed population were not working at the time of the interview. The percentage of unemployment ranged between 57.1% in the suburbs of Beirut to 97% in the West Beqa'a. The most frequent employment was that of a worker (unskilled) 9.3% probably employed on a daily wage basis. (Table 9a), followed by farmers at 4.4%

Table 9a- INTRA study- Distribution of the respondents by nature of employment and administrative district

	Not working	Employee	Farming	Merchant	Worker	Taxi driver	Grocer	Dress maker	Total	% no work
Beirut	72	8			41	3			124	58.1
Mount Lebanon										
Suburbs of										
Beirut	8	2		1	2	1			14	57.1
Baabda	55	2		1	5	1		1	65	84.6
Aley	27	1	4		4				36	75
Chouf	10	1							11	90.9
Kesrouane	60	6			3	1	5	2	77	77.9
Jbeil	17						2		19	89.5
Metn	32	3		1	1	1	4	1	43	74.4
South Lebanon										
Jezzine	12		2		1				15	80
Saida	25	3	1	6	5	2			42	59.5

Nabatieh	22	1	3		1				27	81.5
Marjeyoun	21		7		3		1		32	65.6
Tyre	17	2		1	3				23	73.9
Bint Jbeil	47	1	5	1	2				56	83.9
Hasbaya	9		2		1				12	75
Beqa'a										
West Beqaa	62		2						64	96.9
Zahleh	21								21	100
Baalbeck	12		2		2				16	75
Hermel	16	1		1					18	88.9
Rachaya Al Wadi	11		1	1			1		14	78.6
The North										
Akkar	29	1	3						33	87.9
Tripoli	28				5		1	1	35	80
Zogharta	27		2		4	1	1		35	77.1
Koura	5				2				7	71.4
Batroun	43	1	5						49	87.8
Minnieh	22		1						23	95.7
Totals	710	33	40	13	85	10	14	6	911	77.9

Gainful employment declines with advancing age, particularly since the age at retirement in Lebanon is 60 years or in some instances 65. However, a significant proportion of men and women continue to work after the age of 60 years as shown in table 9b below, adapted from the 1998 Sibai study. In that study 47% of men were still working even after the age of 75 years. Women had an employment rate of only 7 3.7% because this was coded as formal employment, not work in the house or in home economics activities. One should also note that 14% of men of all ages were self sufficient and 18% had a retirement scheme. This is important for dependency in old age. Please see section below

Table 9b- Sibai study PHS 1996- Proportional distribution of the older population (60+ years) by employment status and age (in Brackets)

Men	60-64 years	65-74 yrs	75+ yrs	Totals
Still working	68.3	43.4	19.4	46.9
Retired	11.6	20.8	21.5	17.9
Others	9.4	17.8	33.4	18.1
Unemployed	3.2	3.8	2.9	3.4
Self sufficient	7.5	14.2	22.8	13.7
Totals	100	100	100	100
Women	60-64 years	65-74 yrs	75+ yrs	Totals
Still working	6.7	2.8	0.9	3.7
Retired	0.6	0.8	0.9	0.7
Others	91.4	94.2	95.3	93.6
Unemployed	0.2	0.1	0.2	0.1
Self sufficient	1.1	2.1	2.7	1.9

Totals 100 100 100 100

The respondents in the INTRA study had an employment rate of only 22%! The national study carried out in 1999 (Table 9c) indicated an employment rate of more than 50% for those in the age bracket 50-54 years. Even at 70 years and above 15% were still employed and working! The high proportion of unemployed in the INTRA study is unusual.

In the NHHEUS women reported an employment rate of 15+% in the age group 50-59 years, and of 10% in the age bracket 60-64 years. It should be noted that women are often not identified as employed unless they work in a formal institution and not at home, where the majority usually work.

Table 9c- NHHEUS study 1999- Proportional distribution of the older population (60+ years) by employment status and age (in Brackets)

Employment	Men	Women	Totals
50-54	88.6	15.7	50.5
55-59	78.2	15.2	46.5
60-64	71.2	9.7	39.6
65-69	44.2	5	24.2
70+ years	26.6	3.3	15.1

VI- Income

The respondents were not dependent on charity or on government subsidies for their living. Only 5.3% indicated that their source of income was “welfare”.

Forty percent of the clients were either self supporting or supported by their spouses, while 55% were deriving income from their family and children and grand children. That latter proportion increased with advancing age, as would be expected (Table 10a).

Table 10a- INTRA study- Distribution of the respondents by source of income and age (in brackets)

Income	Retirement Pension	Personal funds	Employment Income	Spouse	Family Children	Children	Welfare	Noresponse	Totals
50-54	5	2	38	32	19	16	5	1	118
55-59	6	3	35	21	17	29	6	1	118
60-64	19	8	33	18	37	59	7	3	184
65-69	23	8	29	14	49	54	10	1	188
70-74	10	5	14	4	36	50	10	3	132
75-79	3	4	8	2	33	54	5	1	100
80-84	4	2	2	0	9	23	4	1	39
85+	1	0	1	0	3	10	1		16
Totals	71	32	160	91	203	295	48	11	901
Percent	7.8	3.5	17.6	10.0	22.3	32.4	5.3	1.2	100

Pension plans differ in Lebanon depending on the sector of activity. For those employed in the public sector, retirement is at age 64 years. The employee can either receive a lump sum end-of-service indemnity or opt for a retirement monthly pay as long as he/she is alive (A proportion continues after his/her death to the spouse). In this case, the employee continues to receive his pre-retirement salary less allowances such as transport or duty allowances). For the employees who opt for an end-of-service lump sum, he/she is paid one month for every year of service for the first 10 years, plus two months for the additional years after the first 10 years. The monthly pay is based on the basic salary alone with no allowances.

The employees in the private sector receive their end-of-service from the National Social security Fund to which the employee and the employer have contributed all along the employment history. Independent workers in the private sector have no indemnity or insurance, unless they are part of the professional mutual funds that have been recently established for physicians, engineers, lawyers and other professional groups.

Seeking health care is affected by the insurance status of the population, as well as to its income. The NHHEUS study of 1999, reported that about 50% of men and women aged 50-54 years were insured. This proportion does not decrease markedly with advancing age since it remains about 41% for those men and women aged 70 years and above (Table 10b). It is likely that this population is covered by one of the public funds that are operational in Lebanon, namely the National Social Security System, the Cooperative of civil servants or the coverage for the uniformed. This coverage could either be for their own selves (because of their status) or as beneficiaries and dependents of current younger enrollees such as sons and daughters.

Table 10b- NHHEUS 1999 study- Distribution of the respondents by insurance status, gender and age (in brackets)

Insurance status	Insured	Not insured	Missing	Total	Sample
Men					
50-54	52.5	43.4	4.1	100	633
55-59	49.6	48.2	2.2	100	553
60-64	46.5	51.7	1.8	100	525
65-69	45.3	52.6	2.1	100	435
70+ years	41.5	57.4	1.1	100	753
Women					
50-54	48	51.2	0.8	100	694
55-59	44.4	55.2	0.4	100	562
60-64	41.4	57	1.6	100	557
65-69	43.2	55.2	1.6	100	450
70+ years	41.1	58.3	0.6	100	732
Men and Women					
50-54	50.1	47.5	2.4	100	1327
55-59	47	51.8	1.2	100	1115
60-64	43.9	54.4	1.7	100	1081
65-69	44.3	53.9	1.8	100	885
70+ years	41.3	57.8	0.9	100	1485

The Primary health care facility

VII- Access to the clinic (Transport)

Close to half the respondents had come to the clinic walking. The frequency of clients walking to the clinic ranged from a low of 17% in Zghorta to a high of 83% in Minnieh, both in North Lebanon. Interestingly in the regions when clients did not walk, they came to the clinic predominantly through private transportation. The overall usage of public transportation was a mere 5%, while private transport was used in 30% and taxi in another 17%. These figures indicate that transportation and distance to the clinic do not appear to present a difficulty to the access of the facility (Table 11).

Table 11- INTRA study- Distribution of the respondents by transport to the clinic and administrative division

	Public Walking transport	Private transport	Taxi	Others	Total	% Walking
Beirut	58	16	16	34	124	46.8
Mount Lebanon						
Suburbs of						
Beirut	9	1	4		14	64.3
Baabda	40	1	12	12	65	61.5
Aley	21	4	9	2	36	58.3
Chouf	6		3	2	11	54.5
Kesrouane	33	7	26	11	77	42.9
Jbeil	6		10	3	19	31.6
Metn	11	3	24	5	43	25.6
South Lebanon						
Jezzine	3	1	7	4	15	20
Saida	14	1	14	13	42	33.3
Nabatieh	6		7	14	27	22.2
Marjeyoun	6	4	19	2	32	18.8
Tyre	12		6	5	23	52.2
Bint Jbeil	43		10	3	56	76.8
Hasbaya	6		6		12	50
Beqa'a						
West Beqaa	45	1	15	3	64	70.3
Zahleh	10		5	6	21	47.6
Baalbeck	7	1	5	3	16	43.8
Hermel	12		3	3	18	66.7
Rachaya Al Wadi	8	1	3	2	14	57.1
The North						
Akkar	6	5	14	8	33	18.2

Tripoli	25		2	8		35	71.4
Zogharta	6		16	12	1	35	17.1
Koura	4		2	1		7	57.1
Batroun	20	1	27	1		49	40.8
Minnieh	19		2	2		23	82.6
Totals	436	47	267	159	2	911	47.9

VIII- Access to the clinic in minutes

Three quarters of the clients reached the clinic within 15 minutes and 95% within 30 minutes. Most of the clients who took longer to reach the clinic were in urban areas where traffic jams may be responsible for the delay for those who are accessing the clinic by car, rather than by walking (Table 12).

When asked if the client has faced problems in getting to the clinic on the day of the interview, 66% mentioned that they have had no difficulty whatsoever. However 8% did mention the lack of transport as an issue, 6% distance, 10% the fee and 7% the fee and the transport. It must be remembered that these clinics are essentially either public clinics where fees are at a minimum if any or are managed by voluntary Not-For-Profit NGOs that require a minimal fee.

Having reached the clinic, the majority 46% of the clients responded that they had to wait only few minutes to be seen, and another 43% stated that did not have to wait for long. A little more than 10% said that they did have to wait "long", the majority being from the capital.

Table 12- INTRA study- Distribution of the respondents by time to reach the clinic and administrative division

	0-15	16-30	31-45	46-60	> 60	Total	% within 15 minutes	% within 30 minutes
Beirut	77	37	7	2	1	124	62.1	91.9
Mount Lebanon								
Suburbs of								
Beirut	8	5	1			14	57.1	92.9
Baabda	45	18		2		65	69.2	96.9
Aley	30	6				36	83.3	100
Chouf	10	1				11	90.9	100
Kesrouane	61	15	1			77	79.2	98.7
Jbeil	11	8				19	57.9	100
Metn	17	23	1	1	1	43	39.5	93.0
South Lebanon								
Jezzine	11	3	1			15	73.3	93.3
Saida	33	6	2	1		42	78.6	92.9
Nabatieh	16	8	1	2		27	59.3	88.9
Marjeyoun	15	10	6		1	32	46.9	78.1

Tyre	21	2				23	91.3	100
Bint Jbeil	52	4				56	92.9	100
Hasbaya	6	5	1			12	50	91.7

Beqa'a

West Beqaa	54	9	1			64	84.4	98.4
Zahleh	17	3		1		21	80.9	95.2
Baalbeck	11	3		2		16	68.8	87.5
Hermel	14	4				18	77.8	100
Rachaya Al Wadi	12	2				14	85.7	100

The North

Akkar	27	6				33	81.8	100
Tripoli	27	3	3	2		35	77.1	85.7
Zogharta	21	7	2	5		35	60	80
Koura	4	2			1	7	57.1	85.7
Batroun	41	8				49	83.7	100
Minnieh	15	6		2		23	65.2	91.3

Totals	656	204	25	19	7	911	72.0	94.4
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IX- Reasons for the visit

Overall, 44% of the clients did visit the clinic on the day of the interview because they felt ill. More than one third (36.3%) came to check and follow up on one of the non-communicable diseases (Diabetes, Hypertension, Cardiac, ophthalmology), 17% came for a check up. A small proportion 3% did come for a change of dressing, an injection, a physiotherapy session or to have an x-ray examination (Table 13a). This is a high percentage for Non-Communicable diseases.

Table 13a- INTRA study- Distribution of the respondents by reasons to seek care at the clinic and administrative division

	Check		Renewal		Cardiac	Cardiac+	Eye	Diabetes	Others	Total	%
	Felt ill	up	Diabetes	High BP							
				Follow up		HBP		+ HBP			
Beirut	57	22	3	4	34	2	1		1	124	
Mount Lebanon											
Suburbs of											
Beirut	4	3		2	5					14	
Baabda	27	22	2	7	6				1	65	
Aley	22	6		2	3		2		1	36	
Chouf	7	3		1						11	

Kesrouane	34	27	1	3	11				1	77
Jbeil	11	6	1		1					19
Metn	22	7	2	2	9		1			43
South Lebanon										
Jezzine		1		1	2	1		10		15
Saida	12	6	1		19			1	3	42
Nabatieh	9		1	2	13				2	27
Marjeyoun	13	9		1	3				2	32
Tyre	5	3	4		6		1			23
Bint Jbeil	26	5	1	9	14				1	56
Hasbaya	4	1			7					12
Beqa'a										
West Beqaa	44	9	1	6	3				1	64
Zahleh	13	2		1	4				1	21
Baalbeck	6			1	3	1		2	3	16
Hermel	8	1		2	7					18
Rachaya Al Wadi	3	3	1	2	4				1	14
The North										
Akkar	10	8	1	1	12				1	33
Tripoli	17	3	2	8					5	35
Zogharta	8	6		1	15				5	35
Koura	5			2						7
Batroun	23			5	17				1	49
Minnieh	9			9	1	1			3	23
Totals	399	153	21	72	199	5	5	13	16	28

In the national NHHEUS study, the interviewers asked men and women if they had experienced a health problem in the last month prior to the date of the interview. Table 13b indicates that about 30% of men and 44% of women aged 50-54 years did experience a health problem. That proportion continued to increase over the years to reach 41% of men and 48% of women aged 70 years and above.

Table 13b- NHHEUS study 1999- Percentage of the respondents who had a health problem last month by gender and age in brackets

Health problem % Last month	Men	Women	Totals	Sample
50-54	29.5	44.4	37.3	1327
55-59	31.5	44.3	37.9	1115
60-64	35.1	46.9	41.2	1081

65-69	36.2	48.9	42.7	885
70+ years	41.1	47.9	44.4	1485

Surveys related to morbidity in the old population

(adapted from the review by Dr Sibai, 1998)

It has been established that the complex interplay between demographic changes, risk factors and therapeutic interventions is the one that influences morbidity and mortality patterns in a given population.

Risk factors play an important role in the health and epidemiological transitions. Changes in the prevalence of exposure to risk factors like cigarette smoking, alcohol drinking and physical exercise alter significantly age-specific morbidity and mortality rates. Access to and effectiveness of therapeutic measures influence both the prevalence and case-fatality rates associated with certain non-communicable illnesses.

The elderly suffer a multitude of co-morbid conditions, both infectious and chronic. It is accepted clinically that infections in the elderly occur with increased frequency and are a common cause of high morbidity and mortality. The main biological explanations for this poor response to infection are the deterioration of the inflammatory and immune response with age and the age-associated diseases, which enhance susceptibility to infection

Although elderly people are significantly more susceptible to infectious disease than the young, the leading causes of morbidity as reported through household interviews are chronic conditions, mainly hypertension, heart disease and diabetes¹¹.

Even though most morbidity is often non-fatal, it detracts greatly from the comfort and the quality of life among the elderly. Arthritis, for example, is the leading cause of disability among the elderly. Other conditions that compromise the well being of the elderly include hearing, orthopedic and visual impairments¹².

In Lebanon, no cause-specific morbidity data is available on a large scale. However, two surveys which were conducted in the Beirut area during the years 1983-84 and 1992-93 may shed some light on the health status and needs of its ageing population¹³, ¹⁴. The findings of these two surveys with respect to morbidity is summarized for the older age groups in the table 14 below.

It was shown that hypertension is the leading cause of morbidity among elderly men and women both in 1983-84 and 1992-93. However, the proportion of elderly people suffering from hypertension has been somehow reduced especially among the older old (70 years or more). For instance, whereas 35.1% of women in this age category were reported hypertensive in 1984, only 29.9% of them suffered from this condition in 1992-93. This may be due to an improvement in lifestyle, although biases in self-reporting may also be present.

In addition, heart disease was the second most common cause of morbidity in the two surveys, followed by diabetes and hyper-cholesterolemia. Arthritis was a significant burden for elderly women in 1984 and its prevalence was more pronounced in 1992-93 among this subgroup. Other diseases of importance included back pain, cataract, glaucoma, ulcer and kidney problems.

¹¹ DHHS, 1985

¹² Brody 1988

¹³ Khlat and Armenian 1984

¹⁴ Nuwayhid et al 1997

The two studies were not directed specifically towards the elderly population, and are limited by the small-scale sample of the elderly as well as reporting biases. A study directed specifically towards the elderly which includes clinical assessment and measurements is needed for a better appraisal of the health status and needs of our elderly population.

Table 14- Prevalence of selected chronic conditions among men and women aged 60 years and over, Beirut 1983-84 and 1992-93

	1983-84*	1983-84*	1983-84*	1983-84*	1992-93	1992-93	1992-93	1992-93
	60-69 years	60-69 yrs	70+ years	70+ years	60-69 yrs	60-69 yrs	70+ years	70+ yrs
	Men	Women	Men	Women	Men	Women	Men	Women
Hypertension	20.5	31	23.7	35.1	19.1	29.5	18.7	29.9
Heart Disease	18.4	14.2	21.2	25.8	15	16.4	24.1	24.4
Diabetes	12.7	15.8	13.5	15.5	12.5	17.8	15.5	14.2
Hyper-cholesterolemia	5.7	12	9	7	10.1	15.3	8	11.7
Arthritis	4.8	16.5	5.3	14.4	6.8	19.7	9.6	20.8
Back Pain	5.7	12.3	4.9	8.9	7.6	18	5.9	16.2
Cataract	3	3.5	11.8	10.7	2.7	4.9	8	9.6
Glaucoma	0.3	0.9	2.4	1.5	0.3	1.6	2.7	4.6
Ulcer	6.6	4.1	6.9	3.7	7.6	4.6	4.3	3
Kidney problems	6.9	6.3	2.9	1.8	3	6	4.3	4.6
Asthma	2.1	2.2	3.7	2.2	1.4	3.3	4.8	3
Anemia	0.9	3.2	1.2	1.5	1.1	4.7	2.1	7.6
Mental problems	0.9	1.3	0.4	0	0.3	1.1	0.5	1.5
Cancer	0.3	0	0	1.1	1.1	0	0.5	0.5

Khlat, M and Armenian, H, 1984

Nuwayhid, I., Sibai, A., Adib S., and Shaar

K.H., 1997

Other surveys on Risk factors

A cross sectional survey was performed on a cluster sample of three communities Aisha Bakhar, AUB community and Hamana, a semi urban village east of Beirut. 2,704 middle aged (30-64) years and older Lebanese (above 65 years) constituted the study population. The objective of the study was to assess the prevalence of cardiovascular risk factors, plasma total cholesterol, low density lipoproteins, high density lipoproteins, triglycerides, non-insulin dependent diabetes mellitus, diagnosed and undiagnosed, impaired glucose tolerance, obesity, smoking and family history among adult Lebanese.

The methods used consisted of demographic data; consanguinity and past medical and family history were collected. Height, weight, waist and hip ratio circumferences and blood pressure were measured. BMI and WHR were computed. Fasting venous blood samples were collected and serum concentrations of TC, LDL-C, HDL-C, TG, FBG were determined and classified according to the WHO criteria. TC/HDL-C ratio were computed.

Altogether the results of 2,518 subjects (1,138 men, 1,380 women) are reported. Of these 2,117 (84%) were middle aged 30-64 years (959 M and 1,158 F) and 401 (16%) were elderly (179 M, 222 F). The prevalence of hyper-cholesterolemia (TC \geq 240 mg/dl) was 18% and 23% in middle aged men and women respectively, ranging from 17 to 33% in the three communities. Strikingly 47% of middle

aged men had very low levels of HDL-C (<35 mg/dl) as compared to 14.7% in women ($p < 0.001$, $X^2 = 26.5$) and the mean HDL-C was 36 +/- 9 mg/dl and 47 +/- 12 mg/dl for men and women respectively. Age and education had no effect on HDL-C levels in both men and women. Also 67% of men and 37% of women had TC/HDL-C ratios that were high (≥ 5.0). The low HDL-C levels among men appear to be caused, at least partly by a genetic factor. Prevalence of high TG levels (≥ 160 mg/dl) tended to be high in both men (47%) and women (32%).

The overall prevalence of diagnosed NIDDM was 7.4% in men and 7.8% in women as compared to 24% and 25% in elderly men and women. Undiagnosed NIDDM was 2.8%, 2.2%, 5%, 5% and glucose intolerance was 5.1%, 4.6%, 8.4% and 15.8% among the four groups respectively. Total diabetes prevalence was 10.2% and 9.9% among middle aged men and women and 28.5% and 30.2% among elderly men and women respectively. Obesity (BMI ≥ 27 M; ≥ 25 F) was high in both middle aged men (55%) and women (67%) but when obesity was computed as WHT > 1.0 M, > 0.9 F the prevalence was 8.2% in men and 12.3% in women. Men smoked more than women 37% versus 27% ($p < 0.001$) and smoking pattern was similar in the three communities. Positive family history for NIDDM and hypercholesterolemia was 32% and 20% in middle aged men and 43% and 25% in middle aged women.

This study provided the first reliable prevalence estimation of plasma lipids, lipoproteins, diagnosed and undiagnosed NIDDM and other CVD risk factors according to WHO criteria in Lebanon. The high prevalence of lipids and diabetes and the synergistic effect between the observed high frequency of obesity and cigarette smoking will have far reaching serious implications for the future trends in coronary heart diseases especially among middle aged men in Lebanon¹⁵.

The prevalence of obesity varied according to the criteria used in relation to the geographical location. Using BMI as a criterion, approximately 70% of individuals aged > 34 years were considered obese. When percent fat was used as a criterion for obesity, 47.3% of the Lebanese were classified as obese (25.5% M, 69.1% F). Average fat intake was high in the total population (approximately 35% of dietary energy) and obesity was generally more prevalent in the lower social classes and among the less educated. It appears that obesity prevalence, reported in relation to percent body fat seems to differ from that using BMI. International data using this newly published index for obesity are needed for comparison and intervention activities aiming at lowering fat intake in the Lebanese population should be implemented¹⁶.

In a new study, about to be published, from the American University of Beirut, information on the prevalence of risk factors was obtained from 2,846 face-to-face interviews in the city of Beirut. The population was in the age group 25-64 years. The assessment of risk factors levels was obtained through the use of the MONICA questionnaire, and focused on smoking, lack of physical activity and inappropriate nutritional habits. Smoking was prevalent in 42% of the male population, and 31% of the female population. Within the male smoker group, 42% were considered as heavy smokers (smoke more than one pack of cigarettes per day), while in the comparable female group, the proportion was 20%.

About two third of the men (63%) and 71% of women admitted not performing any physical activity, even as light as walking! A little more than one third of men (36%) and 39% of women were considered obese (BMI measurements).

¹⁵ Salti, Khogali, Alam, Abu Haydar and Masri, 1994

¹⁶ Hwalla-Baba, Shaar, Adra"- 1998

These findings were found against a background information that more than 81% of the population was very much aware of the harmful effects of smoking; More than 86% did know that regular exercise helps to prevent heart disease, and more than 80% knew of the harmful consequences of obesity¹⁷

X- Smoking

Smoking has been addressed in this survey from several angles, due to the importance of smoking cessation programs and the priority these programs should have in Primary Health care centers, across the country.

Overall, about a quarter of the surveyed population are current smokers (25.6%). This proportion varies from a low of 10.5% in the population above 50 years surveyed in the qada of Jbeil to a high of 50% in the qada of Baalbeck.

Former smokers constitute another 19.4% of the population surveyed. Of interest is the finding that 47.4% of the respondents in the qada of Jbeil were former smokers. This was the qada with the lowest rate of current smokers.

Overall a little more than half the respondents had never smoked (54.8%). This ranged from a low of 31.3% in the qada of Baalbeck to a high of 81% in the qada of Zahleh. (Table 15a)

Table 15a- INTRA study- Distribution of the respondents by status of smoking and administrative division

	Current smokers	Total	% smokers	Former smokers	% former smokers	Never smoked	% Never smoked
Beirut	36	124	29.0	28	22.6	58	46.8
Mount Lebanon							
Suburbs of							
Beirut	3	14	21.4	5	35.7	6	42.9
Baabda	19	65	29.2	15	23.1	31	47.7
Aley	6	36	16.7	5	13.9	25	69.4
Chouf	2	11	18.2	2	18.2	7	63.6
Kesrouane	21	77	27.3	15	19.5	41	53.2
Jbeil	2	19	10.5	9	47.4	8	42.1
Metn	9	43	20.9	10	23.3	24	55.8
South Lebanon							
Jezzine	5	15	33.3	3	20	7	46.7
Saida	16	42	38.1	4	9.5	22	52.4
Nabatieh	5	27	18.5	1	3.7	21	77.8
Marjeyoun	9	32	28.1	7	21.9	16	50
Tyre	6	23	26.1	5	21.7	12	52.2
Bint Jbeil	10	56	17.9	9	16.1	37	66.1

¹⁷ Afifi-Sweid and Khogali, 2003

Hasbaya	3	12	25	1	8.3	8	66.7
Beqa'a							
West Beqaa	18	64	28.1	9	14.1	37	57.8
Zahleh	3	21	14.3	1	4.8	17	80.9
Baalbeck	8	16	50	3	18.8	5	31.3
Hermel	6	18	33.3	1	5.6	11	61.1
Rachaya Al Wadi	2	14	14.3	1	7.1	11	78.6
The North							
Akkar	11	33	33.3	4	12.1	18	54.5
Tripoli	7	35	20	9	25.7	19	54.3
Zogharta	6	35	17.1	9	25.7	20	57.1
Koura	3	7	42.9	1	14.3	3	42.9
Batroun	8	49	16.3	19	38.8	22	44.9
Minnieh	9	23	39.1	1	4.3	13	56.5
Totals	233	911	25.6	177	19.4	499	54.8

When former smokers were asked at what age they had finally quit smoking, it was interesting to note that the majority had started to smoke at an early age, mostly from their early teens to the age of twenty. Most have smoked for many years.

A total of 177 respondents have been former smokers. In an attempt to determine the period of smoking, we have introduced the concept of “smoking years” from the responses obtained from the question “How old were you when you finally quit smoking?” Responses were grouped into age groups as in Table below:

Overall the 177 former smokers had cumulatively contributed 5,215 years of “smoking” history before they did quit (Table 15b).

Table 15b- INTRA study- Distribution of the respondents by duration of smoking-years and age (brackets)

Age at quitting smoking	Smoking-years	Number	Average No Smoking-yrs
25-44 years	686	44	15.6
45-54 years	1793	59	30.4
55-64 years	1587	46	34.5
Above 65 years	1149	28	41.0
	5215	177	29.5

The current smokers, i.e. those who continue to smoke at the present time, were asked to indicate the number of cigarettes they consume per day. Responses ranged from few cigarettes to three packs per day.

Table 15c- INTRA study- Distribution of the respondents by amount of current smoking

Cigarettes/Day	Number
0-10	122
11-20	74
21-30	16
31-40	10
41-60	3
Unknown	8
Totals	233

A total number of 3,212 cigarettes are consumed daily by 225 current smokers (another eight current smokers had not offered an answer to that question). **On the average, each current smoker consumes around 15 cigarettes per day.**

Health advice on Smoking

Twenty seven per cent (246) of the respondents confirmed that they had received advice about the ill effects of smoking, although only 233 confirmed that they did smoke. Out the 233 who smoked, 77 denied receiving advice from any of the health professionals at the health center (33%).

Table 15d- INTRA study- Distribution of the respondents by advice on smoking by clinic staff

	Current smokers	Does not smoke	Totals
Received advice	156	90	246
No advice	77	588	665
Totals	233	678	911

Nature of advice

Quit smoking	215
Reduce smoking	21
Not to resume smoking	10
Total receiving advice	246

Of those who had received advice about smoking, most were advised to stop smoking altogether (88%), while 8.5% were asked to reduce smoking and bring down the number of cigarettes consumed. A large proportion admitted that the advice was clear and that it was well understood. Only 15% responded that the advice was not clear enough.

Table 15e- INTRA study- Distribution of the respondents by nature of the advice on smoking by clinic staff

Was the advice clear?	Clear	Not clear
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To quit smoking	180	35	215
To reduce smoking	19	2	21
Not to resume smoking	10		10
Totals	209	37	246

The prevalence of smokers has been found to be higher in the national representative sample of the NHHEUS study of 1999. In that sample (that comprised close to 1,500 men and women after the age of 50 years) 50.3% of the men aged 55-59 years were smokers. This proportion remained close to 40% until the age of 70+ years. The proportion of women who smoked most was in the 50-54 years age bracket (32%). This proportion decreased with age (Table 16)

Table 16- NHHEUS 1999- Prevalence of smokers in the national sample, Lebanon, 1999

Smoking %	Smoker	Non smoker	Missing	Total	Sample
Men					
50-54	46.8	49.1	4.1	100	633
55-59	50.3	47.5	2.2	100	553
60-64	42.4	55.8	1.8	100	525
65-69	38.3	59.6	2.1	100	435
70+ years	21.7	77.1	1.2	100	753
Women					
50-54	31.9	67.3	0.8	100	694
55-59	25.6	74	0.4	100	562
60-64	19.2	79.3	1.5	100	557
65-69	18.8	79.6	1.6	100	450
70+ years	10.2	89.1	0.7	100	732
Totals					
50-54	39	58.6	2.4	100	1327
55-59	37.9	60.9	1.2	100	1115
60-64	30.4	67.9	1.7	100	1081
65-69	28.4	69.8	1.8	100	885
70+ years	16	83.1	0.9	100	1485

Smoking is the most important modifiable risk factor for NCDs for young and old alike and a major preventable cause of premature death. Smoking not only increases the risk for diseases such as lung cancer, it is also negatively related to factors that may lead to important losses in functional capacity. For example, smoking accelerates the rate of decline of bone density, muscular strength and respiratory function. Research on the effects of smoking revealed not just that smoking is a risk factor for a large and increasing number of diseases but also that its ill effects are cumulative and long lasting. The risk of contracting at least one of the diseases associated with smoking increases with the duration and the amount of exposure. A critical message for young people should always be “If you want to grow older, don’t smoke. Moreover, if you want to grow older and to increase your chance to age well, again don’t smoke.”

The benefits of quitting are wide-ranging and apply to any age group. It is never too late to quit smoking. For instance, stroke risk decreases after two years of abstinence from cigarette smoking and, after five years, it becomes the same as that for individuals who have never smoked. For other diseases, e.g. lung cancer and obstructive pulmonary disease, quitting decreases the risk but only very slowly. Thus, current

exposure is not a very good indicator of current and future risks and past exposure should be taken into account as well; the effects of smoking are cumulative and long standing (Doll, 1999).

Smoking may interfere with the effect of needed medications. Exposure to second-hand smoke can also have a negative effect on older people's health, especially if they suffer from asthma or other respiratory problems. Most smokers start young and are quickly addicted to the nicotine in tobacco. Therefore, efforts to prevent children and youth from starting to smoke must be a primary strategy in tobacco control. At the same time, it is important to reduce the demand for tobacco among adults (through comprehensive actions such as taxation and restrictions on advertising) and to help adults of all ages to quit. Studies have shown that tobacco control is highly cost-effective in low- and middle-income countries. In China, for example, conservative estimates suggest that a 10 percent increase in tobacco taxes would reduce consumption by five percent and increase overall revenue by five percent. This increased revenue would be sufficient to finance a package of essential health care services for one-third of China's poorest citizens (World Bank, 1999)¹⁸.

In a recent study, published in the Journal of Medical Association, it was found that men who smoke increase their risk of having a stroke with every cigarette they smoke. Smoking more than one packet of cigarettes a day doubles the risk of a stroke, compared to non-smokers.

The US study looked at the risk of hemorrhagic stroke, where ruptured blood vessels bleed in the brain. A third of them prove fatal within 30 days.

Smoking is already identified as a risk factor for the more common ischemic stroke, where the blood supply to the brain is blocked.

It has also linked with subarachnoid haemorrhage, a stroke where there is bleeding in the space between the brain and the skull.

Researchers from the Brigham and Women's Hospital, Harvard Medical School in Boston followed 22,000 male physicians from 1982 for an average of 18 years. Information on smoking habits was collected at the beginning of the study after 24 months, 60 months and 144 months.

At the start of the research, half had never smoked, 40% were past smokers, 4% smoked less than a pack a day, and 7% smoked more.

Over the period of the study, over 1,000 men had strokes, including 139 hemorrhagic strokes.

Those who currently smoked had a 1.7 times higher risk of having all types of haemorrhagic stroke if they smoked less than 20 cigarettes a day and 2.4 times higher risk if they smoked more, when compared to men who never smoked.

Smokers also had double the risk of having a specific kind of hemorrhagic stroke called intracerebral haemorrhage, bleeding inside the brain.

The researchers say smoking may damage arterial walls, making arteries more prone to rupture.

Dr Tobias Kurth, who led the research, said: "Our results add to the multiple health benefits that can be accrued by abstaining from cigarette smoking." A spokesperson for The Stroke Association said: "We urge smokers to reduce their risk of suffering a stroke by giving up.

"Stroke is the largest single cause of severe adult disability in the UK, with over 300,000 people affected at any one time."

XI- Health Advice and Chronic ailments

¹⁸ WHO, Active Ageing document, 2002

The INTRA project questionnaire requested information on advice received from the health providers for a group of conditions, in addition to smoking, namely diet, exercise and physical activity, alcohol consumption and weight reduction (Table 17a).

The question “What was the diet advice given”, generated several responses. The most frequent diet advice was “low salt low sugar diet” in 37.6% of the cases, “low salt low fat low sugar diet” in 21.4% of the responses, “low salt” in 13.5%, “low fat” in 6.5% and “low salt low sugar, reduce coffee and tea” in yet another 6.5% of the cases. The remaining 15% of the advice focused on more vegetable intake, less spicy dishes, high protein content and some combinations.

Whereas 69% of those surveyed acknowledged being asked about their dietary intake, and 72% received advice, only 43% received advice on exercise and physical activity, 44.5% on weight reduction and only 11.3% on alcohol consumption.

It is likely that the responses should have been the same for those surveyed on diet and those receiving advice on diet. Both averaged around 70% of cases. The next level of response (around 40%) focused on exercise, physical activity and weight reduction. Finally advice on alcohol consumption was offered to only 11% of the cases. This could be due to the fact that the population of several of the qadas are predominantly Islamic and hence are expected not to consume alcohol (Table 17a)

Table 17a- INTRA study- Distribution of the respondents by advice received on health matters and administrative division

	Asked about the diet	Total	% asked about diet	Received diet advice	% received diet advice	Advised on Exercise	% advised on exercise	Advised on Alcohol	% advised on alcohol
Beirut	52	124	41.9	61	49.2	44	35.5	15	12.1
Mount Lebanon									
Suburbs of Beirut	9	14	64.3	9	64.3	8	57.1	3	21.4
Baabda	51	65	78.5	49	75.4	32	49.2	10	15.4
Aley	19	36	52.8	22	61.1	14	38.9	3	8.3
Chouf	7	11	63.6	7	63.6	5	45.5	1	9.1
Kesrouane	70	77	90.9	70	90.9	29	37.7	6	7.8
Jbeil	19	19	100	19	100	6	31.6	5	26.3
Metn	36	43	83.7	38	88.4	3	6.9	21	48.8
South Lebanon									
Jezzine	10	15	66.7	10	66.7	6	40	5	33.3
Saida	28	42	66.7	26	61.9	19	45.2	3	7.1
Nabatieh	24	27	88.9	26	96.3	9	33.3	0	0
Marjeyoun	18	32	56.3	20	62.5	8	25	3	9.4
Tyre	19	23	82.6	17	73.9	17	73.9	0	0
Bint Jbeil	54	56	96.4	52	92.8	38	67.8	2	3.6
Hasbaya	9	12	75	9	75	1	8.3	0	0

Beqa'a

West Beqaa	48	64	75	54	84.4	39	60.9	0	0
Zahleh	10	21	47.6	10	47.6	11	52.4	0	0
Baalbeck	8	16	50	12	75	7	43.8	2	12.5
Hermel	14	18	77.8	16	88.9	6	33.3	2	11.1
Rachaya Al Wadi	6	14	42.8	6	42.9	8	57.1	2	14.3

The North

Akkar	16	33	48.5	16	48.5	17	51.5	1	3.0
Tripoli	26	35	74.3	27	77.1	20	57.1	2	5.7
Zogharta	27	35	77.1	28	80	22	62.9	8	22.9
Koura	5	7	71.4	5	71.4	3	42.9	2	28.6
Batroun	26	49	53.1	23	46.9	16	32.7	7	14.3
Minnieh	18	23	78.3	23	100	6	26.1	0	0
Totals	629	911	69.0	655	71.9	394	43.2	103	11.3

The biological changes associated with the ageing process have been documented. Body composition of an aged person is different from that of the youth, and the change takes place in all the four body components: body fat, cellular mass, intra- and extra-cellular fluid and bone mass. Loss of muscle mass in ageing is a normal process. This is quite often associated with loss of subcutaneous interstitial tissues as well. Total body water, both intracellular and extracellular, decreases with age. Bone mass declines with age, causing osteopenia with a reduction in bone density, and thus the elderly are liable to suffer fractures easily.

The energy requirements of the elderly get gradually reduced with age due to two main factors: lowered basal metabolic rate, and less physical activity with advancing age. The cell mass in essential organs, such as liver and kidneys, gets gradually reduced with age with a corresponding decrease in the functional capacity, e.g., hepatic and renal functions are reduced by 30-50%. Similarly, digestive and absorptive functions are impaired to a large extent. These changes need considerable alteration in the dietary pattern. Lowered immunocompetence, to the extent of about 50%, results in the vulnerability of aged individuals to infectious diseases with a much graver outcome.

Eating and food security problems at all ages include both under-nutrition (mostly, but not exclusively, in the least developed countries) and excess energy intake. In older people, malnutrition can be caused by limited access to food, socioeconomic hardships, a lack of information and knowledge about nutrition, poor food choices (e.g., eating high fat foods), disease and the use of medications, tooth loss, social isolation, cognitive or physical disabilities that inhibit one's ability to buy foods and prepare them, emergency situations and a lack of physical activity.

Excess energy intake greatly increases the risk for obesity, chronic diseases and disabilities as people grow older.

Diets high in (saturated) fat and salt, low in fruits and vegetables and providing insufficient amounts of fibre and vitamins combined with sedentarism, are major risks factors for chronic conditions like diabetes, cardiovascular disease, high blood pressure, obesity, arthritis and some cancers. Insufficient calcium and vitamin D is associated with a loss of bone density in older age and consequently an increase in painful,

costly and debilitating bone fractures, especially in older women. In populations with high fracture incidence, risk can be decreased through ensuring adequate calcium and vitamin D intake.

A rapid assessment survey was done in Bahrain on a sample of 201 individuals (43.8% men and 56.2% women) aged 60 years and above. The mean age for men was 70.7 years, while that for women was 71.8 years. Most of those in the sample were illiterate and unemployed.

It was found that 85.1% of those surveyed had appetite, 10.4% sometimes and only 4.5% did not have any appetite. A high percentage of the elderly persons had preference for salty food and sweets. Fish, fruits and vegetables and meat were the main foods preferred, while white chicken, meat and cheese were disliked by many.

In general, the elderly individuals avoided foods rich in fat, salty foods and sweets. The reason for avoiding these foods was because of diabetes, hypertension, heart disease and indigestion. The daily intake of fish was the highest compared to other protein foods, such as meat, chicken and cheese. The average daily intake of protein in their diet exceeded the Recommended Daily Allowances (RDA), while the intake of energy, calcium and iron were below RDA.

When asked about their engagement in a physical activity, a quarter of the population surveyed indicated that it did not engage in any exercise, besides their daily normal home activity. Almost two thirds acknowledged that they do walk as a physical activity (Table 17b). Gardening, jogging, with and without walking and aerobics were also noted as examples of physical activity carried out on a regular basis by the surveyed population within the last six months.

Participation in regular, moderate physical activity can delay functional declines. It can reduce the onset of chronic diseases in both healthy and chronically ill older people. For example, regular moderate physical activity reduces the risk of cardiac death by 20 to 25 percent among people with established heart disease (Merz and Forrester, 1997). It can also substantially reduce the severity of disabilities associated with heart disease and other chronic illnesses (U.S Preventive Services Task Force, 1996). Active living improves mental health and often promotes social contacts. Being active can help older people remain as independent as possible for the longest period of time. It can also reduce the risk of falls. There are thus important economic benefits when older people are physically active. Medical costs are substantially lower for older people who are active (WHO, 1998).

Despite all of these benefits, high proportions of older people in most countries lead sedentary lives. Populations with low incomes, ethnic minorities and older people with disabilities are the most likely to be inactive. Policies and programs should encourage inactive people to become more active as they age and to provide them with opportunities to do so. It is particularly important to provide safe areas for walking and to support culturally-appropriate community activities that stimulate physical activity and are organized and led by older people themselves. Professional advice to “go from doing nothing to doing something” and physical rehabilitation programs that help older people recover from mobility problems are both effective and cost-efficient (18).

Table 17b- INTRA study- Distribution of the respondents by advice received on health matters and administrative division

No Exercise	230
Walking	590
Dancing	4
Gardening	41

Jogging	5
Aerobics	10
Walking & Gardening	29
Walking & Jogging	2
	911

Only 65 respondents were offered advice to limit alcohol consumption (7%), although 11% were asked about that consumption.

While older people tend to drink less than younger people, metabolism changes that accompany ageing increase their susceptibility to alcohol-related diseases, including malnutrition and liver, gastric and pancreatic diseases. Older people also have greater risks for alcohol-related falls and injuries, as well as the potential hazards associated with mixing alcohol and medications. Treatment services for alcohol problems should be available to older people as well as younger people.

According to a recent WHO review of the literature, there is evidence that alcohol use at very low levels (up to one drink a day) may offer some form of protection against coronary heart disease and stroke for people age 45 and over. However, in terms of overall excess mortality, the adverse effects of drinking outweigh any protection against coronary heart disease, even in high risk populations (Jernigan et al., 2000).

A- Blood Pressure

Nearly four out of every ten persons interviewed reported being hypertensive (38%). Only 6% of this group (20 out of 350) were informed by the physician or the nurse within the last year; the rest have had high blood pressure for longer than one year. In fact more than half, had high blood pressure for longer than five years (Table 18a).

Table 18a- INTRA study- Distribution of the respondents with hypertension as to period of the disease

Blood Pressure	< 1 year ago	1-5 yrs	> 5 yrs	Total
Informed by MD	18	143	172	333
Informed by RN	2	10	5	17
Totals	20	153	177	350

Quite unexpectedly, more than 13% of the hypertensive group reported that the clinic health providers had not measured their blood pressure that morning. From the responses received, fully 30% of the entire group aged fifty years or above had not had their blood pressure checked that morning in the clinic! (Table 18b)

Table 18b- INTRA study- Distribution of the respondents with hypertension as to BP measurement in clinic

Blood Pressure	Has HBP	No HBP	Totals
BP measured today	299	351	650
BP not measured	48	213	261
Totals	347	564	911

The distribution by location (qada) confirms that only 71% of the entire group of respondents had their blood pressure checked at the clinic that day, with a range from 25% in Baalbeck to a full 100% of the clients in Jbeil, Nabatieh and Tripoli (Table 18c).

Table 18c- INTRA study- Distribution of the respondents by BP check and advice received on health matters and administrative division

	BP taken today	Total	% had BP taken	Advised sugar test	% advised sugar test	Advised cholesterol test	% advised cholesterol test
Beirut	76	124	61.3	96	77.4	86	69.4
Mount Lebanon							
Suburbs of Beirut	12	14	85.7	11	78.6	10	71.4
Baabda	57	65	87.7	53	81.5	48	73.8
Aley	30	36	83.3	26	72.2	19	52.8
Chouf	10	11	90.9	8	72.7	6	54.5
Kesrouane	58	77	75.3	68	88.3	63	81.8
Jbeil	19	19	100	18	94.7	18	94.7
Metn	39	43	90.7	40	93.0	33	76.7
South Lebanon							
Jezzine	5	15	33.3	10	66.7	8	53.3
Saida	30	42	71.4	28	66.7	25	59.5
Nabatieh	27	27	100	17	63.0	14	51.9
Marjeyoun	25	32	78.1	23	71.9	21	65.6
Tyre	9	23	39.1	17	73.9	16	69.6
Bint Jbeil	35	56	62.5	40	71.4	27	48.2
Hasbaya	8	12	66.7	9	75	9	75
Beqa'a							
West Beqaa	53	64	82.8	55	85.9	47	73.4
Zahleh	9	21	42.9	12	57.1	5	23.8
Baalbeck	4	16	25	9	56.3	8	50
Hermel	6	18	33.3	12	66.7	6	33.3
Rachaya Al Wadi	9	14	64.3	10	71.4	8	57.1
The North							
Akkar	16	33	48.5	22	66.7	21	63.6
Tripoli	35	35	100	24	68.6	28	80
Zogharta	25	35	71.4	28	80	28	80

Koura	2	7	28.6	4	57.1	5	71.4
Batroun	29	49	59.2	24	49.0	24	49.0
Minnieh	22	23	95.7	20	87.0	21	91.3
Totals	650	911	71.4	684	75.1	604	66.3

B- Diabetes mellitus

A little more than a quarter of the respondents (27%) confirmed that they suffer from diabetes mellitus, and that this fact has been confirmed by the clinic staff (Table 19). However, three quarter of the total number of respondents have been advised to have their blood sugar level determined by the clinic staff, with a range from 49% in Batroun to 95% in Jbeil. Similarly two thirds of the respondents have been advised to have their blood cholesterol checked at the clinic with a range from 24% in Zahleh to 95% in Jbeil.

It is apparent however that no trend exists across the three examinations and the location of the clinic by district. There is no apparent distinct tendency for certain locations to be more conscious of the need for screening for high blood sugar or cholesterol or checking blood pressure than clinics in other locations. The variation could also be attributed to the small numbers of clients in many clinic locations.

Table 19- INTRA study- Distribution of the respondents with Diabetes as to information by clinic staff

Diabetes	Informed	Not Informed	Total
By MD	239	1	240
By RN	7		7
By Worker	1		1
Totals	247	1	248

Diabetes has had an extraordinary increase as a cause of major morbidity and mortality.

Going back to 1985, an estimated 30 million people worldwide had diabetes. In 1998, an estimated 143 million people worldwide had diabetes. This means that, today, the global prevalence of diabetes is almost five times as high as it was a little more than a decade ago. The number is expected to rise further to almost 300 million by the year 2025. This alarming increase is projected to occur because of population ageing, unhealthy diet, obesity and a sedentary lifestyle.

All over the world, traditional lifestyles and dietary patterns that have sustained people over generations are disappearing. Socioeconomic realities mean that families are urbanized as they seek employment. Rapid industrialization is taking its toll. Diabetes will increasingly concentrate in urban areas in the future. An important contributing factor to the projected increase in diabetes is the situation in developing countries.

The prevalence of diabetes is currently higher in developed countries than in developing countries and is expected to remain so until 2025. However, developing countries will hear the brunt of the escalating epidemic in the future. Westernization accompanying development in developing countries has been followed by a substantial increase in diabetes. Further modernization in developing countries is likely to be accompanied by an increase the number of people with diabetes, to such an extent that a global epidemic has predicted. The prevalence of adult diabetes in developing countries is expected to increase

by 170% between 1995 and 2025, as compared to a rise of 41% over the same period in developed countries¹⁹.

C- Coronary problem

A similar proportion (27%) confirmed that they suffer from a coronary or cardiac problem, and that this has been confirmed by the health providers at the clinic (Table 20). Most of these patients have had their ailment for longer than one year, and have been followed up at the clinic since.

Table 20- INTRA study- Distribution of the respondents with coronary problem as to information by clinic staff

Coronary problem	Informed	Not Informed	Total
By MD	239	1	240
By RN	7		7
By Worker	1		1
Totals	247	1	248

Coronary problem	< 1 year ago	1-5 yrs	> 5 yrs	Total
Informed by MD	55	112	82	249

D- Chronic ailments

When asked if they have any other chronic health problem, about half of the respondents (44%) confirmed that they suffer from a chronic problem, with a low of 9% in Kesrouane to a high of 89% in adjacent Jbeil (Table 20a).

Table 20a- INTRA study- Distribution of the respondents by BP check, history of stroke and presence of chronic ailments by administrative division

	BP taken today	Total	% had BP taken	Had a Stroke	% Had a stroke	Other Chronic Illness	% other Chronic Illness
Beirut	76	124	61.3	5	5.2	44	35.5
Mount Lebanon							
Suburbs of Beirut	12	14	85.7	0	0	3	21.4
Baabda	57	65	87.7	7	13.2	32	49.2
Aley	30	36	83.3	1	3.8	13	36.1
Chouf	10	11	90.9	1	12.5	1	9.1

¹⁹ Andrews

Kesrouane	58	77	75.3	2	2.9	57	74.0
Jbeil	19	19	100	0	0	17	89.5
Metn	39	43	90.7	2	5	23	53.5

South Lebanon

Jezzine	5	15	33.3	1	10	2	13.3
Saida	30	42	71.4	0	0	11	26.2
Nabatieh	27	27	100	1	5.9	5	18.5
Marjeyoun	25	32	78.1	1	4.3	12	37.5
Tyre	9	23	39.1	0	0	9	39.1
Bint Jbeil	35	56	62.5	3	7.5	17	30.4
Hasbaya	8	12	66.7	0	0	1	8.3

Beqa'a

West Beqaa	53	64	82.8	2	3.6	40	62.5
Zahleh	9	21	42.9	1	8.3	17	81.0
Baalbeck	4	16	25	0	0	5	31.3
Hermel	6	18	33.3	1	8.3	8	44.4
Rachaya Al Wadi	9	14	64.3	2	20	6	42.9

The North

Akkar	16	33	48.5	5	22.7	18	54.5
Tripoli	35	35	100	1	4.2	17	48.6
Zogharta	25	35	71.4	2	7.1	11	31.4
Koura	2	7	28.6	1	25	1	14.3
Batroun	29	49	59.2	3	12.5	25	51.0
Minnieh	22	23	95.7	0	0	9	39.1
Totals	650	911	71.4	42	6.1	404	44.3

The list of chronic ailments includes primarily joint pains and a high cholesterol level, arteriosclerosis and osteoporosis (Table 20b). Hyper-cholesterolemia was reported by 15.6% of the clients suffering from a chronic ailment. Clients also reported suffering from joint pains, asthma, stomach pain and back pain.

Table 20b- INTRA study- Distribution of the respondents suffering from a chronic ailment as to its nature

Chronic problem

High Cholesterol	63	15.6
Joint pain	46	11.4
Asthma	41	10.1
Stomach pain	41	10.1
Back pain	40	9.9
Arteriosclerosis	34	8.4

Osteoporosis	34	8.4
Renal problems	25	6.2
Headache	9	2.2
Cancer	7	1.7
Hip pain	7	1.7
Knee pain	7	1.7
Muscle pain	7	1.7
Thyroid	7	1.7
Leg pain	6	1.5
Eczema	6	1.5
Bronchial constriction	5	1.2
Flatulence	4	1.0
Hemorrhoids	3	0.7
Not mentioned	12	3.0
Totals	404	100

The NHHEUS national study of 1999 the prevalence of at least one chronic ailment in the population aged 60 years and above has been reported by more than 70% of men and by 83% of women! These rates are higher than those reported in our study. It is to be recalled that the age distribution in the INTRA study is skewed to the younger age groups, mainly the 50-59 years age bracket that is excluded in Table 20c below.

Table 20c- NHHEUS study 1999- Prevalence of chronic illnesses in the 60+ years by gender

Chronic illness 60 years and above	None	Reports at least one	Missing	Total	Sample
Men	27.2	71.2	1.6	100	1713
Women	16	82.8	1.2	100	1739
Men and Women	21.6	77	1.4	100	3451

With the very rapid growth of those over 80, there is a world-wide increase in dementia that, in developed countries, can affect 40% of those at 80-84 years. The prevalence increases even more at higher ages but seems to level off at 95.

Thus, increasing life expectancy has inevitably been accompanied by increased prevalence of age-associated chronic diseases, including circulatory disease such cardiovascular disease and stroke, cancers, musculoskeletal conditions such as arthritis osteoporosis, neurological or mental disorders such as depression, degenerative disorders such as loss of sight and hearing, and chronic obstructive pulmonary disease.

The paramount health challenge must be to prevent, postpone or treat these conditions. In this there is critical role for community health care services in preventive, diagnostic, treatment, rehabilitative and long-term care modes (18).

Injury is one of the major health issues for the ageing population. One half of the injuries in the older group are the result of falls. Falls are the leading cause of death from injury in persons 65 years or older. With increased age, people are not only at risk of falls and injuries but also more susceptible to impaired physical function, and morbidities, such as hypertension, heart disease and urinary incontinence (Teshuva, Stanislavsky & Kendig, 1994:19). Morbidity, disability and mortality are interrelated.

E- Stroke

Of interest is the response that 6% of the group of respondents have had a stroke (Table 20a). When asked whether they had suffered a stroke, only 4.5% of the respondents replied in the affirmative, mostly within the last two years (Table 20d).

Table 20d- INTRA study- Distribution of the respondents suffering stroke as to time of occurrence

Stroke	< 1 year ago	1-5 yrs	> 5 yrs	Total
In past 2 years	8	25	2	35
Had a stroke	3	1		4
Totals	11	26	2	39

In the NHHUS national study, close to one third of the respondents above the age of 60 years expressed the opinion that they were in poor health (Table 20e). The remaining 67% estimated that they were in excellent health, but mainly in fair and good health.

Table 20e- NHHEUS study- Distribution of the respondents as to their perception of their health status

Perception Health status	Poor	Fair	Good	Very Good	Excellent	Missing	Totals
60 years and above							
Men	27.5	36.9	25.5	5.7	2.7	1.7	100
Women	37.4	40.4	17.6	2.6	0.6	1.4	100
Men and Women	32.5	38.7	21.6	4.2	1.6	1.4	100

XII- Visits to the Health Centers

A-Number of visits to health center

When asked how many times in the past twelve months did they visit the health center, almost half (42%) replied “monthly”, i.e. 12 times in the past year, while only 7% confirmed that this is their first visit. One may conclude that the respondents have identified the clinic as their site of continuing care, as their center of care. It may well be that those coming for the first time, may be coming to newly established centers primarily in the outlying regions of the Chouf, Tyre and the Hermel (Table 21a).

Table 21a- INTRA study- Distribution of the respondents by number of visits to the health center by administrative division

Visits to HC	First time	1-2 times	3-5 times	> 5 times	Monthly	Totals	% First Visit	% Monthly Visits
Beirut	16	28	23	20	37	124	12.9	29.8
Mount Lebanon								
Suburbs of Beirut		3	5	2	4	14	0	28.6
Baabda		3	1	21	40	65	0	61.5

Aley	4	6	1	6	19	36	11.1	52.8
Chouf	2	2		3	4	11	18.2	36.4
Kesrouane	1	15	17	21	23	77	1.3	29.9
Jbeil			1	10	8	19	0	42.1
Metn	1	2	7	8	25	43	2.3	58.1

South Lebanon

Jezzine	2	3	1	2	7	15	13.3	46.7
Saida	5	2	11	6	18	42	11.9	42.9
Nabatieh			1		26	27	0	96.3
Marjeyoun	4	7	5	5	11	32	12.5	34.4
Tyre	4	6	6	2	5	23	17.4	21.7
Bint Jbeil		5	10	15	26	56	0	46.4
Hasbaya			3	2	7	12	0	58.3

Beqa'a

West Beqaa	2	6	11	44	1	64	3.1	1.6
Zahleh	2	5	8	6		21	9.5	0
Baalbeck	2	3	4	2	5	16	12.5	31.3
Hermel	3	2	3	1	9	18	16.7	50
Rachaya Al Wadi	1	3	2	2	6	14	7.1	42.9

The North

Akkar	1	5	7	13	7	33	3.0	21.2
Tripoli	2	6	5	3	19	35	5.7	54.3
Zogharta	4	1	4	9	17	35	11.4	48.6
Koura	1		2	1	3	7	14.3	42.9
Batroun	5	4		6	34	49	10.2	69.4
Minnieh					23	23	0	100

Totals	62	117	138	210	384	911	6.8	42.2
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The NHHEUS national study of 1999 focused on the utilization of health care facilities in the country, across all regions, gender and age groups. Table 21b lists the findings.

As far as outpatient visits, 27% of men and 43% of women aged 50-54 years reported an outpatient visit to a physician within the past month. That proportion rises progressively to reach 42% for men and 46% for women aged 70 years and above. This translated to an annual rate of 5.75 visits for men and 6.16 for women aged 70 years and above.

It seems that the respondents in the INTRA study had a higher number of outpatient visits than the national sample describe din the NHHEUS study of 1999.

For information, the utilization rates for the population aged 50 years and above, men and women, for hospital admissions, one day surgery and dental care have also been included in table 2b below.

Table 21b- NHHEUS study 1999- Utilization rates for outpatient care, hospitalization, one-day surgery and dental care by age (in brackets) and gender

Health Care Utilization	Outpatient care Monthly %	Outpatient care visits/yr/per	Hospital admission Yearly %	Hospital admission year/person	One day surgery 6 months %	One day surgery Admission/yr/ person	Dental 3 months
Men							
50-54	26.8	3.59	14	0.16	3.3	0.07	18.
55-59	30.5	3.93	15.5	0.2	3.6	0.08	18.
60-64	34.4	4.48	18.5	0.21	4.2	0.09	16.
65-69	35.5	5.02	22.6	0.27	4	0.09	12.
70+ years	42.4	5.75	25.1	0.32	3.9	0.08	7.2
Women							
50-54	43	6.01	14.3	0.17	3.9	0.09	21.
55-59	41.6	5.82	13.8	0.18	3.2	0.07	16.
60-64	49.8	7.3	18.8	0.22	4.7	0.1	13.
65-69	48.6	7	19.9	0.25	5	0.11	12.
70+ years	46.1	6.16	24.6	0.31	3.1	0.07	6.1
Men and Women							
50-54	35.3	4.88	14.1	0.17	3.6	0.08	20.
55-59	36.1	4.89	14.6	0.19	3.4	0.07	17.
60-64	42.3	5.93	18.7	0.22	4.5	0.1	14.
65-69	42.2	6.03	21.2	0.26	4.5	0.1	12.
70+ years	44.2	5.95	24.8	0.32	3.5	0.08	6.7

B- Preference for visits to health centers

Despite the finding that overall almost half the respondents were visiting the center on a “monthly” basis, yet about 40% would still have preferred more visits to the center! (Table 22a). There is no discernable pattern as far as the administrative region is concerned. About half the Beirut respondents would have preferred more visits. More than half of those surveyed in Aley, Chouf, Jezzine, West Beqa’a, Zahleh, Baalbeck, Hermel, Akkar and Batroun expressed the preference to visit more often. One ought to note that in these locations, a far smaller percentage visited on a “monthly basis”.

Table 22a- INTRA study- Distribution of the respondents by preference for visits to HC by administrative division

Visit to HC	Preferred more visits	Total	% Preferred more visits
Beirut	61	124	49.2
Mount Lebanon			
Suburbs of Beirut	2	14	14.3
Baabda	22	65	33.8
Aley	20	36	55.6
Chouf	6	11	54.5

Kesrouane	4	77	5.2
Jbeil	1	19	5.3
Metn	5	43	11.6

South Lebanon

Jezzine	8	15	53.3
Saida	3	42	7.1
Nabatieh	2	27	7.4
Marjeyoun	6	32	18.8
Tyre	11	23	47.8
Bint Jbeil	20	56	35.7
Hasbaya	1	12	8.3

Beqa'a

West Beqaa	36	64	56.3
Zahleh	18	21	85.7
Baalbeck	13	16	81.3
Hermel	11	18	61.1
Rachaya Al Wadi	11	14	78.6

The North

Akkar	25	33	75.8
Tripoli	15	35	42.9
Zogharta	6	35	17.1
Koura	3	7	42.9
Batroun	37	49	75.5
Minnieh	3	23	13.0

Totals	350	911	38.4
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C- Reasons for preferred more visits to health centers

When asked “*Why did you feel the need to visit more often*”, almost half the respondents mentioned that they did feel sicker and needed more attention. One third expressed the need for follow up. Only 5% needed more physiotherapy, and 17% needed more medications, as shown in table 22b below.

Table 22b- INTRA study- Distribution of the respondents who preferred more visits to HC as to the reasons for the visits

Felt more sick than before	159	45.4
Needed physiotherapy	17	4.9
For follow up	113	32.3
Take Medication	61	17.4
Totals	350	100

D- Barriers to more visits for health centers

The financial barrier was the reason most mentioned for the failure to visit the center more often (Table 22c). Less than 5% of those responding that they would have liked more visits did not do so because the care “is not good”. Disability has also been mentioned by 11% suggesting difficulty in ambulation and movements. Distance was noted as an obstacle by 19% of the respondents who would have preferred more visits to the health center.

Table 22c- INTRA study- Distribution of the respondents who preferred more visits to HC as to the reasons why they did not undertake the visit

Money	90	25.7
No response	66	18.9
Distance	40	11.4
Money and disability	37	10.6
No need	33	9.4
Time	21	6.0
Do not know	19	5.4
Cannot walk	17	4.9
Care not good	15	4.3
No Medications	12	3.4
Totals	350	100

E- Waiting time at health centers

Respondents were asked about the time they had waited before being attended to by the clinic staff. Only 11% mentioned that they felt the wait was too long. Almost half (46%) noted that they had waited only few minutes (Table 22d). This speaks for an acceptable level of service by the clinics surveyed in this study.

Table 22d- INTRA study- Distribution of the respondents by preference for visits to HC and waiting time by administrative division

Visit to HC	Waited		Not too		
	few minutes	% Waited few minutes	long wait	Too long	% Too long wait
Beirut	60	48.4	25	36	29.0
Mount Lebanon					
Suburbs of Beirut	4	28.6	10	0	0
Baabda	21	32.3	31	13	20
Aley	5	13.9	27	4	11.1
Chouf	0	0	8	3	27.3
Kesrouane	31	40.3	43	3	3.9
Jbeil	14	73.7	5	5	26.3
Metn	28	65.1	15	0	0

South Lebanon

Jezzine	8	53.3	4	3	20
Saida	29	69.0	11	2	4.8
Nabatieh	11	40.7	15	1	3.7
Marjeyoun	21	65.6	8	3	9.4
Tyre	16	69.6	7	0	0
Bint Jbeil	38	67.9	17	0	0
Hasbaya	5	41.7	7	0	0

Beqa'a

West Beqaa	3	4.9	50	11	17.2
Zahleh	11	52.4	6	4	19.0
Baalbeck	11	68.8	5	0	0
Hermel	9	50	6	2	11.1
Rachaya Al Wadi	9	64.3	5	0	0

The North

Akkar	15	45.5	15	3	9.1
Tripoli	0	0	32	3	8.6
Zogharta	31	88.6	3	1	2.9
Koura	3	42.9	2	2	28.6
Batroun	32	65.3	16	1	2.0
Minnieh	1	4.3	19	3	13.0

Totals	416	45.7	392	103	11.3
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F- Attendance by clinic staff

The overwhelming majority of the respondents indicated that they had been seen by the physician, either on his/her own (75%) or with the nurse (10%). A mere 15% indicated that they had been seen by the nurse alone. The input of the other providers was minimal (Table 22e).

Table 22e- INTRA study- Distribution of the respondents by attendance by clinic staff by administrative division

Providers	Physician	Nurse	MD + RN	Others	Total	% saw only MD	% saw RN only	% saw MD + RN
Beirut	82	34	8		124	66.1	27.4	6.5
Mount Lebanon								
Suburbs of Beirut	9	5	0		14	64.3	35.7	0
Baabda	59	4	0	2	65	90.8	6.2	0
Aley	27	7	2		36	75	19.4	5.6
Chouf	11	0			11	100	0	0

Kesrouane	57	0	20	77	74.0	0	26.0
Jbeil	19	0		19	100	0	0
Metn	43	0		43	100	0	0

South Lebanon

Jezzine	11	4		15	73.3	26.7	0
Saida	41	0	1	42	97.6	0	2.4
Nabatieh	26	1		27	96.3	3.7	0
Marjeyoun	28	0	4	32	87.5	0	12.5
Tyre	7	15	1	23	30.4	65.2	4.3
Bint Jbeil	27	23	6	56	48.2	41.1	10.7
Hasbaya	12	0		12	100	0	0

Beqa'a

West Beqaa	36	0	28	64	56.3	0	43.8
Zahleh	10	6	5	21	47.6	28.6	23.8
Baalbeck	13	0		3	16	81.3	0
Hermel	14	3		1	18	77.8	16.7
Rachaya Al Wadi	8	4	2	14	57.1	28.6	14.3

The North

Akkar	17	13	3	33	51.5	39.4	9.1
Tripoli	35	0		35	100	0	0
Zogharta	30	5		35	85.7	14.3	0
Koura	5	2		7	71.4	28.6	0
Batroun	33	13	3	49	67.3	26.5	6.1
Minnieh	22	1		23	95.7	4.3	0

Totals **682** **140** **83** **6** **911** **74.9** **15.4** **9.1**

G- Time of consultation at health centers

Almost half of the respondents who were seen by the physician had spent between six and ten minutes in the consultation. About a quarter spent anywhere between 10 and 20 minutes, and another quarter spent merely up to five minutes (Table 22f).

With the nurse, 61% of the respondents had spent up to five minutes, and another 29% anywhere between 6 and 10 minutes. The pattern of the consultation that included a physician as well as a nurse followed the pattern of the physician.

Table 22f- INTRA study- Distribution of the respondents by time spent with clinic staff

	Physician	Nurse	MD+RN	Others
0-5 minutes	190	157	19	

6-10 minutes	317	74	52	2
11-20 minutes	171	23	12	1
> 21 minutes	3	2		
Totals	681	256	83	3

A quarter of the patients considered that the time of the consultation with the physician was excessive, primarily those who had spent longer than 5 minutes, while only 3% thought that the time was too little and not enough. These were patients who had spent between 0-5 minutes with the physician only, as expected. Less than 1% of the total respondents expressed the feeling that the physician had not been friendly (Table 22g).

Table 22g- INTRA study- Distribution of the respondents by opinion as to time spent with the physician and the friendliness

Physician	Excessive	Too little	Not friendly
0-5 minutes	24	19	4
6-10 minutes	93	3	2
11-20 minutes	23		
> 21 minutes	2		
Totals	142	22	6

In comparison, a quarter of the clients felt that the time spent in consultation with the nurses was excessive, while only 5% felt it was too little. A small proportion 3% expressed the feeling that the nurse was not friendly (Table 22h).

Table 22h- INTRA study- Distribution of the respondents by opinion as to time spent with the nurse and the friendliness

Nurse	Excessive	Too little	Not friendly
0-5 minutes	14	13	5
6-10 minutes	26	0	2
11-20 minutes	7	0	1
> 21 minutes			
Totals	47	13	8

It seems overall that the respondents have been satisfied with the services received at the center, as well as the courtesy expressed towards them by the providers, who have been mainly the physician alone or the physician along with the nurse.

H- Satisfaction with the health center services

When asked “*What do you most like about the health center*”, the respondents were very positive as shown in Table 23a below, across all the facilities in the qadas.

A quarter (21%) highlighted the good service provided to clients, while almost half expressed satisfaction will all aspects, whether services, facilities, environment, cost, staff experience and courtesy shown to the clients.

Table 23a- INTRA study- Distribution of the respondents by satisfaction with services at the clinic by administrative division

Health Center	Service	Place	Facilities	Staff	Politeness	Inexpensive	All	Totals
Beirut	38	1	7	16	3	18	41	124
Mount Lebanon								
Suburbs of Beirut	3	2	2	3	1	1	2	14
Baabda	10	3	1	12	2	5	32	65
Aley	3	3	1	13	4	8	4	36
Chouf	3	0	1	0	0	7	0	11
Kesrouane	2	2	2	1	1	14	55	77
Jbeil	0	0	0	1	0	1	17	19
Metn	3	0	1	2	0	1	36	43
South Lebanon								
Jezzine	3	1	0	1	0	0	10	15
Saida	17	0	0	3	1	2	19	42
Nabatieh	2	0	0	12	4	6	3	27
Marjeyoun	9	1	11	0	1	10	0	32
Tyre	2	0	0	4	0	1	16	23
Bint Jbeil	14	0	0	1	0	3	38	56
Hasbaya	1	0	0	0	3	8	0	12
Beqa'a								
West Beqaa	14	0	0	7	2	0	41	64
Zahleh	7	3	0	2	0	3	6	21
Baalbeck	3	3	0	5	0	0	5	16
Hermel	7	0	0	0	0	0	11	18
Rachaya Al Wadi	3	0	0	3	0	0	8	14
The North								
Akkar	9	0	0	0	7	1	16	33
Tripoli	20	2	0	7	2	1	3	35
Zogharta	1	0	0	16	0	1	17	35
Koura	1	0	0	1	0	0	5	7
Batroun	17	0	0	11	3	0	18	49
Minnieh	2	0	0	0	7	0	14	23
Totals	194	21	26	121	41	91	417	911
Percent	21.3	2.3	2.9	13.3	4.5	10.0	45.8	100

I- Recommendations for a better service

When asked to indicate what could be done to improve the service at the health center, 41% of the respondents across the country responded by “nothing”. The service seemed perfect in their opinion. Only 1% wanted to improve the service (Table 23b).

However, almost half of the respondents (48%) indicated that the medications were in short supply and measures ought to be taken to increase the availability of these medicines.

Important suggestions were also advanced: an extension of the clinic hours into the evening (3.1%), better diagnostic and specialist services (6.7%), and easier accessibility of the clinic by either keeping the clinic on the ground floor, or minimize the stairs (0.5%)(elevator, lifts, etc.).

These responses seem to confirm the satisfaction of the clients with the health center and the services it provides.

Table 23b- INTRA study- Distribution of the respondents as to recommendations for better services at the clinic by administrative division

Health Center	Nothing	Service	Medications	Evening Service	Diagnosis	Stairs	Totals
Beirut	79	2	26	8	8	1	124
Mount Lebanon							
Suburbs of Beirut	12	0	2	0	0		14
Baabda	36	0	24	2	3		65
Aley	7	1	26	2	0		36
Chouf	4	0	3	0	4		11
Kesrouane	69	1	4	0	3		77
Jbeil	18	0	1	0	0		19
Metn	27	0	14	0	2		43
South Lebanon							
Jezzine	2	0	11	0	2		15
Saida	30	0	3	0	8	1	42
Nabatieh	9	0	14	2	1	1	27
Marjeyoun	5	2	21	2	1	1	32
Tyre	4	1	15	2	1		23
Bint Jbeil	0	0	54	0	2		56
Hasbaya	4	0	8	0	0		12
Beqa'a							
West Beqaa	6	0	55	2	1		64
Zahleh	7	1	11	0	2		21
Baalbeck	2	0	10	3	1		16
Hermel	6	1	9	1	1		18
Rachaya Al Wadi	1	0	13	0	0		14

The North

Akkar	4	0	27	2	0		33
Tripoli	0	1	29	1	4		35
Zogharta	28	1	6	0	0		35
Koura	0	0	6	0	1		7
Batroun	9	0	36	2	2		49
Minnieh	1	0	8	0	14		23
Totals	370	11	436	29	61	4	911
Percent	40.6	1.2	47.9	3.2	6.7	0.4	100

Patients with Hypertension

Nearly four out of every ten persons (350 clients) interviewed reported being hypertensive (38%). Only 6% of this group (20 out of 350) were informed by the physician or the nurse within the last year; the rest have had high blood pressure for longer than one year. In fact more than half, had high blood pressure for longer than five years (Refer to Table 18a).

Clients who had indicated that they had hypertension were interviewed using Questionnaire B. This is the special questionnaire designed for this category of clients at the health center. Responses were obtained mainly from 279 respondents, 31% of the entire group. Seventy one (71) respondents who had reported that they suffer from hypertension have not received Questionnaire B.

More than 40% of the clients suffering from hypertension are in the 60-69 years age bracket. Only 22% are in the younger age bracket 50-59 years. 29% are in the 70-79 years and less than 7% are older than 80 years (Table B1a)

Evidence from the Egyptian Hypertension Project²⁰, on a random sample of 6,733 subjects in six governorates, revealed that the prevalence of hypertension is unusually high (30.4%) for a developing country. The findings show that the prevalence was highest among elderly subjects (65-71 years). The prevalence of hypertension among elderly females was 71% and 55% for elderly men, thus reversing the higher prevalence among males before the age of 45 years. These two rising prevalence rates cross at about the age of 56 years when both males and females have the same prevalence of hypertension

As noted earlier, one third of the patients had been diagnosed in a tertiary care hospital, 26% at that same health center and yet another 17% in a private clinic (office-based clinic).

Table B1a- INTRA study- Distribution of the respondents suffering from hypertension as to the facility of diagnosis and age (in brackets)

Age brackets	Same Health center	Other PHC	IIry hosp	IIIry hosp	Pharmacy	MD's clinic	Specialty	Totals	Perce
50-54	6	5	1	6	1	7		26	9.3
55-59	6	5	4	15	1	5	2	38	13.6
60-64	16	7	2	15	5	11	1	57	20.4
65-69	16	9	1	21	1	7	2	57	20.4
70-74	9	4	2	15	3	8		41	14.7
75-79	15	3	2	14	1	6		41	14.7
80-84	3			5	2	2	3	15	5.4
85+ years	1			1		2		4	1.4
Totals	72	33	12	92	14	48	8	279	100
Percent	25.8	11.8	4.3	33.0	5.0	17.2	2.9	100	

As far as gender distribution, clients suffering from hypertension are predominantly women – almost two thirds. It should be remembered however that women constitute 59% of the total number of respondents

²⁰ . Ibrahim MM et al. *Report on the US/Egyptian Cooperative Health Project on Hypertension. 1991-1993*

in this study (Table B1b). There is no significant difference by gender as far as the facility where the diagnosis of hypertension was made.

Table B1b- INTRA study- Distribution of the respondents suffering from hypertension as to gender and the place of diagnosis

	Same Health center	Other PHC	Iiry hosp	IIiry hosp	Pharmacy	MD's clinic	Specialty	Totals
Men	26	15	5	27	4	17	2	96
Women	46	18	7	65	10	31	6	183
Totals	72	33	12	92	14	48	8	279

The great majority of clients suffering from hypertension are not working (Table B1c). Evidently, they are mostly in the older groups. The rate of unemployment in the overall INTRA respondents was also close to 80%. There is no significant difference between the respondents receiving Questionnaire A only and those receiving both questionnaires.

Table B1c- INTRA study- Distribution of the respondents suffering from hypertension as to occupation and the place of diagnosis

	Same Health center	Other PHC	Iiry hosp	IIiry hosp	Pharmacy	MD's clinic	Specialty	Totals	Perce
Not working	61	27	12	75	8	38	6	227	81.4
Employee	1	1		1		2		5	1.8
Farmer	1	1		5	1	2	1	11	3.9
Merchant		1				1		2	0.7
Worker	7	1		10	5	4	1	28	10.0
Taxi driver		1		1				2	0.7
Grocery	1							1	0.4
Dress maker	1	1				1		3	1.1
Totals	72	33	12	92	14	48	8	279	100

Less than one quarter of the patients suffering from hypertension do smoke (22%). This is very close to the overall prevalence of 25% in the INTRA overall respondents. (Table B1d).

Table B1d- INTRA study- Distribution of the respondents suffering from hypertension as to smoking

	Totals
Smoker	62
Does not smoke	217
Totals	279

When asked “*Where were you first diagnosed as being hypertensive*”, 33% the respondents indicated that they were first diagnosed in a tertiary care hospital. The second most common facility where the diagnosis had been made was in that same primary health care center in 26% of the cases. Private

physician clinics were the facility mentioned by 17% and another health center by 12% of the respondents (Table B1e).

A quarter of the overall respondents indicated that they had been discovered to have a high blood pressure on a routine medical visit, another 25% in an emergency visit. However 43% had had symptoms that led to a visit where the diagnosis of hypertension was made. Only 5% were detected in a screening program.

Table B1e- INTRA study- Distribution of the respondents suffering from hypertension as to the place and circumstances of diagnosis

	Routine medical visit	Screening program	Emergency service	By chance	Symptoms	Totals	Percent
Same health center	21	4	9	1	37	72	25.8
Another PHC	11	5	2		15	33	11.8
Iiry care hospital	1	2	7		2	12	4.3
IIiry care hospital	18	4	49		21	92	33.0
Pharmacy	4				10	14	5.1
Private clinic	14		5	1	28	48	17.2
Specialty clinic	2				6	8	2.9
Totals	71	15	72	2	119	279	100
Percent	25.4	5.4	25.8	0.7	42.7	100	

The majority of the clients (61%) had been first discovered to have hypertension in a private facility, i.e. a hospital, a physician clinic, a pharmacy. One third of the patients had been diagnosed in a public clinic, and only 5% in an NGO-run facility (Table B2a).

Table B2a- INTRA study- Distribution of the respondents suffering from hypertension as to the ownership of the facility of diagnosis

	Number	Percent
Public clinic	94	33.7
Private facility	171	61.3
NGO clinic	14	5
Totals	279	100

A little more than 30% of the total population of respondents had hypertension. In certain qadas, the percentage of clients seeking care for hypertension was well above the average of the sample. Thus 87% of the patients in Minnieh, North Lebanon had hypertension. Equally high proportions have been reported from Koura also in North Lebanon. Low proportions were found in Batroun and Akkar (North Lebanon), Hasbaya, Saida and Marjeyoun in the South, Chouf and Zahleh. The numbers however were too small to yield any significant values.(Table B2b)

Table B2b- INTRA study- Distribution of the respondents suffering from hypertension as to facility of diagnosis and administrative division

Administrative division	Same Health center	Other PHC	Iiry hosp	IIiry hosp	Pharmacy	MD's clinic	Specialty	Totals HBP	T Respo
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Beirut	12	3		14	8	2	1	40	1
Mount Lebanon									
Suburbs of Beirut	3	1	1		1	1		7	1
Baabda	10		2	8		5		25	6
Aley	3	2	2	1	2	5	3	18	3
Chouf	1					1		2	1
Kesrouane	8	9	3	3	1	1		25	7
Jbeil	1	2		2				5	1
Metn	8			2				10	4
South Lebanon									
Jezzine	1			4		1		6	1
Saida	2					4		6	4
Nabatieh				11		1		12	2
Marjeyoun	1			4		1		6	3
Tyre	1	1				4		6	2
Bint Jbeil	8	4		7		3		22	5
Hasbaya				2				2	1
Beqa'a									
West Beqaa	3		1	5		4	1	14	6
Zahleh						1		1	2
Baalbeck	1			1	1	2	3	8	1
Hermel				5				5	1
Rachaya Al Wadi		1		2		1		4	1
The North									
Akkar		0				4		4	3
Tripoli	4	1	2	6		1		14	3
Zogharta	1	2		0		1		4	3
Koura	1			2		2		5	
Batroun	1	1		5	1			8	4
Minnieh	2	6	1	8		3		20	2
Totals	72	33	12	92	14	48	8	279	9
Percent	25.8	11.8	4.3	33.0	5.0	17.2	9.2	1.8	1

When asked “*When were you diagnosed as having hypertension*”, a little more than half the respondents indicated that they had been diagnosed over five years ago. Only 3% were diagnosed on the day of the interview at the center. 45% have had hypertension over a period anywhere between one and five years (Table B3).

Table B3- INTRA study- Distribution of the respondents suffering from hypertension as to the time since diagnosis

Number Percent

Today	8	2.8
Less than 5 years	130	45.1
More than 5 years	150	52.1
Totals	288	100

A little more than 70% of the clients go for regular follow up at the same health center. It appears that the same primary health center where the interview had been conducted is the preferred facility of the respondents. An additional 9% were coming to that same health center for the first time that day. Therefore all in all about 80% of the clients had chosen their HC as the preferred facility for health care.

An additional group that constituted 13% of the overall number of clients go for follow up at another PHC as well. Only 0.4% go to the pharmacist to check up on their Blood pressure and for follow up. Unexpectedly only 0.4% check their Blood pressure at home (Table B4).

Table B4- INTRA study- Distribution of the respondents suffering from hypertension as to the facility of the follow up

	Follow up	Percent Follow up
Diagnosed today	26	9.3
Same health center	196	70.3
Another PHC	36	12.9
Irry care hospital	9	3.2
IIrry care hospital	2	0.7
Pharmacy	1	0.4
Home	1	0.4
No follow up	8	2.9
Totals	279	100

Although a little less than 96% of the respondents had indicated that the physician or the nurse at the clinic had advised them to carefully control their blood pressure on a regular basis, only 15% indicated that they come to check their blood pressure upon the physician advice. The overwhelming majority comes to check their blood pressure when they do not feel well or have symptoms that are attributed to the hypertension (Table B5).

Table B5- INTRA study- Distribution of the respondents suffering from hypertension as to the cause of the follow up

	Number	Percent
Diagnosed today	15	5.4
As per MD advice	42	15.1
When I don't feel well	134	48.0
Both 2 and 3	88	31.5
Totals	279	100

Could the clinic fees present a barrier to seek advice and come for follow up? This may be raised since only a little less than 20% did not have to pay to be seen at the clinic. 71% indicated that they had to pay some of the fees, whereas only 9% did pay the full fee (Table B6). This is to be viewed against the

information that all of the clinics surveyed were either public (government-run) or run by Non-Governmental Organizations. It seems that some fees are being levied as a contribution to the costs incurred at the clinic.

Table B6- INTRA study- Distribution of the respondents suffering from hypertension as to the payment of fees at the clinic

	Number	Percent
Paid nothing	55	19.7
Paid part	198	71
Paid full	24	8.6
Paid percent unknown	2	0.7
Total	279	100

When asked “*Besides a PHC center, how else do you get your blood pressure measured?*” about half the clients indicated that they have their blood pressure checked by family, relatives, neighbors or by themselves. In this question, 19% indicated that they head to the pharmacist to check their blood pressure. Another 19% indicate they check their BP only at this health center (Table B7).

Table B7- INTRA study- Distribution of the respondents suffering from hypertension as to the facility for BP checkup

	Number	Percent
Iry care hospital	7	2.5
IIry care hospital	11	3.9
Neighbor/Family	97	34.8
Self	39	14
Pharmacy	53	19
Only in this health center	53	19
In another PHC Center	16	5.7
Diagnosed today	3	1.1
Totals	279	100

Half the respondents were unaware that there is a family history of hypertension. 40% respondents indicated that they were aware that some family members are suffering from hypertension (Table B8).

Table B8- INTRA study- Distribution of the respondents suffering from hypertension as to the family history for hypertension

	Number	Percent
Yes	111	39.8
No	141	50.5
Don't know	27	9.7
Totals	279	100

When asked “*Compared to 12 months ago, is your blood pressure better, worse, or the same?*”, about two thirds indicated that the blood pressure was indeed better. Only 8% indicated that it was worse, and 21.5% the same (Table B9).

Table B9- INTRA study- Distribution of the respondents suffering from hypertension as to the improvement of their BP

	Number	Percent
Better	184	65.9
Same	60	21.5
Worse	23	8.2
Don't know	7	2.5
Did not measure BP	5	1.8
Totals	279	100

Of the respondents 26% had been hospitalized over the past one year. However only 43% of these admissions were related to the hypertension they are suffering from. The hospitalization did assist in controlling their blood pressure in almost all cases (Table B10a).

Table B10a- INTRA study- Distribution of the respondents suffering from hypertension as to hospital admissions

Hospitalization	Number	Percent
Yes	73	26.2
No	206	73.8
Totals	279	100

Hospitalization due to HBP	Number	Percent
Yes	32	42.7
No	42	56
Don't know	1	1.3
Totals	75	100

HBP controlled at hospital	Number	Percent
Yes	73	97.3
No	1	1.3
Don't know	1	1.3
Totals	75	100

A little more than a quarter (26%) of the respondents suffering from hypertension were admitted to hospital in the past year (Table B10b). The gender distribution was consistent with the overall distribution, i.e. there was no difference in hospitalization rate due to gender. A little less than half (44%) of these hospitalizations were reported to be due to hypertension.

Table B10b- INTRA study- Distribution of the respondents suffering from hypertension as to hospital admissions and gender

	Hospitalized	Not hosp	Totals	Related to HBP	Not related to HBP	Totals
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Men	27	69	96	9	18	27
Women	46	137	183	24	24	48
Totals	73	206	279	33	42	75
Percent	26.2	73.8				

As expected almost all respondents indicated that they have been prescribed medications to control their high blood pressure. Also, practically (98.6%) all of them responded that they have been taking their medications, as prescribed (Table B11).

Table B11- INTRA study- Distribution of the respondents suffering from hypertension as to compliance with medicines for HBP

Prescribed Meds	Number	Percent
Yes	269	97.5
No	7	2.5
Totals	276	100

Taking their meds	Number	Percent
Yes	273	98.6
No	4	1.4
Totals	277	100

The surveyed patients with hypertension take several medications every day. One respondent indicated that he takes 18 different medicines every day! Nevertheless those patients that do take more than six different medications every day represent close to 12% of the total number of patients with hypertension. Only a fifth take one medication only! (Table B12)

Table B12- INTRA study- Distribution of the respondents suffering from hypertension as to the number of medicines for HBP

No. of meds taken	Number	Percent
Only 1	56	20.3
Two	68	24.6
Three	48	17.4
Four	46	16.7
Five	26	9.4
Six	14	5.1
Seven	8	2.9
8+	10	3.6
Totals	276	100

Almost one third of the patients with hypertension indicated that they do NOT take their medications regularly. Almost 12% mentioned that the cost of medications is the reason of their non-compliance (Table B13). Another 20% responded that the meds are not readily available or that they forget to take their meds. This is likely to be a polite response to the fact that they may not be able to afford the cost of the medications, since the medications in Lebanon are normally easy to obtain, and the patients' families tend to remind them of the need to take their meds.

Table B13- INTRA study- Distribution of the respondents suffering from hypertension as to the reason for non compliance with medicines

	Number	Percent
Cost	32	11.7
Not easily available	25	9.2
Don't like meds	4	1.5
Only when I feel I need it	4	1.5
I forget	26	9.5
I don't know	4	1.5
I take it regularly	178	65.2
Total	273	100

Almost two thirds of the patients with hypertension did not develop complications, at least as yet (Table B14a).

Of those who did, retinopathy alone or with renal or cardiac problems or stroke dominated the list of complications. Stroke was mentioned by a little more than 5% of the total number of patients with hypertension.

Table B14a- INTRA study- Distribution of the respondents suffering from hypertension as to the nature of complications

Complications of HBP	Number	Percent
No	180	64.7
Renal problems	6	2.2
Stroke	15	5.4
Retinopathy	30	10.8
Cardiovascular	14	5
Others	6	2.2
I do not know	5	1.8
Renal and eye	7	2.5
Stroke, renal and eye	4	1.4
Eye and HBP	10	3.6
Eye and Cardiac	1	0.4
Totals	278	100

However, when asked if they are aware of any complications of hypertension, only 60% of the patients responded that they did. Most of these patients had been informed by the clinic staff, i.e. either the physician, or the nurse or the other health professionals (Table B14b).

Table B14b- INTRA study- Distribution of the respondents suffering from hypertension as to their awareness of complications

Aware of complications	Number	Percent
Yes	164	59
No	114	41

Totals	278	100
Informed by Staff	Number	Percent
Yes	155	90.6
No	16	9.4
Totals	171	100

When asked specifically if they had been told that stroke is related to hypertension, 80% responded positively while 20% said they had not been told that stroke is related to high blood pressure! (Table B14c)

Table B14c- INTRA study- Distribution of the respondents suffering from hypertension as to their awareness of stroke as a complication

Stroke and HBP	Number	Percent
Yes	218	79.3
No	57	20.7
Totals	275	100

It is to be remembered that 6% of the entire group of respondents have had a stroke (See Table 20a). When asked whether they had suffered a stroke, only 4.5% of the respondents replied in the affirmative, mostly within the last two years (Table 20c).

Prevalence of Hypertension

Longitudinal data collected over a 30-year period has shown that the prevalence of hypertension increases with age²¹. The increase of arterial blood pressure which occurs progressively throughout life has been confirmed by the European Working Party on High Blood Pressure in the Elderly (EWPHE)²² which showed that about two-thirds of the elderly can be defined as hypertensive. While the majority of elderly hypertensives have elevated systolic and diastolic blood pressure, only 20% have isolated systolic hypertension²³.

Evidence from the Framingham study (32) showed that the risk of coronary heart disease increases as blood pressure rises. Hypertension is also the most common risk factor for cerebrovascular events and congestive heart failure²⁴. The risk of coronary heart disease, stroke and congestive heart failure not only increases with advancing age, but with the degree of elevation of systolic blood pressure. A thorough knowledge of the multiple risk factors and essential needs of this growing subgroup of hypertensives is required.

²¹Kannel WB, Dawbar TR, McGee DL. Perspective on systolic hypertension. The Framingham study. *Circulation*, 1980, 61:1179-82.

²² Amery A et al. Mortality and morbidity results from the European Working Party on High Blood Pressure In The Elderly Trial. *Lancet*, 1985, 1:1349-54

²³ . Gorlin R. Hypertension and ischaemic heart disease. The challenge of the 1990s. *American heart journal*, 1991, 121:658-63

²⁴ . Perry HM et al. Morbidity and mortality in the Systolic Hypertension in the Elderly Program (SHEP) pilot study. *Stroke*, 1989, 20:4-13

The primary target organ in hypertension is the arterial system. The pathophysiology of essential hypertension is characterized by increased peripheral vascular resistance due to hypertrophy of arterial vessel walls, which in the elderly is usually associated with a reduction in cardiac output. In elderly hypertensives, especially those with isolated systolic hypertension, the predominant vascular abnormality is reduced arterial distensibility²⁵.

In elderly hypertensives, arterial stiffening associated with age and hypertension is caused by the disturbance of the normal elasticity of the arterial wall which is a determinant of systolic blood pressure²⁶. In addition, elderly subjects tend to experience modifications in other cardiovascular and renal parameters that regulate arterial blood pressure, such as increased catecholamine levels, reduced renal blood flow, reduced renal natriuretic capacity, reduced glomerular filtration rate and reduced baroreceptor sensitivity.

It is unclear whether these changes associated with renal vasculature are the cause or effect of increased blood pressure²⁷. Reduced renal natriuretic capacity predisposes elderly hypertensives to hyponatraemia, particularly during thiazide therapy and to a higher likelihood to sensitivity to the pressor effect of dietary salt. With increasing age, the renin angiotensin system is suppressed in both normotensive and hypertensive individuals, leading to a much lower renin angiotensin activity.

Baroreceptor sensitivity is reduced because of increased arterial rigidity, resulting in a diminished ability to minimize short-term blood pressure fluctuations and predisposing the elderly hypertensive to dizziness and orthostatic hypotension.

Isolated systolic hypertension is common among the elderly and may have a guarded prognosis. The SHEP trial examined the value of antihypertensive therapy in elderly men and women with isolated systolic hypertension and showed that, compared with placebo, there was a highly significant reduction in stroke (36%), coronary events (25%) and episodes of heart failure (50%) following antihypertensive therapy.

The SYS-EUR trial in European countries confirmed the results of the SHEP trial. The MRC trial on older hypertensives (65-70 years) showed a 25% reduction of all cardiovascular events following treatment. The STOP-Hypertension trial (70-84 years) showed that fatal and non-fatal strokes were significantly reduced by 47% while total mortality was reduced by 43%.

The pathophysiology of coronary heart disease is similar in old and young patients, except that there is an increased incidence of asymptomatic myocardial infarction in the elderly²⁸. Hypertension leads to increased shear stress and intimal damage, while medial thickening predisposes arteries to atherosclerosis. Hypertension in atherosclerotic arteries may provoke the rupture of plaques with ulceration. The combination of diabetes mellitus and hypertension enhances the development of atherosclerosis. Pre-existing hypertension has a considerable impact on increased morbidity and mortality from myocardial infarction (38).

²⁵ Flack JM et al. A rational approach to hypertension treatment in the older patient. *Geriatrics*, 1992, 47:24-38.

²⁶ . O'Rourke M. Systolic blood pressure: arterial compliance and early wave reflection and their modification by antihypertensive therapy. *Journal of human hypertension*, 1989, 3 (suppl.) 1:47-52.

²⁷ . Lakatta EG et al. Hypertension in the elderly: age and disease related complications and therapeutic implications. *Cardiovascular drugs therapy*, 1993, 7:643-53

²⁸ Ambepitya GB, Lyengar EN, Roberts MR. Review: Silent exertional myocardial ischaemia and perception of angina in elderly people. *Age and ageing*, 1993, 22:302-7.

The elderly have age-related cardiovascular changes and a high prevalence of coexisting conditions that can considerably influence the choice of antihypertensive therapy, such as arrhythmia, bronchospasm, congestive heart failure, diabetes mellitus, hyperlipidaemia, left ventricular hypertrophy, peripheral vascular disease and renal impairment.

Hypertensive therapy

During 1991 and 1992, three major interventional trials were published that dealt with the value of antihypertensive therapy in the elderly. These were the American Systolic Hypertension in the Elderly Program (SHEP)²⁹, the Swedish Trial in Old Patients with Hypertension (STOP-Hypertension)³⁰ and the British Medical Research Council (MRC) trial on treatment of hypertension in older adults³¹. They compared antihypertensive treatment, mainly diuretics and beta-receptor blocking agents, or the two in combination, with placebo. Two of the trials (SHEP and STOP) were double blind, whereas the MRC trial was single blind. All three were multicentred, prospective and randomized. SHEP was specifically designed to evaluate antihypertensive treatment in patients with isolated systolic hypertension. All three trials showed that treatment of hypertension in the elderly reduces the risk of stroke and cardiovascular events. On the basis of these trials, it is apparent that therapy with low-dose thiazides or beta-blockers, or the two in combination, can produce highly beneficial results in elderly patients. Furthermore, the cost-benefit aspects of such treatment is at least as positive as in young and middle-aged hypertensive patients³².

More recent studies are the Multicentre Trial on Treatment of Isolated Systolic Hypertension (SYS-EUR) and the Veterans Cooperative Study Group^{33, 34}. The therapy used in these studies included diuretics and calcium antagonists. These stand out as particularly effective in elderly subjects, while beta adrenergic blockers and angiotensin-converting enzyme inhibitors may be less suitable in this patient group³⁵. In most countries, in accordance with the guidelines of the World Health Organization³⁶, newer antihypertensive drugs are increasingly being used as first-line agents.

The ultimate goal of antihypertensive therapy is not only to prevent cardiovascular and cerebral complications, but also to improve the quality of life at a cost that can be borne by the community³⁷. The SHEP trial demonstrated that therapy increased the prevalence of intolerable side effects in elderly hypertensives with isolated systolic hypertension. It is against this background that treatment benefit in

²⁹ SHEP. Prevention of stroke by antihypertensive drug treatment in older persons with isolated systolic hypertension. *Journal of the American Medical Association*, 1991, 256:3255-64

³⁰ Dahlof B et al. Morbidity and mortality in the Swedish Trial in Old Patients with Hypertension (STOP-Hypertension). *Lancet*, 1991, 388:1281-5.

³¹ MRC Working Party. Medical Research Council trial of treatment of hypertension in older adults: principal results. *British medical journal*, 1991, 338:405-12

³² Hansson L. Future goals for the treatment of hypertension in the elderly with reference to STOP-Hypertension, SHEP and the MRC trial in older adults. *American journal of hypertension*, 1993, (suppl.) 6:40S-3S

³³ Staessen J et al. SYST-EUR. A multicentre trial on the treatment of isolated systolic hypertension in the elderly. *Journal of cardiovascular pharmacy*, 1992, 19:120-5.

³⁴ Veterans Administration Cooperative Study Group. Effects of treatment on morbidity in hypertension. *Journal of the American Medical Association*, 1970, 213.

³⁵ Applegate WB. Managing the older patient with hypertension. *American journal of hypertension*, 1993, (suppl.) 6:227S-8S

³⁶ . The WHO/ISH Mild Hypertension Liaison Committee. *1988 Guidelines for the management of mild hypertension: memo from WHO/ISH*, 1989, 67:493-8.

³⁷ Fletcher A. Pressure to treat and pressure to cost: a review of cost-effectiveness analysis. *Journal of hypertension*, 1991, 9:193-8.

terms of fewer non-fatal coronary accidents, fewer non-fatal strokes and episodes of left ventricular failure should be viewed.

Most elderly hypertensives are symptom-free from hypertension. The large number of subjects who would be eligible for treatment and who, in the frailty of old age, would be exposed to sometimes deleterious side-effects of medical treatment, suggested that a more conservative approach should be taken than that offered to younger hypertensives. In addition, blood pressure measurements should be taken while patients are standing and supine to avoid orthostatic hypotension.

Disability and Chronic illness

As the overall number of elderly people increases there is a corresponding rise in the number of older persons with disabilities. Such disabilities may be social, physical, mental or psychological. Data from the USA have estimated that 9.5 million, non-institutionalized individuals, experience difficulty in performing basic activities, such as walking, self-care and home-management activities³⁸. Of these, 59% are over the age of 65 years. In the 65-74-year-old age group, one in nine individuals has difficulty in performing basic activities. This ratio rises to one in four in the 75-84-year-old age group and three in five in individuals aged 85 years and over.

Epidemiological studies of mental, physical and social disorders among the elderly are vital for setting policies and for planning and providing services to this section of the population. It is claimed that by the age of 65-74 years, 3% of the total population will have some cognitive impairment and that by the age of 85 years nearly half may be demented³⁹. However, this percentage rises to 66% when the elderly are institutionalized⁴⁰.

A Canadian study of institutions for the elderly found that cognitive and behavioral impairment was widespread among the residents of three types of institution: nursing homes, homes for the aged and psychiatric hospitals⁴¹. In Hong Kong the age-specific prevalence rate of dementia for people aged over 75 years varies from 2.5% to 15.9%⁴², while this rate increases to between 32% and 63% among confined to institutions⁴³.

The degree of cognitive impairment of elderly people in institutions should influence the type of care required. Special programs offering social stimulation, as well as skilled nursing care, should be offered to minimize functional problems (10). After examining various possible interactions to improve the care provided to nursing home residents who have cognitive and behavioral problems, Rover and Rubins suggested that the most effective intervention would be to increase the staff-to-resident ratio⁴⁴.

Instruments for assessing mental health in the elderly vary greatly in content, detail and administration time, but it is generally agreed that brief screening tests are clinically useful for case identification and in monitoring changes over time⁴⁵ (12).

The objective of health and social policy in old age is to extend not simply the length of life but also its quality. Thus, an understanding of the determinants of living free of disability (or health expectancy as it is generally termed) is essential. In assessing the burden of disease, disability should be included in addition to mortality and morbidity so as to be able to set priorities.

³⁸ *Disability statistics abstract. People with disabilities in basic life activities in the US, number 3.* Washington DC, US Department of Education, National Institute on Disability and Rehabilitation Research, 1992.

³⁹ Evans DA et al. Prevalence of Alzheimer's disease in a community population of older persons. Higher than previously reported. *Journal of the American Medical Association*, 1989, 262:2551-6.

⁴⁰ Bland RC, Newman SC, Orn H. Prevalence of psychiatric disorders in the elderly in Edmonton. *Acta psychiatrica Scandinavica*, 1988, 77 (suppl. 338):57-63.

⁴¹ Teitelbaum L, Ginsburg ML, Hopkins RW. Cognitive and behavioral impairment among elderly people in institutions providing different levels of care. *Canadian Medical Association*, 1991, 144 (2):169-73.

⁴² Woo J et al. Prevalence of cognitive impairment and associated factors among elderly Hong Kong Chinese aged 70 years and over. *Neuroepidemiology*, 1994, 13:50-8.

⁴³ Victor CR. *Health and health care in later life.* Milton Keynes, Open University Press, 1991:76-86

⁴⁴ Rovner BW, Rubins PV. Mental illness among nursing home patients. *Hospital community psychiatry*, 1985, 36:119-120, 128

⁴⁵ Blessed G. Measurement in psychogeriatrics. In: Arie T, ed. *Recent advances in psychiatry.* Edinburgh, Churchill Livingstone, 1985.

It is well-understood nowadays that such priorities should be directed towards diseases that contribute most to healthy life expectancy rather than to crude life expectancy.

Disability among the elderly is best measured by activities of daily living (ADL) and Instrumental ADL (IADL). "Studies that use these measures are currently lacking in Lebanon" reports Dr Sibai in 1998. Nevertheless, Dr Sibai undertook the following analysis that utilized the PHS data on disabilities as a proxy measure for ADLs. There is a general belief, however, that all data sources suffer major under reporting biases on disability statistics. The results of the PHS with respect to disability are shown in the several tables below and comparisons were done with other surveys.

In Lebanon, as a whole, and according to the PHS data (1996), disability burden seems to affect 2.6% of males and 1.0% of females in the total population.

Among males, the age groups that were mostly affected were 20-29 years (5.2%), 30-39 years (3.9%) and 70 years or more (3.5%). Among females, disability was by far most prevalent (3.2%) in the age group 70 years or more (See below)

Table C1a-Sibai-Trends in prevalence of disability among the total Lebanese population, over 2 decades: 1983-84, 1992-93 & 1996 Study

Prevalence of disability in %	Beirut 1983-84 (1)	Beirut 1992-93 (2)	Beirut 1996 (3)	Lebanon 1996 (3)
Men				
0-9 years	0.6	0.5	0.4	0.5
10-19	1.2	0.8	0.8	1.2
20-29	1.4	2.1	4	5.2
30-39	0.9	2.1	3.5	3.9
40-49	0.3	2.5	2.3	2.7
50-59	0.8	3.4	1.6	2.1
60-69	2.7	3.5	1.3	2.5
70+ years	4.1	3.7	2.2	3.5
Totals	1.2	2	2.1	2.6
Total population	6708	4298	200456	1563557
Women				
0-9 years	0.3	0	0.3	0.4
10-19	0.2	0.6	0.7	0.7
20-29	0.3	0.9	0.9	1.3
30-39	0.8	1.2	1	1.2
40-49	0.5	0.7	0.9	0.9
50-59	0.3	0.7	0.3	0.9
60-69	0.9	1.1	0.9	1.3
70+ years	4.4	4.9	2	3.2
Totals	0.6	1	0.8	1
Total population	7027	4610	209408	1571469

(1) Khlal M & Armenian H, 1984

(2) Nuwayhid I, Sibai A, Adib S and Shaar K.H, 1997

(3) PHS, 1996

In the national study of 1999 (NHHEUS), the sample of about 33,000 persons yielded a prevalence of disability of about 2%, with the rate in men (2.5%) higher than that for women (1.6%). In both groups, the rate of disabilities was higher in the less privileged regions of the country, being highest in the Mohafazat of Nabatieh in South Lebanon. It should be remarked that this region, as well as the South have suffered a great deal from wars and civil unrest, perhaps more than the other regions of the country.

Table C1b-NHHEUS 1999- Prevalence of disability among the total Lebanese population

Mohafazat	Prevalence of disabilities %	Sample
Men		
Beirut	1.7	1494
Beirut Suburbs	2.1	3669
Mount Lebanon (rest of)	2.7	2446
North Lebanon	2.9	3233
South Lebanon	2.9	1934
Nabatieh	3.6	1178
Beka'a	2.3	2247
Totals	2.5	16201
Women		
Beirut	1.5	1696
Beirut Suburbs	1.3	3797
Mount Lebanon (rest of)	1.4	2563
North Lebanon	2	3219
South Lebanon	1.8	1956
Nabatieh	1.9	1231
Beka'a	1.3	2175
Totals	1.6	16637
Men and Women		
Beirut	1.6	3190
Beirut Suburbs	1.7	7466
Mount Lebanon (rest of)	2	5009
North Lebanon	2.4	6452
South Lebanon	2.3	3890
Nabatieh	2.8	2409
Beka'a	1.8	4422
Totals	2	32838

The following table (Table C2) shows the distribution of the **disabled** Lebanese population by type of disability. The leading types of disability among both males and females were paralysis and mental illness across all studies.

Table C2-Sibai-Trends in types of disability among the total Lebanese population, over 2 decades: 1983-84, 1992-93 & 1996

Type of disability	Beirut 1983-84 (1)	Beirut 1992-93 (2)	Beirut 1996 (3)	Lebanon 1996 (3)
Men				
Blindness	10.2	8.2	3.8	7.4
Deafness/muteness	3.9	3.6	6.9	8.5
Amputation	7.7	8.2	10.1	9.6
Mental Illness	19.2	18.8	31.4	23.1
Paralysis	28.2	43.5	20.8	19.5
Other/Unspecified	30.8	17.7	27	31.9
Total %	100	100	100	100
Number	78	85	1749	18937
Women				
Blindness	5.1	6.5	2.9	7.5
Deafness/muteness	23.1	10.8	16.2	11.6
Amputation	5.1	2.2	4.8	4.1
Mental Illness	12.8	23.9	29.5	26
Paralysis	28.2	34.8	17.1	22.2
Other/Unspecified	25.7	21.8	29.5	28.6
Total %	100	100	100	100
Number	39	46	1155	12060

(1) Khlat M & Armenian H, 1984

(2) Nuwayhid I, Sibai A, Adib S and Shaar K.H, 1997

(3) PHS, 1996

Table C3a presents an overview of the distribution of disability among the elderly sub-population. Prevalence increased markedly with age, especially among females, although it was greater in magnitude among elderly men. The leading type of disability was found to be paralysis (29.5% among males and 28.7% among females). Blindness and deafness were much more important types of disability among the elderly than among the Lebanese population as a whole, and their contribution to disability increased with age.

Table C3a- PHS 1996-Sibai-Prevalence and type of disability among the ELDERLY Lebanese population

Prevalence & type of Disability	60-69 years	70+ years	Total
Men	2	3.4	2.6
Women	1.1	3.1	1.9
Men			
Blindness	10.5	16.5	13.7
Deafness/muteness	10.8	17.5	14.3

Amputation	16.3	6.4	11.1
Mental Illness	3.8	4.2	4
Paralysis	30.4	28.6	29.5
Other/Unspecified	28.2	26.8	27.4
Total %	100	100	100

Women

Blindness	11.7	14.5	13.5
Deafness/muteness	10.7	18.3	15.6
Amputation	7.8	4.1	5.4
Mental Illness	11.9	6.2	8.2
Paralysis	24.6	30.9	28.7
Other/Unspecified	33.3	26	28.6
Total %	100	100	100
Number	1087	2049	3136

In the NHHEUS national study of 1999, the prevalence of disabilities has been reported higher than in the PHS study of 1996. In the population aged 60 years and above, that included a national sample of close to 3,500 persons, about 5% of the interviewed reported a disability! Unusually also, men had a higher prevalence of disabilities (5.2%) than women (4.1%) above the age of 60 years (Table C3b).

Table C3b- NHHEUS 1999- Prevalence of disability among the ELDERLY Lebanese population

Prevalence of disabilities	Present %	Sample
60 years and above		
Men	5.2	1713
Women	4.1	1739
Men and Women	4.7	3451

Moreover, the primary cause of disability in the elderly population was disease or illness (58.5% males and 62.7% among females). This is in contrast to the results seen in the Lebanese population, all ages combined. These observations point to the importance of the burden of diseases among this age group. This is in accordance with published literature (Table C4).

Among diseases, the most disabling are noted to be cardiovascular diseases, neuro-psychiatric disorders and neoplasms since they were shown to contribute between 9 and 22% of life-years lost due to disability⁴⁶.

Table C4-Causes of disability among the elderly Lebanese population, PHS, 1996

Cause of Disability	60-69 years	70+ years	Total
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Men

⁴⁶ Murray & Lopez, 1997

Birth defect/Congenital	6.3	4.5	5.3
Accident	24.2	13.7	18.7
Disease/Illness	49.2	66.9	58.5
War	14.4	4.9	9.4
Other	5.9	10	8.1
Total %	100	100	100

Women

Birth defect/Congenital	14.1	5.2	8.3
Accident	16.4	9.4	11.8
Disease/Illness	52.7	67.9	62.7
War	8.8	3.7	5.5
Other	8	13.8	11.7
Total %	100	100	100
Number	1087	2049	3136

Disability among the elderly may be improved by focusing on the disease itself when present (e.g. prevention, treatment, palliation), the individual (e.g. education, welfare benefits, social support), and the environment (e.g. public transport, shops, entertainment, interior design).

Public health medicine, health and social services, local government authorities and other sectors may achieve better health of aging populations through concerted rather than fragmented actions⁴⁷. Several questions remain: what are the environmental, social and economic conditions in which this segment of the population is currently living who is the primary caregiver for the disabled elderly person living in the community and what are their resources and needs.

The NHHEUS study of 1999 has focused in details about the situation as regards chronic illness and incapacity amongst the older population, i.e. aged 50 years and above.

A national sample of 1,485 men (753) and women (732) from across Lebanon, aged 50 years and above, were interviewed as to difficulties they face in walking (Table C5), Self care (Table C6), performing activities of daily living (Table C7), presence of pain and discomfort (Table C8), presence of depression and anxiety (Table C9), difficulties in cognition (Table C10) and difficulties in sensory perceptions (Table C11).

The responses are herewith tabled. One would note that severe difficulties do affect a relatively small proportion of men and women primarily after the age of 65 years, and even in the age group 70 years and above.

Women are consistently reported to be in frailer condition than men across most conditions surveyed.

Table C5- NHHEUS 1999 study- Distribution of persons as to difficulty in walking, by gender and age (in brackets)

Difficulty in Walking %	Men	No problems	Very few	Some	Many	Unable to walk	Missing	Totals	Sar
	50-54	76.3	7.7	6.3	3.1	0.2	6.4	100	6

⁴⁷ Ebrahim, 1997

55-59	73.1	12.2	6	3.6	0.5	4.6	100	5
60-64	64.3	13.7	10.3	6.1	0.8	4.8	100	5
65-69	57.8	15.8	12.5	7.6	0.2	6.1	100	4
70+ years	35.6	18.6	18.1	13.5	1.7	12.5	100	7
Women								
50-54	63.4	14.6	12.3	6	0.7	3	100	6
55-59	57.5	18.7	13.3	7.7	0.7	2.1	100	5
60-64	46	19.3	17.5	11.5	0.6	5.1	100	5
65-69	38.8	22.6	15.7	14.8	3	5.1	100	4
70+ years	20.4	20.3	20.4	17.9	2.5	18.5	100	7
Men and Women								
50-54	69.6	11.3	9.4	4.6	0.4	4.7	100	13
55-59	65.2	15.5	9.7	5.7	0.6	3.3	100	11
60-64	54.9	16.6	14	8.9	0.7	4.9	100	10
65-69	48.1	19.2	14.1	11.3	1.7	5.6	100	8
70+ years	28.1	19.4	19.2	15.7	2.1	15.5	100	14

Table C6- NHHEUS 1999 study- Distribution of persons as to difficulty in self care, by gender and age (in brackets)

Difficulty in Self Care %	No problems	Very few	Some	Many	Total Inability	Missing	Totals	Sample
Men								
50-54	89.5	2.5	0.3	1.1		6.6	100	6
55-59	88.8	3.8	1.8	0.5	0.5	4.6	100	5
60-64	86.5	5.2	1.8	0.6	1.1	4.8	100	5
65-69	85	4.7	3.1	0.7	0.7	5.8	100	4
70+ years	64.7	11.6	6.4	2.5	2.2	12.6	100	7
Women								
50-54	91.9	3.7	0.9	0.5	0.1	2.9	100	6
55-59	87.4	7.6	1.6	0.5	0.9	2	100	5
60-64	82.8	8.7	1.5	1.3	0.6	5.1	100	5
65-69	75	10	5.6	2.3	1.9	5.2	100	4
70+ years	53.6	12.1	8.3	4.7	2.9	18.4	100	7
Men and Women								
50-54	90.8	3.1	0.6	0.8	0.1	4.6	100	13
55-59	88.1	5.7	1.7	0.5	0.7	3.3	100	11
60-64	84.6	7	1.6	0.9	0.8	5.1	100	10
65-69	79.9	7.4	4.4	1.5	1.3	5.5	100	8
70+ years	59.2	11.9	7.3	3.6	2.6	15.4	100	14

Table C7- NHHEUS 1999 study- Distribution of persons as to difficulty in performing ADL, by gender and age (in brackets)

Difficulty in performing daily activities %	No problems	Very few	Some	Many	Total Inability	Missing	Totals	Sample
Men								
50-54	75.9	11.2	4.1	1.8	0.6	6.4	100	6

55-59	71.5	13.8	7	1.7	1.4	4.6	100	5
60-64	65.1	18.4	6.9	2.8	2.1	4.7	100	5
65-69	58.7	15.9	11.8	4.1	3.5	6	100	4
70+ years	40.7	19.7	13.4	7.6	6.1	12.5	100	7
Women								
50-54	61.4	20	10.9	3.8	0.8	3.1	100	6
55-59	53.9	24.3	14	4.1	1.7	2	100	5
60-64	49	21.8	15.8	6.8	1.6	5	100	5
65-69	43	22.6	17.1	7.1	5.1	5.1	100	4
70+ years	23.6	23.1	15.6	10.4	8.8	18.5	100	7
Men and Women								
50-54	68.3	15.8	7.7	2.8	0.7	4.7	100	13
55-59	62.6	19.1	10.5	2.9	1.6	3.3	100	11
60-64	56.8	20.2	11.5	4.9	1.9	4.7	100	10
65-69	50.7	19.3	14.5	5.6	4.3	5.6	100	8
70+ years	32.3	21.4	14.5	9	7.4	15.4	100	14

Table C8- NHHEUS 1999 study- Distribution of persons as to the presence of pain and discomfort, by gender and age (in brackets)

Presence of pain & discomfort %	No problems	Very few	Some	Many	Total Inability	Missing	Totals	Sam
Men								
50-54	54.7	23	11	3.9	0.9	6.5	100	6
55-59	49	24.4	15.8	5.1	1.2	4.5	100	5
60-64	45.2	24.9	19.3	5.1	0.9	4.6	100	5
65-69	41.5	26.9	19.7	4.3	1.6	6	100	4
70+ years	31.1	23.7	21.4	8.9	2.3	12.6	100	7
Women								
50-54	37	28.8	20.3	9	1.8	3.1	100	6
55-59	39.2	27.4	19.6	9.4	2.4	2	100	5
60-64	28.5	27.9	24.3	11.5	2.8	5	100	5
65-69	24.8	30.2	22.8	14.1	2.7	5.4	100	4
70+ years	14.8	24.1	24.9	13.4	4.3	18.5	100	7
Men and Women								
50-54	45.4	26	15.9	6.6	1.4	4.7	100	13
55-59	44.1	25.9	17.7	7.2	1.8	3.3	100	11
60-64	36.6	26.5	21.9	8.4	1.9	4.7	100	10
65-69	33	28.6	21.3	9.3	2.2	5.6	100	8
70+ years	23.1	23.9	23.1	11.1	3.3	15.5	100	14

Table C9- NHHEUS 1999 study- Distribution of persons as to the presence of depression & anxiety by gender and age (in brackets)

Presence of depression & anxiety %	No problems	Little	Moderate	Serious	Extremely serious	Missing	Totals	Sam
Men								
50-54	64.2	15.8	6.9	5.1	1.5	6.5	100	6
55-59	62.6	18	8.4	5.4	1.1	4.5	100	5

60-64	64.4	16.7	10.8	2.5	0.8	4.8	100	5	
65-69	57.2	19.2	11.3	4.7	1.6	6	100	4	
70+ years	49.2	20.2	10.9	5.4	1.8	12.5	100	7	
Women									
50-54	56.2	19.7	13	6.2	1.9	3	100	6	
55-59	54.4	23.3	11	6.5	2.7	2.1	100	5	
60-64	48.9	22.1	13.8	8.2	1.9	5.1	100	5	
65-69	45.6	22.6	14.8	7.3	4.4	5.3	100	4	
70+ years	34.7	22.6	13.1	7.7	3.1	18.8	100	7	
Men and Women									
50-54	60	17.9	10.1	5.7	1.7	4.6	100	13	
55-59	58.5	20.7	9.7	5.9	1.9	3.3	100	11	
60-64	56.4	19.5	12.4	5.4	1.4	4.9	100	10	
65-69	51.3	20.9	13.1	6	3	5.7	100	8	
70+ years	42.1	21.4	12	6.5	2.4	15.6	100	14	

Table C10- NHHEUS 1999 study- Distribution of persons as to the presence of cognition problems by gender and age (in brackets)

Cognition problems %	No problems	Very few	Some	Many	Severe	Missing	Totals	Sam	
Men									
50-54	81.4	7.8	3.9	0.3	0.1	6.5	100	6	
55-59	83.8	7.1	3.5	0.5	0.5	4.6	100	5	
60-64	79.6	10.4	4	1	0.3	4.7	100	5	
65-69	74	12.3	5.2	2.1	0.4	6	100	4	
70+ years	58	14.6	10.5	3.6	0.8	12.5	100	7	
Women									
50-54	79.2	9.8	5.8	1.6	0.5	3.1	100	6	
55-59	78.1	11.9	5.8	1.8	0.4	2	100	5	
60-64	73.4	13.5	4.9	2.8	0.3	5.1	100	5	
65-69	65.3	15.2	10.4	3.5	0.5	5.1	100	4	
70+ years	48.5	18.7	9	4.3	1.1	18.4	100	7	
Men and Women									
50-54	80.3	8.8	4.9	1	0.4	4.6	100	13	
55-59	80.9	9.5	4.7	1.1	0.4	3.4	100	11	
60-64	76.4	12	4.5	1.9	0.3	4.9	100	10	
65-69	69.6	13.8	7.9	2.8	0.4	5.5	100	8	
70+ years	53.3	16.6	9.8	3.9	0.9	15.5	100	14	

Table C11- NHHEUS 1999 study- Distribution of persons as to the presence of sensory problems by gender and age (in brackets)

Sensory problems %	No problems	Very few	Some	Many	Severe	Missing	Totals	Sam	
Men									
50-54	69.5	14.3	7.8	1.6	0.4	6.4	100	6	
55-59	66.4	18.1	8.5	2.1	0.4	4.5	100	5	
60-64	63.6	18.4	11	2	0.5	4.5	100	5	
65-69	57.5	18.9	13.3	2.7	1.5	6.1	100	4	

70+ years	39	20.1	18.4	7.2	2.7	12.6	100	7
Women								
50-54	66.2	17.6	10.9	2	0.3	3	100	6
55-59	64.4	21.3	9.7	2	0.7	1.9	100	5
60-64	56.7	20.9	14.3	2.7	0.2	5.2	100	5
65-69	52.4	18.8	18.3	4.3	1.1	5.1	100	4
70+ years	33.2	18.9	19.1	7.7	2.6	18.5	100	7
Men and Women								
50-54	67.8	16	9.4	1.8	0.3	4.7	100	13
55-59	65.4	19.7	9.1	2	0.6	3.2	100	11
60-64	60	19.7	12.7	2.4	0.3	4.9	100	10
65-69	54.9	18.8	15.9	3.5	1.3	5.6	100	8
70+ years	36.2	19.5	18.8	7.5	2.6	15.4	100	14

The Health Providers at the Primary Health Care Centers

As designed by the INTRA study, the health professionals at the surveyed health centers were to be interviewed. A special questionnaire (Questionnaire C) had been prepared by the Steering Committee of the study and finalized, as with the other two questionnaires, at the Valencia meeting in March 2002.

Questionnaire C was translated into the Arabic language by the Ministry of Health. It was then pre-tested (the Arabic version) along with the two other survey instruments in three health centers in Beirut by the public health specialist and the interviewers who had been retained for the study.

The finalized questionnaire was administered to a total of 92 health professionals at the health centers, 62% of them women (Table D1)

Table D1- INTRA Study- Distribution of health professionals according to gender

Health Providers- Gender	Number	Percent
Men	35	38
Women	57	62
Totals	92	100

The health professionals were mostly less than 50 years old. (It should be recalled that 50 years was the cut-off age for the older population surveyed in the INTRA study). Only 15% were older than 50 years (Table D2) and another 15% were less than 30 years old.

Table D2- INTRA Study- Distribution of health professionals according to age (in brackets)

Health Providers-Age	Number	Percent
20-29	13	14.4
30-39	35	38.9
40-49	29	32.2
50-59	9	10
60+ years	4	4.4
Totals	90	100

The health professionals that were interviewed were almost equally divided between physicians and other categories of health professionals (Table D3). A little less than 46% were physicians, 40% were nursing personnel, and about 15% were social workers, physiotherapists and administrators. A word of caution though: most of the clinic staff tend to work together often blurring the traditional separation of responsibilities, except for direct patient care (that remains the prerogative of the physicians).

Table D3- INTRA Study- Distribution of health professionals according to their health profession

Health Providers-Category	Number	Percent
Physician	42	45.7
Nurse	37	40.2

Physiotherapist	2	2.2
Social worker	8	8.7
Administrator	3	3.3
Totals	92	100

The physicians in the group were 42. However, when asked about their specialty, 71 responses were obtained from the smaller group of physicians. This need not be alarming. Many physicians, in Lebanon, as well as elsewhere may have more than one medical specialty, or may report a specialty as well as a sub-specialty.

Of interest was the reported high proportion of general practitioners and family physicians in the group (68%). This is comforting to know that health centers across the country seem to prefer general practitioners and family practitioners to staff their clinics. (Table D4).

Table D4- INTRA Study- Distribution of physicians according to their medical specialty

Physicians-Specialty	Number	Percent
Generalist/Family physician	48	67.6
Specialist	3	4.2
Cardiologist	6	8.5
Internist	2	2.8
Respiratory	1	1.4
Psychiatrist	1	1.4
Surgeon	6	8.5
Dermatologist	1	1.4
Gynecologist	3	4.2
Totals	71	100

Almost half (49%) of the health professionals surveyed have been working in health centers for longer than 10 years. A quarter were employed for less than five years. (Table D5)

When asked how long they have been working in that same clinic, 41% reported a period of employment for less than five years, while close to one third (31.5%) have been working for longer than ten years in that same health center.

Table D5- INTRA Study- Distribution of health professionals according to their period of employment in this and other health centers

Health Providers	Work in PHC	Percent	Work in this Center	Percent
Less than 5 years	25	27.2	38	41.3
5-10 years	22	23.9	25	27.2
More than 10 years	45	48.9	29	31.5
Totals	92	100	92	100

The surveyed health professionals appear to enjoy working with the older population. Only 10% preferred to work with younger age groups, while 46% reported no preference in dealing with the old versus the other age groups of clients. One ought to remember that these health centers are general clinics, open to all age groups. These are not clinics that are restricted to certain age groups.

Table D6- INTRA Study- Distribution of health professionals according to their attitude towards work with the older population**Work with the old population**

	Number	Percent
Less enjoyable	9	9.7
As much enjoyable	42	45.7
More enjoyable	41	44.6
Totals	92	100

One question in the survey asked health professionals whether they feared getting old. The responses indicate that 18.5% do fear getting old themselves. (Table D7)

Table D7- INTRA Study- Distribution of health professionals according to their attitude towards getting old themselves

Fear getting old	Number	Percent
Yes	17	18.5
No	75	81.5
Totals	92	100

Most professionals indicated that they communicate either well with the older patients (29%) or very well (69%). Only 2% felt that they do not communicate as well as they would have liked (Table D8).

Table D8- INTRA Study- Distribution of health professionals according to ability to communicate with the older population**Communicate well with the old**

	Number	Percent
A little	2	2.2
Do it well	27	29.3
Do it very well	63	68.5
Totals	92	100

Health professionals do ask patients if they did understand their advice and recommendations. This seems to be a constant characteristic of the health professionals, who responded that it was either “always” or “frequently” that they asked patients whether they were in fact understood (Table D9).

In fact almost all the health professionals surveyed do encourage patients to ask questions. Only two of the surveyed professionals reported that they either occasionally or never encouraged patients to ask questions. When asked the reason behind their reluctance to encourage patients to ask questions, the two professionals claimed that “this was not my responsibility” and “this is not my role”.

Table D9- INTRA Study- Distribution of health professionals according to their attitudes about asking questions by the older population

Ask patients if they understand you

	Number	Percent
Always	71	77.2
Frequently	20	21.7
Occasionally	1	1.1
Totals	92	100

Encourage patients to ask questions

	Number	Percent
Always	79	85.9
Frequently	11	12
Occasionally	1	1.1
Never	1	1.1
Totals	92	100

Health professionals were asked whether they had been educated and trained in the management of selected chronic diseases and risk factors, that are known to be more common amongst the older population. These conditions are hypertension, diabetes, coronary diseases, stroke, hyper-cholesterolemia and obesity. Two questions were asked: whether the professionals have been educated and trained in the prevention of the condition, while the second asked whether the health professional had received training in the diagnosis of the disease.

Two questions were asked for each of the conditions listed in table D10. The aggregate responses have been grouped together in the table below.

Consistently, a larger proportion of health professionals responded that they had been educated and trained in the prevention far more than in the diagnosis of these conditions. This is true for all the conditions. Diabetes topped the list with the proportion of professionals who reported having been educated and trained in the prevention of the disease. Diabetes was closely followed by education and training in the prevention of hypertension and obesity. The proportion that reported the smallest proportion in the education and training was for coronary diseases (68%).

Table D10- INTRA Study- Distribution of health professionals according to their knowledge of selected chronic diseases

Chronic diseases	Prevention	Diagnosis
Hypertension	79	63
Diabetes mellitus	83	66
Hyper-cholesterolemia	73	59
Obesity	78	64
Stroke	71	54
Coronary Diseases	68	54
Sample	92	92

The survey asked the surveyed health professionals how frequently and consistently do they inquire from their clients about their exposure to risk factors. All responses ranged between always and sometimes, with a skewed response to the “always” for smoking primarily and then dieting and physical activity. Alcohol consumption ranked least. The proportion of professionals who responded as “rarely or never” were very few indeed, except for the question related to alcohol consumption. When asked why do they

rarely ask about alcohol intake, most responded that alcohol consumption was not common in the cultural environment of the country (Table D11).

The low proportion of professionals who asked rarely or never their clients as far as smoking, dieting or exercise claimed that they did not feel it was their duty to ask the clients about their lifestyle, that this was someone else's responsibility!

Table D11- INTRA Study- Distribution of health professionals according to their inquiry from clients about risk factors

Life style- Inquire	Always	Sometimes	Rarely/Never
Smoking	73	19	
Dieting	61	29	2
Physical activity	58	28	6
Alcohol consumption	45	17	30

A related question was solicited from the surveyed health professionals as to whether they did advise the clients about refraining from risk factors, and how frequently did they offer the advice. Here again, most of the responses was in the “always” category. Heading the risk is advice about smoking, closely followed by diet and physical activity. The proportion of professionals who advised about alcohol consumption was far lower than for the other selected risk factors. A follow up question revealed that many of the professionals did not feel the need to ask about alcohol intake since this intake is not part of the culture.

One should note that a very large proportion of the population of Lebanon is Moslem and may not engage in alcohol intake as part of a religious abstinence (Table D12).

Table D12- INTRA Study- Distribution of health professionals according to their advice to clients about risk factors

Lifes style- Advise	Always	Sometimes	Rarely/Never
Smoking	85	6	1
Dieting	75	17	
Physical activity	73	16	3
Alcohol consumption	52	14	26

The opinion of the surveyed health professionals was sought as to the reasons why they think clients do not heed the advice offered as far as the avoidance of the selected risk factors (smoking, dieting, physical activity and alcohol consumption) is concerned. The largest proportion of responses were classified as “absence of will power”. A smaller proportion attributed the “non-compliance” of clients to their poor understanding of the advice offered (mainly for physical activity), or to a poor memory (especially for dieting) (Table D13).

Here again a large proportion of missing responses is detected in the questions related to alcohol consumption.

Table D13- INTRA Study- Distribution of health professionals according to the compliance of clients about risk factors

Patients' compliance	Don't understand	Bad	No will	Do not	Family	Money	Careless	Health
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	message	Memory	Trust HCS	problems	Problems	problem
Smoking	6	7	72	5	1	
Dieting	8	12	53	10	7	1
Physical activity	14	6	42	8	7	8
Alcohol consumption	3	5	51	3	9	3

In spite of their stated belief about patient’s compliance, health professionals responded that they continue to reinforce the advice relative to the risk factors at every visit, especially as regards smoking (79%), activity (77%) and dieting (70%). The proportion of professionals who reinforce the advice rarely or not at all lies in questions relative to alcohol consumption (37%) and depression (22%), for the reasons indicated above. Table D14.

Table D14- INTRA Study- Distribution of health professionals according to their reinforcement of advice to clients about risk factors

Reinforce advice at visits	Smoking	Diet	Activity	Alcohol	Depression
Always	79	70	77	37	38
Sometimes	11	22	14	18	24
rarely/Never	2		1	37	22
Totals	92	92	92	92	8

The majority of responses from health professionals relative to smoking was the need to quit the habit altogether (63%) or to reduce smoking (5%). A substantial proportion highlighted to clients the health problems caused by smoking (25%), with the assumption that the knowledge of these health problems would convince clients to stop smoking (Table D15).

Table D15- INTRA Study- Distribution of health professionals according to the content of their message on smoking to clients

Message smoking	Number	Percent
Quit smoking	63	68.5
Health problems	23	25
Reduce smoking	5	5.4
Missing	1	1.1
Totals	92	100

The advice offered to clients as far as dieting consisted of several and different messages, depending on the condition of the client. Some of the responses focused on reducing the intake of salt (10%), or of sugar (5%), or of fat (11%). The most frequent diet advice was to eat a balanced diet (21%). It is to be expected that more than a quarter of the professionals (26%) indicated that their advice was by necessity related to the condition of the client or to the risk factor he/she was being exposed to. (Table D16)

Table D16- INTRA Study- Distribution of health professionals according to the content of their message on diet advice to clients

Message Diet	Number	Percent
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Variety of food	6	6.5
Strict salt intake	9	9.8
Reduce fat intake	10	10.9
Reduce sugar intake	5	5.4
Eat balanced diet	19	20.7
Reduce body weight	3	3.3
Increase fiber intake	2	2.2
Eat plenty of vegetables/fruits	4	4.3
Depends on the medical condition	24	26.1
Complete nutrition counseling	10	10.8
Totals	92	100

The advice of health professionals to clients concerning physical activity was mainly to walk (74%) or to subscribe to a light exercise (25%). It should be noted that the risk factors tend to be more prevalent amongst the older population. It is thus to be expected that the recommended physical exercise is by necessity a lighter exercise than otherwise expected from younger age groups (Table D17)

Table D17- INTRA Study- Distribution of health professionals according to the content of their message on physical activity to clients

Message physical activity

	Number	Percent
Light exercise	23	25
Walking	68	73.9
Missing	1	1.1
Totals	92	100

A large proportion of “missing” responses were obtained relative to the advice offered by health professionals to the clients at the health centers relative to the intake of alcohol (38%). The cause has been stressed above and relates to the cultural and religious abstinence of a large proportion of the population of Lebanon as far as alcohol is concerned.

For those clients who do drink alcoholic beverages, the message of the health professionals was essentially not to drink (35%), or that alcohol is dangerous to one’s health (27%). (Table D18)

Table D18- INTRA Study- Distribution of health professionals according to the content of their message on alcohol consumption to clients

Message alcohol consumption

	Number	Percent
Alcohol is dangerous	25	27.2
Do not drink	32	34.8
Missing	35	38
Totals	92	100

A large proportion of professionals responded that they are indeed aware of the established guidelines appertaining to the management of hypertension (73%) to the general population and even to the older patients (65%); About two thirds of the professionals have even received training on these guidelines and close to 60% indicate that they do apply these guidelines. (Table D19). This is an impressive high

proportion of health professionals who have become familiar with the guidelines relative to the treatment of hypertension.

Table D19- INTRA Study- Distribution of health professionals according to the training they received on guidelines for hypertension

Norms	Number	Percent
Hypertension (in general)	67	72.8
Hypertension (for the old)	60	65.2
Training on guidelines	58	63
Apply the guidelines	54	58.7

The health professionals were asked to indicate their opinion as to the reasons for the non-compliance of clients vis-à-vis the advice given to them at the health centers. The largest proportion of responses attributed this non-compliance to either “poor educational level of the patient” (29%) or to “a weak will power” (28%). About 10% thought that patients do not heed the health advice because they do not trust the health care system of the country. About 14% have put the economic difficulties experienced by the patients as the primary cause (Table D20).

Table D20- INTRA Study- Distribution of health professionals according to their perceived reasons for non compliance of clients concerning advice

Reason for non compliance	Number	Percent
Do not trust the HCS	9	9.8
Poor education	27	29.3
Poor understanding	9	9.8
Bad memory	3	3.3
No will power	26	28.3
Family problems	3	3.3
Economic difficulties	13	14.1
Careless	2	2.2
Totals	92	100

A similar question to the former surveyed the health professionals to their opinion as to the reasons behind the non compliance of patients in following the prescribed regimen of medications. In this question, a quarter of professionals attributed the cause to the cost of the medications. The largest percentage claimed that clients stop the treatment once they feel better or when the symptoms disappear. (Table D21). A smaller percentage may take the meds because they forget to take them or do not believe strongly in medications.

One may wonder whether these varied responses do not have an underlying common denominator which is the cost of the medications, especially when it has to be taken for a long while, often for the rest of one's life.

Table D21- INTRA Study- Distribution of health professionals according to their perceived reasons for non compliance of clients regarding taking prescribed medicines

Non compliance for medicines

Number	Percent
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Lack of confidence in meds	5	5.4
When asymptomatic, abandon Rx	32	34.8
Not convinced when Sx free	12	13
Forget to take meds	6	6.5
Unable to take meds alone	4	4.3
No money to buy meds	23	25
Side effects	2	2.2
No meds at the clinic	3	3.3
Careless	3	3.3
Do not like to take meds	2	2.2
Totals	92	100

Health professionals were equally divided as to whether the older population could in fact change the patterns of their lifestyles. Whereas 53% thought that the old population could, the balance or 47% believed that this may not be possible (Table D22).

Table D22- INTRA Study- Distribution of health professionals according to their perception as to whether the old could change their lifestyle

Can the old change lifestyle?

	Number	Percent
Yes	49	53.3
No	43	46.7
Totals	92	100

In a somewhat related question, health professionals were asked whether they thought the promotion of behavioral changes and healthier lifestyles are effective in the health center in which they work. More than one third (37%) thought the promotion of behavioral changes at the health center is very effective; another 61% believed it was quite effective. Only 2% felt that it was not effective (Table D23).

Table D23- INTRA Study- Distribution of health professionals according to their perception as to whether the promotion of behavioral change is effective at the health center

Promoting behavioral change at PHC

	Number	Percent
Very effective	34	37
Quite effective	56	60.9
A little bit effective	2	2.2
Totals	92	100

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