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NATURAL COURSE OF ENDEMIC DERMATOPHYTOSES IN BOSNIA AND HERZEGOVINA

III. Family incidence and distribution

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ABSTRACT: The authors present and discuss family incidence and distribution of endemic dermatophyoses (trichophytosis—*T. violaceum*, favus—*T. schoenleinii*) in a group of well controlled villages in the course of investigations lasting 3—15 years. On the presented household-lists representing relationship between family members, the authors document existence and persistence of infections in families and individual family members and dynamics of the disease without an influence and of that influenced by appropriate treatment (griseofulvin). The predominant significance is stressed of female (mothers and grand mothers) patients, as the most important source of infection in the family, although some other source's (possibly the school) could not be excluded.

INTRODUCTION

In our previous publications we reported on the investigations of the significance of the soil's dermatophytes and keratinophilous fungi for the epidemiology of endemic dermatophyoses in Bosnia and Herzegovina (1981), as well as the general morbidity and dynamics of endemic dermatophyoses through several years after the systematic examinations of all population, based on census lists of these regions. Some regions were investigated several times in the course of the period of investigation lasting from 3 to 15 years.

Summarizing the previous results of our investigations, we have established that systematic examinations of all population are very important

These results are a part of investigations carried out at the ¹Institute for Dermatovenerology »Dr S. Milošević« — Sarajevo, as joint investigation with ² Mycology Division, C D C, Atlanta, Georgia, PL 480, No. 02-3352Z-178.

as well as the control of the disease in families, and that the endemic dermatophytoses should be treated as familial infections (Grin—Ožegović, 1960).

In this investigation, we used the same method of investigation of all population in respective village-regions, based on census lists and the households list. In the course of these investigations 25.908 persons were examined from 1960 to 1976. However, it should be mentioned that in the last year of the investigation only the infected persons and households were controlled.

All specimens of hair obtained from the examined people in investigated areas were controlled in the Mycological Laboratory in the Institute microscopically and by cultures, and the field examinations were carried out by skilled personnel, by physicians and technicians. As positive findings were regarded exclusively the ones established as positive clinically, microscopically and by culture.

Isolated dermatophytes in these investigations were as a rule related to *T. violaceum*, as an agent of the superficial trichophytosis, and *T. schoenleini* as the agent of favic lesions. On the significance of other dermatophytes we have already reported extensively (Grin-Ožegović, 1960; Grin-Ožegović-Šimić, 1972; Ožegović, 1975).

RESULTS AND DISCUSSION

These results are presented in lists. It should be reported and investigation we left the intentionally grouped villages their natural course of endemic dermatophytoses (Kopice, Ravne, Krivajevići) without any treatment, in contrast to those treated with griseofulvin in the course of a pilot study (Grin, 1962), such as Rastuša. Although in our investigations we had the same experience in many other villages, we do not present them here.

In the village of Kopice there were few or no changes in the course of the period 1967—1976: the number of infected persons was bigger (from 22 to 28), but the number of the carriers of the infection (infected persons) elder than 20 remained the same (lists 1, 2, 3, 11, 12, 16). As a rule these are the females from 26 to 40 years old (lists 2, 12, 16), and also older than 60 (lists 1, 3, 12, 13). In these families we have regarded the endemic dermatophytoses as familial infections, but at the same time it should be remembered that for a small number of infections we were not able to discover the source of infection in family of infected persons (lists 3, 7, 8, in part 11, 13), and that other sources of infection could not be excluded (school, neighborhood).

It is interesting that in one person (female) the spontaneous cure of infection was noted (list 16, number 9), whereas all other carriers of infections remained the same. For the males from the lists 11 and 12 it should



supposed that they were cured, but they were not examined at that time, and and this hypothesis is not too valid.

Also, in the village of Ravne it could be seen that in the course of the investigations (1967—1972) the infections were stable and that the carriers of the infections as a rule remained the same persons. There were double infections, favus and trichophytosis (list 1), and trichophytosis only.

On list 1 the course of infection from the mother could be clearly demonstrated, but when favus appeared in the children, the source of infection remained obscure. As the father was not investigated, it could be supposed that he was this possible source of infection. From the same list it could be seen how the traces of young infected women are lost when they get married and moved to other families, where they become a (new?) source of infection, especially for children. Epidemiologically important is the infection of the woman from List 4: from that infected person there was no spreading of the infection, because she was treated in the course of our investigations.

The village of Krivajevići was controlled three years only, but the previous statements could be generally applied to this village too. The stability of the infection in families is related to the source of infection, as a rule to the female persons (mother, lists 7 and 10) or to some not quite clear sources of infection in favic patients, although from the status of the father it could be concluded that the father was the source of infection (list 2). However, the significance of the mother in this family could not be neglected. In this village there were also individual cases which remained the only infected members in the family (list 4), the »independent« cases of infection for which we could not find a source of infection in the family (list 1 and 9).

The village of Rastuša represents another group, which in 1960 was treated by griseofulvin, and the control examinations were carried out three times in 1960 in six months intervals, after the end of the therapy, and in 1972 and 1975, as new control examinations of all treated houses and people.

Rastuša represents a village with a very high morbidity rate (156 infected with an average morbidity of 12,9%) which is exceptional in our conditions. The total number of infected people were distributed in 73 families, from which there follows that in each family more than 2 persons were infected. This statistical way of interpretation is not fully correct, but in such a large group it is easier to see the regularities. The table represents the distribution of the persons infected in families.

Table 1.

1 member infected in family	44,73%
2 members infected in family	23,48%
3 members infected in family	15,78%
4 members infected in family	10,52%
5 members infected in family	3,94%
6 members infected in family	1,31%

Table 2.
Sex and age distribution of patients in endemic dermatophytoses in
Bosnia and Herzegovina

Village	Kopice		Ravne		Krivajevići		Rastuša		All		All
	male	female	male	female	male	female	male	female	male	female	
age											
0—5	2	1	2	2	0	3	5	5	9	11	20 (9,04%)
6—11	7	6	1	1	0	4	19	24	27	35	62 (28,05%)
11—15	2	1	1	3	0	4	13	16	16	24	40 (18,09%)
16—20	2	1	2	3	2	1	8	16	14	21	35 (15,83%)
21—30	0	1	0	2	0	1	4	25	4	29	33 (14,93%)
31—40	0	0	0	0	0	0	0	8	0	8	8 (3,61%)
41 and more	0	2	0	3	0	3	0	13	0	23	23 (10,40%)
	13	12	6	14	2	16	49	107	70 (31,67%)	151 (68,32%)	

From this, there follows a very important distribution of individual infections, for which it is much easier to find an explanation if it is an elderly untreated patient, presumably woman (list 11, 12, 13, 14, 20), but not so easy when the patients are children for whose parents or relatives living with them we were not able to prove that they were infected (lists 2, 3, 4, 6, 7, 15). Typical examples of familial infections are also in Rastuša (lists 8, 10, 16, 29, 33, 35, 38, 45, 50), as well as the not fully discerned cases of individual infections in families. We should suppose that the infections spread easily in the exposed and receptive, but although all the inhabitants are more or less exposed, they are not all infected. When all or the most of individuals in a household are infected, the reason for that should be sought in the inner nature of the infected. In the same manner, in the uncured patients after the puberty the basic cause is in the diminished secretion of 17-ketosteroids, based presumably on the same dysfunction of the neuroendocrine system Grin-Zec-Stern, (1958). That is the very reason for the uneven sex and age distribution of the infected. In Rastuša, it could be seen that the greatest number of infected were in the age from 6 to 10 (27,56%, and 18,58% resp.) and that the infections up to the age of 30 were established in similar numbers (18,58% — 15 year, 15,38% — 20 year, 18,58% — 30 year), but thereafter there was a sharp decline of infections. However, in these age groups, the number of the infected by the sex and age distribution was not the same. After the 10th year of life in male patients the number of infections declined sharply and after the 30th year there was not observed any single case of infection in men, while in women this number of infected was on the same level, but also on a higher level in the age group between 21 and 30. A significant number of infected women were found in higher age groups, where they were the only infected persons. In fact, from all infected persons, after their 15th year, males were infected in 7,68% of cases, while in women after their 15th year there were 39,72% infected.

It can be concluded from our results, that these patients play a very important role as a reservoir of infection in maintaining and spreading the infections of endemic dermatophytoses.

CONCLUSIONS

Endemic dermatophytoses in their natural course represent very stable infections, which without intervention, especially the appropriate therapy, do not change or do not change significantly. Although the greatest part of these infections is restricted to the individual family member, still of greatest significance for maintaining and spreading of these infections are infections in the family, especially from elder female persons. The prevalence of female patients after the puberty is one of the prominent parts of epidemiology in endemic dermatophytoses.

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PRIRODNI RAZVOJ ENDEMSKIH DERMATOFITIJA U BOSNI I HERCEGOVINI

KRATAK SADRŽAJ

Autori su istraživali dinamiku endemskih dermatofitija na području Bosne i Hercegovine. Kao objekat istraživanja promatrana su, u periodu od 2—12 godina, sela na području endemskih dermatofitija, koja su podijeljena na ona u kojima je vršena klasična terapija grizeofulvinom i takva u kojima nije bilo nikakve terapije. Ukupno je pregledano više od 25.000 stanovnika. Na osnovu istraživanja koja su vršena po kućnim listama i pregledom svog stanovništva, autori dolaze do zaključka da su endemske dermatofitije veoma stabilne infekcije koje se bez odgovarajuće intenzivne terapije mijenjaju slabo ili nikako. Jedino je terapija griezofulvinom pokazala drastičan pad broja oboljelih i eliminirala izvore infekcije. Porast standarda i zdravstveno prosvećivanje imaju utjecaja, ali je taj utjecaj spor i slab.

Autori i ovog puta ističu ulogu oboljelih žena u održavanju i širenju infekcije, koje nakon navršene 20. godine života predstavljaju jedini ili gotovo jedni izvor infekcije. Autori smatraju da se endemske dermatofitije moraju tretirati, u prvom redu, kao porodične infekcije.

(Prilog: Household — liste, 14.)

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ZAVOD ZA KOŽNE I VENERIČNE BOLESTI
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HOUSEHOLD — LIST 1

Community: MAGLAJ
 Village: Kopice

Relationship	to	age	Examinations			Remarks
			1967	1972	1976	
1. head of household		1934				
2. wife	1	1937	—	—	—	
3. daughter	1/2	1959	+T	+T	+T	
4. daughter	1/2	1962	+T	—	—	
5. daughter	1/2	1963	—	+T	+T	
6. daughter	1/2	1967	—	—	—	
7. son	1/2	1968	—	—	—	
8. son	1/2	1970	—	—	—	

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HOUSEHOLD — LIST 2

Community: MAGLAJ
 Village: Kopice

Relationship	to	age	Examinations			Remarks
			1967	1972	1976	
1. head of household		1902	—	—	—	
2. wife	1	1904	+T	+T	+T	
3. daughter	1/2	1947	—			married
4. son	1/2	1950	—			
5. granddaughter	1/2	1956	—			
6. wife	4	1953	—	—		
7. son	4	1971	—	—		

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HOUSEHOLD — LIST 3

Community: MAGLAJ
 Village: Kopice

Relationship	to	age	Examinations			Remarks
			1967	1972	1976	
1. head of household		1929				
2. wife	1	1934	—	—		
3. son	1/2	1953	—			
4. daughter	1/2	1958	+T	+T	+T	
5. son	1/2	1961	+T	+T	+T	
6. daughter	1/2	1965	—	—	—	
7. son	1/2	1967	—	—	+T	
8. daughter	1/2	1970	—	—	—	
9. son	1/2	1975	—	—	—	

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HOUSEHOLD — LIST 7

Community: MAGLAJ
 Village: Kopice

Relationship	to	age	Examinations			Remarks
			1967	1972	1976	
1. head of household		1923	—	—	—	
2. wife	1	1923	—	—	—	
3. daughter	1/2	1949	—	—	—	
4. son	1/2	1952	—	—	—	
5. daughter	1/2	1955	—	—	—	
6. son	1/2	1958	+T	+T	+T	
7. son	1/2	1960	+T	+T	+T	
8. daughter	1/2	1963	—	—	—	
9. son	1/2	1967	—	—	—	
10. daughter	1/2	1968		+T		

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HOUSEHOLD — LIST 8

Community: MAGLAJ
 Village: Kopice

Relationship	to	age	Examinations			Remarks
			1967	1972	1976	
1. head of household		1948	—	—	—	
2. wife	1	1948	—	—	—	
3. son	1/2	1970		+T	+T	

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HOUSEHOLD — LIST 11

Community: MAGLAJ
 Village: Kopice

Relationship	to	age	Examinations			Remarks
			1967	1972	1976	
1. head of household		1935	—	—	—	
2. wife	1	1934	—	—	—	
3. son	1/2	1953	+T	—	—	
4. son	1/2	1958	—	—	—	
5. daughter	1/2	1957	—	—	—	
6. son	1/2	1963	+T	+T	+T	
7. daughter	1/2	1961	—	+T	+T	
8. son	1/2	1965	—	—	—	
9. son	1/2	1967		+T	+T	
10. daughter	1/2	1971		—	—	

T = Trichophytosis

F = Favus

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HOUSEHOLD — LIST 12

Community: MAGLAJ
 Village: Kopice

Relationship	to	age	Examinations			Remarks
			1967	1972	1976	
1. head of household		1917	—	—	—	
2. wife	1	1923	+T			
3. son	1/2	1946				
4. wife	3	1946	—	—	—	
5. daughter	3/4	1966	—	+T	+T	
6. son	1	1951	+T			
7. daughter	1/2	1953	+T			married, moved
8. daughter	1/2	1957	—			married, moved
9. daughter	1/1	1960	+T	+T	+T	
10. daughter	1/2	1963	—	+T	+T	
11. daughter	3/4	1968		+T	+T	
12. daughter	3/4	1972	—		+T	
13. wife	6	1950	—	—	—	
14. daughter	6/13	1970	—	—	+T	
15. son	3/4	1973			+T	
16. daughter	6/13	1975			—	

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HOUSEHOLD — LIST 13

Community: MAGLAJ
 Village: Kopice

Relationship	to	age	Examinations			Remarks
			1967	1972	1976	
1. head of household		1917	—	—	—	
2. wife	1	1916	—	—	—	
3. son	1/2	1947				
4. wife	3	1948	—	—	—	
5. daughter	3/4	1965	—	+T	+T	
6. son	3/4	1969		—	+T	
7. son	1/2	1953	—	—	—	
8. son	3/4	1974			—	
9. daughter	3/4	1976				
10. son	1/2	1949	—			

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HOUSEHOLD — LIST 16

Community: MAGLAJ
 Village: Kopice

Relationship	to	age	Examinations			Remarks
			1967	1972	1976	
1. head of household		1923	—			
2. wife	1	1923	+T	+T	+T	
3. daughter	1/2	1947	—	—		
4. son	1/2	1949				
5. daughter	1/2	1951	—	—		
6. son	1/2	1956	+T	—		
7. son	1/2	1964	—	+T	+T	
8. daughter	1/2	1966	—	+T	+T	
9. daughter	1/2	1950	+T	—		

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HOUSEHOLD — LIST 1

Community: MAGLAJ
 Village: Ravne

Relationship	to	age	Examinations			Remarks
			1967	1972	1976	
1. head of household		1923	—	—	—	
2. wife	1	1922	+T	+T	—	
3. son	1/2	1947	+T	—		treated
4. daughter	1/2	1949	F+T			married, moved
5. daughter	1/2	1949	F+T			married, moved
6. daughter	1/2	1953	F+T	F+T		
7. daughter	1/2	1958	+F	—		
8. son	1/2	1960	+F	+T	+T	
9. son	1/2	1962	—	F+T		
10. daughter	3	1972		—	—	
11. wife	3	1942		—	—	
12. son	3/11	1971		—	—	
13. son	3/11	1962		—	—	
14. daughter	3/11	1959		—	—	
15. daughter	3/11	1966		—	—	

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HOUSEHOLD — LIST 2

Community: MAGLAJ
 Village: Ravne

Relationship	to	age	Examinations			Remarks
			1967	1972	1976	
1. head of household		1933	—	—	—	
2. wife	1	1936	—	—	—	
3. daughter	1/2	1955	+T	—	—	married, moved
4. daughter	1/2	1959	+T	+T	+T	
5. daughter	1/2	1961	+T	+T	+T	
6. son	1/2	1964	+T	+T	+T	
7. son	1/2	1966	—	—	—	
8. mother	1	1887	+T	—	—	died 1970.
9. relative female	1	1950	+T	—	—	married, moved
10. daughter	1/2	1968	—	+T	+T	
11. daughter	1/2	1968	—	+T	+T	

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HOUSEHOLD — LIST 4

Community: MAGLAJ
 Village: Ravne

Relationship	to	age	Examinations			Remarks
			1967	1972	1976	
1. head of household		1923	—	—	—	
2. wife	1	1920	+T	—	—	
3. son	1/2	1946	—	—	—	
4. daughter	1/2	1948	—	—	—	
5. relative, male	1	1959	—	—	—	
6. wife	3	1950	—	—	—	
7. son	3/6	1968	—	—	—	
8. daughter	3/6	1970	—	—	—	

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HOUSEHOLD — LIST 1

Community: KLADANJ
 Village: Krivajevići

Relationship	to	age	Examinations		Remarks
			1973	1975	
1. head of household		1914	—	—	
2. wife	1	1921	—	—	
3. daughter	1/2	1958	+F	+F	
4. son	1/2	1960	—	—	

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HOUSEHOLD — LIST 2

Community: KLADANJ
 Village: Krivajevići

Relationship	to	age	Examinations		Remarks
			1973	1975	
1. head of household		1927	—		
2. wife	1	1931	—	—	
3. son	1/2	1952	—	—	
4. daughter	1/2	1955	+F	+F	
5. daughter	1/2	1958	+F	+F	
6. daughter	1/2	1961	+F	+F	
7. daughter	1/2	1964	+F	+F	
8. daughter	1/2	1967	—	+F	
9. daughter	1/2	1971	+F	+F	
10. wife	3	1954	—		

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HOUSEHOLD — LIST 3

Community: KLADANJ
 Village: Krivajevići

Relationship	to	age	Examinations			Remarks
			1973	1973	1975	
1. head of household		1920	—	—	—	
2. wife	3	1946	—	—	—	
3. son	1	1947				
4. daughter	2/3	1967	+F			
5. son	2/3	1969	+F			
6. daughter	1	1958	—	—	—	
7. son	1	1961	+F			
8. daughter	2/3	1974				

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HOUSEHOLD — LIST 4

Community: KLADANJ
 Village: Krivajevići

Relationship	to	age	Examinations		Remarks
			1973	1975	
1. head of household		1902			
2. wife	1	1908	+F	+F	
3. son	1	1953	—	—	Status post favus treated
4. son	1	1949			
5. wife	3	1955		—	
6. daughter	3	1975		—	

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HOUSEHOLD — LIST 7

Community: KLADANJ
 Village: Krivajevići

Relationship	to	age	Examinations			Remarks
			1973	1973	1975	
1. head of household		1927				
2. wife	1	1926	—	+T	+T	
3. son	1/2	1955	+T			
4. daughter	1/2	1960	+T		+T	

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HOUSEHOLD — LIST 9

Community: KLADANJ
 Village: Krivajevići

Relationship	to	age	Examinations		Remarks
			1973	1975	
1. head of household		1911			
2. wife	1	1918		—	
3. son	1/2	1945			
4. wife	3	1948	—	—	
5. son	1/2	1957	+F		moved-school
6. son	3/4	1970	—	—	
7. son	3/4	1974	—	—	

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HOUSEHOLD — LIST 10

Community: KLADANJ
 Village: Krivajevići

Relationship	to	age	Examinations		Remarks
			1973	1975	
1. head of household		1942		—	
2. wife		1943	+T	+T	
3. daughter	1/2	1962	+FT	+FT	
4. daughter	1/2	1965	+FT	+FT	
5. daughter	1/2	1967	+FT	+FT	
6. daughter	1/2	1969	+T	+T	
7. daughter	1/2	1971	+T	+T	
8. son	1/2	1975		—	

ZAVOD ZA KOŽNE I VENERIČNE BOLESTI
 »Dr S. MILOŠEVIĆ« — SARAJEVO

Treated 1960

HOUSEHOLD — LIST 2

Community: TESLIC
 Village: Rastuša

Relationship	to	age	Examinations					Remarks
			1960	1960	1960	1972	1975	
1. head of household		1907	—				—	
2. wife	1	1908	—				—	
3. son	1/2	1944	+T	—	—	—	—	
4. son	1/2	1942	—	—	—	—	—	
5. son	1/2	1949	—	—	—	—	—	
6. daughter	1/2	1953	—	—	—	—	—	
7. wife	3	1941			—	—	—	
8. wife	4	1946				—	—	
9. son	3/7	1962				—	—	
10. daughter	3/7	1963				—	—	

ZAVOD ZA KOŽNE I VENERIČNE BOLESTI
 »Dr S. MILOŠEVIĆ« — SARAJEVO

Treated 1960

HOUSEHOLD — LIST 3

Community: TESLIC
 Village: Rastuša

Relationship	to	age	Examinations					Remarks
			1960	1960	1960	1972	1975	
1. head of household		1912	—	—	—	—	—	
2. son	1	1940						
3. daughter	1	1943	+T	—	—	—	—	
4. son	1	1947	+T	—	—	—	—	
5. daughter	1	1950	+T	—	—	—	—	
6. wife	4	1948						
7. son	4/6	1971						

ZAVOD ZA KOŽNE I VENERIČNE BOLESTI
 »Dr S. MILOŠEVIĆ« — SARAJEVO

Treated 1960

HOUSEHOLD — LIST 4

Community: TESLIC
 Village: Rastuša

Relationship	to	age	Examinations					Remarks
			1960	1960	1960	1972	1975	
1. head of household		1927	—				—	
2. wife	1	1929	—	—	—	—	—	
3. son	1/2	1949	+T	—	—	—	—	
4. son	1/2	1952	—	—	—	—	—	
5. son	1/2	1953	—	—	—	—	—	
6. son	1/2	1955	+T	—	—	—	—	
7. son	1/2	1957	+T	—	—	—	—	
8. wife	3	1951						
9. daughter	3/8	1971						

ZAVOD ZA KOŽNE I VENERIČNE BOLESTI
 »Dr S. MILOŠEVIĆ« — SARAJEVO

Treated 1960

HOUSEHOLD — LIST 6

Community: TESLIC
 Village: Rastuša

Relationship	to	age	Examinations					Remarks
			1960	1960	1960	1972	1975	
1. head of household		1924						
2. wife	1	1924	—	—	—	—	—	
3. son	1/2	1946	—	—	—	—	—	
4. son	1/2	1951	+T	—	—	—	—	
5. daughter	1/2	1955	—	—	—	—	—	
6. wife	3	1943	—					
7. wife	5	1953						

ZAVOD ZA KOŽNE I VENERIČNE BOLESTI
 »Dr S. MILOŠEVIĆ« — SARAJEVO

Treated 1960

HOUSEHOLD — LIST 7

Community: TESLIC
 Village: Rastuša

Relationship	to	age	Examinations					Remarks
			1960	1960	1960	1972	1975	
1. head of household		1912	—	—	—	—	—	
2. wife	1	1912	—	—	—	—	—	
3. son	1/2	1940	—					
4. wife	3	1936	—	—	—	—	—	
5. son	1/2	1942	—	—	—	—	—	
6. wife	5	1939	—					
7. son	1/2	1947	+T	—	—	—	—	
8. daughter	3/4	1958	—	—	—	—	—	
9. wife	7	1942						
10. daughter	7/9	1968						
11. daughter	7/9	1971						
12. son	3/4	1960						
13. daughter	3/4	1969						

ZAVOD ZA KOŽNE I VENERIČNE BOLESTI
 »Dr S. MILOŠEVIĆ« — SARAJEVO

Treated 1960

HOUSEHOLD — LIST 8

Community: TESLIC
 Village: Rastuša

Relationship	to	age	Examinations					Remarks
			1960	1960	1960	1972	1975	
1. head of household		1927	—					
2. wife	1	1930	+T	—	—	—	—	
3. son	1/2	1944	—	—	—	—	—	
4. daughter	1/2	1947	+T	—	—	—	—	
5. daughter	1/2	1951	—	—	—	—	—	
6. daughter	1/2	1953	—	—	—	—	—	
7. daughter	1/2	1957	—	—	—	—	—	
8. daughter	1/2	1960						
9. son	1/2	1963						
10. daughter	1/2	1966						
11. daughter	1/2	1970						

ZAVOD ZA KOŽNE I VENERIČNE BOLESTI
 »Dr S. MILOŠEVIĆ« — SARAJEVO

Treated 1960

HOUSEHOLD — LIST 10

Community: TESLIC
 Village: Rastuša

Relationship	to	age	Examinations					Remarks
			1960	1960	1960	1972	1975	
1. head of household		1903	—	—	—	—	—	
2. wife	1	1904	+T	—	—	+T	+T	
3. daughter	1/2	1935	+T	—	—	—	—	
4. daughter	1/2	1937	—	—	—	—	—	
5. son	1/2	1939	—	—	—	—	—	treated in Sarajevo
6. son	1/2	1945	+FT	+F	+F	—	—	moved
7. son	1/2	1950	+T	—	—	—	—	Australia
8. wife	5	1939	—	—	—	—	—	
9. wife	7	1950	—	—	—	—	—	
10. daughter	7/9	1975	—	—	—	—	—	

ZAVOD ZA KOŽNE I VENERIČNE BOLESTI
 »Dr S. MILOŠEVIĆ« — SARAJEVO

Treated 1960

HOUSEHOLD — LIST 11

Community: TESLIC
 Village: Rastuša

Relationship	to	age	Examinations					Remarks
			1960	1960	1960	1972	1975	
1. head of household		1909	—	—	—	—	—	
2. wife	1	1922	—	—	—	—	—	
3. daughter	1/2	1943	+T	—	—	—	—	
4. son	1/2	1945	—	—	—	—	—	
5. son	1/2	1947	—	—	—	—	—	
6. son	1/2	1950	—	—	—	—	—	
7. son	1/2	1953	—	—	—	—	—	
8. daughter	1/2	1955	—	—	—	—	—	
9. daughter	1/2	1957	—	—	—	—	—	
10. wife	6	1954	—	—	—	—	—	

ZAVOD ZA KOŽNE I VENERIČNE BOLESTI
 »Dr S. MILOŠEVIĆ« — SARAJEVO

Treated 1960

HOUSEHOLD — LIST 12

Community: TESLIC
 Village: Rastuša

Relationship	to	age	Examinations					Remarks
			1960	1960	1960	1972	1975	
1. head of household-wife		1924	—	—	—	—	—	
2. daughter	1	1942	—	—	—	—	—	
3. son	1	1947	+T	—	—	—	—	
4. daughter	1	1954	—	—	—	—	—	
5. daughter	1	1957	—	—	—	—	—	
6. wife	3	1947	—	—	—	—	—	
7. son	3/6	1969	—	—	—	—	—	
8. daughter	3/6	1972	—	—	—	—	—	

ZAVOD ZA KOŽNE I VENERIČNE BOLESTI
 »Dr S. MILOŠEVIĆ« — SARAJEVO

Treated 1960

HOUSEHOLD — LIST 13

Community: TESLIC
 Village: Rastuša

Relationship to	age	Examinations					Remarks
		1960	1960	1960	1972	1975	
1. head of household	1930	—			—		
2. wife	1 1937	+T	—	—	—		
3. mother	1 1890	—		—			died
4. son	1/2 1961			—	—		
5. daughter	1/2 1963			—	—		

ZAVOD ZA KOŽNE I VENERIČNE BOLESTI
 »Dr S. MILOŠEVIĆ« — SARAJEVO

Treated 1960

HOUSEHOLD — LIST 14

Community: TESLIC
 Village: Rastuša

Relationship to	age	Examinations					Remarks
		1960	1960	1960	1972	1975	
1. head of household	1932	—			—		
2. wife	1 1935	+T	—	—	—		
3. daughter	1/2 1959	—	—	—			
4. daughter	1/2 1965						

ZAVOD ZA KOŽNE I VENERIČNE BOLESTI
 »Dr S. MILOŠEVIĆ« — SARAJEVO

Treated 1960

HOUSEHOLD — LIST 15

Community: TESLIC
 Village: Rastuša

Relationship to	age	Examinations					Remarks
		1960	1960	1960	1972	1975	
1. head of household	1908	—			—		
2. wife	1 1918	—			—		
3. son	1/2 1940	+T	—	—	—		
4. daughter	1/2 1944	—	—	—			
5. son	1/2 1950	+T	—	—			
6. wife	3 1940			—			
7. daughter	3/6 1961						
8. daughter	3/6 1964						
9. son	3/6 1966						
10. daughter	3/6 1971						

ZAVOD ZA KOŽNE I VENERIČNE BOLESTI
 »Dr S. MILOŠEVIĆ« — SARAJEVO

Treated 1960

HOUSEHOLD — LIST 16

Community: TESLIC
 Village: Rastuša

Relationship	to	age	Examinations					Remarks
			1960	1960	1960	1972	1975	
1. head of household		1925	—					
2. wife	1	1932	+T	—	—	—	—	
3. daughter	1/2	1953	+T	—	—	—	—	
4. son	1/2	1956	—	—	—	—	—	
5. son	1/2	1963				—	—	

ZAVOD ZA KOŽNE I VENERIČNE BOLESTI
 »Dr S. MILOŠEVIĆ« — SARAJEVO

Treated 1960

HOUSEHOLD — LIST 20

Community: TESLIC
 Village: Rastuša

Relationship	to	age	Examinations					Remarks
			1960	1960	1960	1972	1975	
1. head of household		1929						
2. wife	1	1936	+T	—	—	—	—	
3. son	1/2	1959	—	—	—	—	—	
4. son	1/2	1961				—	—	
5. son	1/2	1963				—	—	
6. daughter	1/2	1964				—	—	
7. daughter	1/2	1969				—	—	

ZAVOD ZA KOŽNE I VENERIČNE BOLESTI
 »Dr S. MILOŠEVIĆ« — SARAJEVO

Treated 1960

HOUSEHOLD — LIST 29

Community: TESLIC
 Village: Rastuša

Relationship	to	age	Examinations					Remarks
			1960	1960	1960	1972	1975	
1. head of household		1919	—		—	—	—	
2. wife	1	1922	+T	—	—	—	—	
3. daughter	1/2	1944	—	—	—	—	—	
4. daughter	1/2	1946	+T	—	—	—	—	
5. son	1/2	1950	—	—	—	—	—	
6. son	1/2	1954	—	—	—	—	—	
7. son	1/2	1958	—	—	—	—	—	
8. daughter	1/2	1948	—	—	—	—	—	

ZAVOD ZA KOŽNE I VENERIČNE BOLESTI
 »Dr S. MILOŠEVIĆ« — SARAJEVO

Treated 1960

HOUSEHOLD — LIST 31

Community: TESLIC
 Village: Rastuša

Relationship	to	age	Examinations					Remarks
			1960	1960	1960	1972	1975	
1. head of household — wife		1917	—	—	—	—	—	
2. son	1	1937	—	—	—	—	—	
3. son	1	1940	—	—	—	—	—	
4. son	1	1943	—	—	—	—	—	
5. son	1	1946	+T	—	+T	—	—	
6. son	1	1950	—	—	—	—	—	
7. son	1	1952	+T	—	+T	+T	—	
8. wife	3	1940	—	—	—	—	—	

ZAVOD ZA KOŽNE I VENERIČNE BOLESTI
 »Dr S. MILOŠEVIĆ« — SARAJEVO

Treated 1960

HOUSEHOLD — LIST 33

Community: TESLIC
 Village: Rastuša

Relationship	to	age	Examinations					Remarks
			1960	1960	1960	1972	1975	
1. head of household		1932	—	—	—	—	—	
2. wife	1	1936	+T	—	—	—	—	
3. daughter	1/2	1955	+T	—	—	—	—	
4. daughter	1/2	1957	+T	—	—	—	—	
5. son	1/2	1962	—	—	—	—	—	

ZAVOD ZA KOŽNE I VENERIČNE BOLESTI
 »Dr S. MILOŠEVIĆ« — SARAJEVO

Treated 1960

HOUSEHOLD — LIST 35

Community: TESLIC
 Village: Rastuša

Relationship	to	age	Examinations					Remarks
			1960	1960	1960	1972	1975	
1. head of household — wife		1905	+T	—	—	—	—	died
2. son	1	1943	+T	—	—	—	—	
3. daughter	1	1942	+T	—	—	—	—	
4. daughter	1	1950	+T	—	—	—	—	
5. son	1	1934	—	—	—	—	—	
6. wife	5	1942	—	—	—	—	—	
7. wife	2	1939	—	—	—	—	—	
8. son	2/7	1965	—	—	—	—	—	
9. daughter	2/7	1968	—	—	—	—	—	
10. son	2/7	1969	—	—	—	—	—	
11. daughter	2/7	1969	—	—	—	—	—	
12. son	5/6	1969	—	—	—	—	—	

ZAVOD ZA KOŽNE I VENERIČNE BOLESTI
 »Dr S. MILOŠEVIĆ« — SARAJEVO

Treated 1960

HOUSEHOLD — LIST 38

Community: TESLIC
 Village: Rastuša

Relationship	to	age	Examinations					Remarks
			1960	1960	1960	1972	1975	
1. head of household		1925						
2. wife	1	1927	+T	—	—	—	—	
3. daughter	1/2	1951	+T	—	—	—	—	
4. daughter	1/2	1953	+T	—	—	—	—	
5. son	1/2	1955	—	—	—	—	—	
6. daughter	1/2	1957	—	—	—	—	—	
7. aunt	1	1904	—	—	—	—	—	

ZAVOD ZA KOŽNE I VENERIČNE BOLESTI
 »Dr S. MILOŠEVIĆ« — SARAJEVO

Treated 1960

HOUSEHOLD — LIST 45

Community: TESLIC
 Village: Rastuša

Relationship	to	age	Examinations					Remarks
			1960	1960	1960	1972	1975	
1. head of household		1908	+T			+T	+T	
2. son	1	1927	—		—	—	—	
3. wife	2	1927	—	—	—	—	—	
4. son	1	1938	—	—	—	—	—	
5. wife	4	1938	—	—	—	—	—	
6. son	1	1942	—					
7. son	1	1945	+T	—	—	—	—	
8. son	4/5	1956	—	—	—	—	—	
9. daughter	4/5	1960	—	—	—	—	—	
10. son	4/5	1958	—	—	—	—	—	
and to 21 in age from 1942			to 1971 all negatives					

ZAVOD ZA KOŽNE I VENERIČNE BOLESTI
 »Dr S. MILOŠEVIĆ« — SARAJEVO

Treated 1960

HOUSEHOLD — LIST 50

Community: TESLIC
 Village: Rastuša

Relationship	to	age	Examinations					Remarks
			1960	1960	1960	1972	1975	
1. head of household		1920	+T	—	—	—	—	
2. son	1/6	1944	+T	—	—	—	—	
3. daughter	1/6	1949	+T	—	—	—	—	
4. son	1/6	1952	+T	—	—	—	—	
5. daughter	1/6	1953	+T	—	—	—	—	
6. wife	1	1943						
7. daughter	2	1960						
8. son	2	1968						
9. wife	4	1952						